A descriptive bulletin with explanations of courses and colleges at The University of Akron
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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 Engineer-
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ing was established. Other professional colleges followed: Education (1921), Business Administration (1935), 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 5,000 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 (1880's) and General Education (1935), the latter program being developed into one of the most fully rationalized in the country. Graduate work evolved from the awarding of the first master's degree (1882) to the beginning of doctoral work in 1956. Currently, the doctorate is offered in seven 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 1930's 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 80-acre campus with 50 modern buildings is located at the hub of an industrial urban area of 700,000 persons. The University of Akron now enrolls more than 16,500 day and 4,300 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 21,000 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 and State Board of Nursing Education and Nurse Registration. 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 Welfare 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. 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 he 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 doctor's degree.

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 doctor's 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 five-year program of courses leading to a Bachelor of Science degree in chemical, civil, electrical and mechanical engineering, 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, and in health and physical 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 can be offered upon approval of the Ohio Board of Regents.

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, 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, education, engineering; to the Doctor of Education degree in school administration; and to the Master's degree in accounting, biology, business administration, chemical engineering, chemistry, civil engineering, earth science, economics, education, electrical engineering, English, French, Geography, history, international business, 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 accred-
ited, and many of the faculty members teach both day and evening courses. As a result, more than 7,000 of the University's student enrollment 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 Orrville and Alliance.

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.

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 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 as will patrons of the B & O, Penn-Central and Erie-Lackawanna railroads. 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, is the Administration center of the University. It contains offices of the President, the Vice President for Academic Affairs, the Vice President for Planning, the Vice President for Business and Finance, and the Vice President Dean of Student Services and is headquarters for Development, the Treasurer, University Relations, University News Service, Publications, the Admissions Office, and Institutional Research. 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.

Education Building, provides a lecture room that seats 260. 19 general classrooms, a handicrafts 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.

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,
LEGEND
1 Memorial Hall
2 Kolbe Hall
3 Business Administration and Law Building
4 Library
5 Buchtel Hall
6 Gardner Student Center
7 Education
8 Knight Hall
9 Ayer Hall
10 Power Plant
11 Simmons Hall
12 Center for Urban Studies
13 Schrank Hall
14 Auburn Science and Engineering Center
15 Service Building #1
16 Speech and Hearing Clinic
17 Service Building #2
18 Performing Arts Hall | Under Construction
19 Ballet Center
20 Robertson Dining Hall
21 Spanton Residence Hall
22 Sisler-McFawn Residence Hall
23 Testing and Counseling Bureau
24 Economics
25 Bulger Residence Hall
26 Ritchie Residence Hall
27 Orr Residence Hall
28 Home Management House
29 Music Department Annex
30 Battrick House
31 Mitchell House
32 Thompson House
33 Liberal Arts Annex
34 Humanities Annex #1
35 Humanities Annex #2
36 Modern Languages Annex #3
37 Modern Languages Annex #2
38 Modern Languages Annex #1
39 Center for Information Services
40 Classics Department
41 Spicer Hall
42 Infirmary
43 Student Mail Room
as well as the English, speech, geography and geology departments. It is named for the first president of the municipal University. 

The University Library contains 259,600 volumes, 13,950 microforms and 83,500 U. S. government documents.

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. Unique features of the Main Library are the Herman Muehlstein Rare Book Room and the Charles E. and Mabel M. Ritchie Memorial Room that houses the University Archives.

The Science-Technology Division of the University Library is in the Auburn Science and Engineering Center. It houses circulating, reference, periodical and microform collections for the departments of biology, chemistry, geology, mathematics physics, polymer science and the colleges of engineering and nursing.

On the ground floor of the Main Library is Audio Visual Services with a collection of records and films for student use.

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.

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 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, 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 of 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.

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 Sider-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 twelve-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. Until the new dormitory facilities are completed several students are being quartered in other buildings near the campus. Temporary faculty offices 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 thirteen acres of ground encompassed only ten buildings. Since then, however, the student body has quadrupled, reaching in the 1969-70 academic year, a record high of more than 18,000. The campus has also grown, covering 80 acres with 50 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.

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, Audio-Visual Services, WAUP-FM, and the Radio Workshop.

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 coaxial cables to campus classrooms. This has proved to be an efficient 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. By June, 1969, approximately 70,000 class registrants will have participated in receiving part of their education by television. By then approximately 170 courses will have been presented in whole or in part, by this means since 1960.

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 audiovisual services was greatly expanded through allocation of a major portion of the ground floor of the present University Library building to the Audio-Visual Department. An extensive audiotape and phonograph collection is stored here for use of faculty and students.

Audio-Visual Services also has a Materials Production Division which prepares original artwork and photographic materials used by in-
structors 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 also integral parts of the Office of Instructional Media. 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 opportunities for fine professional experience are always enhanced by the traditional and close working relationships which exist between the Department of Speech and the Office of Instructional Media.

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.

Student booths are equipped with earphones, 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 360/50 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 Council Program Board and Associated Women Students. 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 Foundation of Summit County has established an internship for a University student who will coordinate campus programs to meet community needs.

Currently an Extracurricular Activities Committee made up of six students and six faculty members serves to recommend University recognition to student groups. The Vice President and Dean of Student Services is chairman of the committee which also makes recommendations regarding the allocation of student fees. Students interested in forming a group may submit their constitution and charter to the chairman of the committee for 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 serves as a liaison between the students and faculty.

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 Buchtelite . . . a weekly newspaper with 40-50 issues in each academic year. This is the campus "voice" with straight 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 20 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.

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 war dead of Summit County, has two spacious gymnasiums and a regulation size \(75' \times 35'\) swimming pool for the use of both men and women.
ties 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," floats for special parades, and competitive events such as the Interfraternity-Panhellenic Songfest.

Many students have 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, who are concerned about colleges reflecting society in general, 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 directory 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 students 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 the graduating student opportunities are provided for interviews with on-campus representatives of prominent businesses, industries and branches of government, including the military services and education at the primary, elementary, and secondary levels. Information on careers in both administration or teaching at the college 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 male 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 440 women and 670 men. 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 $1050, 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 twelve 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, Muslem Student Association, Intervarsity Christian Fellowship and the Kappa Phi club.
III.
The University of Akron Admissions, Requirements, Procedures and Cost

Types of Students

A university with an enrollment exceeding 18,000, 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

1. 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.

2. 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 PREDENTAL
1½ units of high school algebra
1 unit of plane geometry

ENGINEERING
1½ units of high school algebra
1 unit of plane geometry

MANAGEMENT

½ unit of solid geometry or
½ unit of trigonometry
1 unit of physics or chemistry

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 non-refundable Application Fee.

2. At the time of your application, ask an official of your high school to send your transcript to the Admissions Office. This record of your secondary school standing must be received and evaluated before any admission action can be taken by the University.

3. Take Entrance and Counseling 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.

In addition, special counseling tests administered only at the University are required of all new freshman applicants. Generally these tests may be taken at the University on the same day as the ACT or the SAT. They may also be taken during Orientation Week.

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 applied for admission. 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 admission or transfer.
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 of the Foreign Student Affairs.

Special International Education Programs

The University of Akron is 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 water supply systems. Applications for this program may be made through AID or directly to the University of Akron.

During the 1968-69 academic year, The University of Akron also served as a training center for two interns in University administration through AID.
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 1969 The University of Akron sent approximately 45 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 ninth.

**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 students to select specific courses, complete the necessary forms and pay the appropriate fees. This formal process is called registration. Students 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 Registrar’s Office. A non-refundable late Registration Fee is assessed registrants enrolling after the official Open Registration Week.

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

**Modification of Student Schedules**
A student must enter 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.

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.

**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 $11.00 per credit. The grade obtained in such an examination is re-
Credit
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 when advised and has permission of his Dean. If he passes the course with a grade of D or better on the second attempt, 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.

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.

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

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.

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

The Grading System
The following table indicates the average quality point for each letter grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points Per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

The Registrar's office mails the quarter grade reports to students through their campus mail box or to their 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 indicating a student's academic level of achievement.

This method of recording grades is explained as follows:

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

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

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.

Repeating Courses
An undergraduate student who has earned a failing grade may repeat a course once, subject to these conditions:
overall quality point average of 3.75 or higher; "magna cum laude" if his overall average is between 3.50 and 3.74; and "cum laude" if it is between 3.25 (B plus) and 3.49.

Students receiving the first two-year associate degree who have earned a quality point ratio of 3.25 or higher out of a possible 4.0 for all work taken and who have a minimum of 45 credits at The University of Akron are honored 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 of Akron Registrar at the start of his final academic year. Filing deadlines may be obtained from the office of the Registrar; and
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.

2. Earn a minimum 2.0* quality point ratio, as computed by The University of Akron:
   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.
3. Meet all degree requirements in his elected major, program, and college, and be approved for graduation by the appropriate college faculty, University Council, and the Board of Trustees.

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. The University reserves the right to make changes which alter the number of credits and/or courses required for a degree, in the event the student fails to complete his degree requirements within five calendar years from the date of his enrollment.

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 becomes operative. 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 or the student affected.

For the purpose of this 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.
4. Must spend his last year in residence (earning a minimum of 48 credit hours in the Baccalaureate degree total or 24 credit hours in the Associate degree total) at The University of Akron unless excused in writing by the Dean of his college.
5. 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 credit hours in residence which have not counted towards his first Bachelor's degree.

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

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.

Credit and Quality Point Requirements for Graduation

<table>
<thead>
<tr>
<th>College</th>
<th>Degrees Granted</th>
<th>Minimum Quarter Credits</th>
<th>Minimum Qual. Pt. Average Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Sciences Humanities</td>
<td>Bachelor of Arts</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>Bachelor of Science</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>Bachelor of Science in Labor Relations</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Medical Technology</td>
<td>192</td>
<td>2.0</td>
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<tr>
<td>Engineering</td>
<td>Bachelor of Science in Chemical Engineering</td>
<td>218</td>
<td>2.0</td>
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<tr>
<td></td>
<td>Bachelor of Science in Civil Engineering</td>
<td>219</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Electrical Engineering</td>
<td>218</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Mechanical Engineering</td>
<td>217</td>
<td>2.0</td>
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<tr>
<td>Education</td>
<td>Bachelor of Arts in Education</td>
<td>192</td>
<td>2.0*</td>
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<tr>
<td></td>
<td>Bachelor of Science in Education</td>
<td>192</td>
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</tr>
<tr>
<td>Business Administration</td>
<td>Bachelor of Science in Business Administration</td>
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<td></td>
<td>Bachelor of Science in Industrial Management</td>
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<tr>
<td></td>
<td>Bachelor of Science in Accounting</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td>College of Fine and Applied Arts</td>
<td>Bachelor of Music</td>
<td>193</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Arts</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Fine Arts</td>
<td>192</td>
<td>2.0</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>Bachelor of Science in Nursing</td>
<td>195</td>
<td>2.0</td>
</tr>
<tr>
<td>Community and Technical College</td>
<td>Associate Degree in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Associate Degree in Applied Science in:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Chemical Technology</td>
<td>99</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Commerce</td>
<td>97</td>
<td>2.0</td>
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<tr>
<td></td>
<td>Commercial Art</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Cytotecology</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Data Processing</td>
<td>97-100</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Educational Technology</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Electronic Technology</td>
<td>102</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Food Service Management</td>
<td>97</td>
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<tr>
<td></td>
<td>Industrial Technology</td>
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<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Instrumentation Technology</td>
<td>101</td>
<td>2.0</td>
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<tr>
<td></td>
<td>Law Enforcement Technology</td>
<td>98</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Mechanical Technology</td>
<td>102</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Sales and Merchandising</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Secretarial Science</td>
<td>96</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Surveying and Construction Technology</td>
<td>102</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>96-100</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Technology Degree in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Technology</td>
<td>202</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Mechanical Technology</td>
<td>202</td>
<td>2.0</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th></th>
<th>Commuting Residents of Ohio</th>
<th>Non-Commuting Residents of Ohio</th>
<th>Commuting Non-Residents of Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate fee</td>
<td>$480</td>
<td>$480</td>
<td>$1080</td>
</tr>
<tr>
<td>General Service Fee</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Books (average)</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>Food and Housing in Residence Halls</td>
<td>...</td>
<td>1050</td>
<td>1050</td>
</tr>
<tr>
<td></td>
<td>$740</td>
<td>$1790</td>
<td>$2390</td>
</tr>
</tbody>
</table>

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 fees and 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 status should consult with the Registrar, if in day classes, or with the Dean of the Evening College, if in evening classes.

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.

ADMISSION APPLICATION Fee (Undergraduate & Post Baccalaureate)—A check, money order or cash in the amount of $20 must accompany an undergraduate or post baccalaureate student's application for admission to the University.

ADMISSION APPLICATION Fee (Graduate & Law)—A check, money order or cash in the amount of $20 must accompany all applications for prospective graduate and law students.

ADMISSION APPLICATION Fee (Transient Student)—A check, money order or cash in the amount of $20 must accompany the application of a transient student for each period of enrollment.

GENERAL SERVICE Fee—All undergraduate students pay a General Service Fee of $40.00 for each quarter or session in which they enroll for 9 credits or more. All undergraduate students pay a General Service Fee of $14.00 for each quarter or session in which they enroll for 8 1/2 credits or less. Graduate and professional students pay $15 per quarter if enrolled for 9 or more credits or $5 if enrolled for 8 1/2 or less credits.

INSTRUCTIONAL Fee—For each undergraduate and post baccalaureate quarter credit, paid by both resident and non-resident students:

1 through 13 quarter credits $12.00 per quarter credit

or 13 1/2 through 16 quarter credits at $160.00 per quarter

and any additional quarter credits over 16 at $12.00 per quarter credit

Non-Resident SURCHARGE—For each undergraduate and post baccalaureate quarter credit enrolled by non-Ohio students:

1 through 14 1/2 quarter credits $13.00 per quarter credit

or 15 through 16 quarter credits at $200.00 per quarter

and any additional quarter credits over 16 at $13.00 per quarter credit

Explanation: In addition to the Instructional Fee paid by all students, nonresidents pay non-resident surcharge to make up for tax support the University receives from residents of the State of Ohio.

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 $1,950.

* Does not include special or miscellaneous fees, i.e.: music, late registration, etc.
Payment plans can be arranged with the Director of Housing.

Graduate and Professional (Law) Fees
Fee for Ohio residents per credit per quarter... $22.00
Fee for nonresidents per credit per quarter...... 28.00

Late Registration Fee
Fees are payable at the time of registration or by the mail registration deadline. An additional $15.00 is charged each student who has not completed registration and payment of fees before the closing time of registration in the session in which he is to be enrolled.

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 89-398.

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.

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

APPLIED MUSIC—For private lessons in Band or Orchestra Instruments, Organ, Piano, Harpsichord, Voice:

<table>
<thead>
<tr>
<th></th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two individual half-hour lessons per week (4 credits)</td>
<td>$100.00</td>
<td>$140.00</td>
</tr>
<tr>
<td>One individual half-hour lesson per week (2 credits)</td>
<td>50.00</td>
<td>70.00</td>
</tr>
<tr>
<td>One hour practice per week on pipe organ</td>
<td>10.00</td>
<td>10.00</td>
</tr>
</tbody>
</table>

Thesis and Binding
For candidates for advanced degrees (Payable at time of application for degree).

Binding fee, per volume .................. $ 7.00
Microfilming fee (for Ph.D.) degrees only ...... 25.00
Two volumes must be deposited in the University Library.

Graduation Fee
Each Degree .................................. $12.00
In Absentia (additional) ...................... 12.00

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

Department of Special Programs
A fee of $20.00 is charged for each Department of Special Programs course unless otherwise noted in the circular which describes the courses.

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.

Miscellaneous
One free transcript of record is furnished a student. A fee of $1.00 is charged for each additional copy.

A fee of $12.00 per credit is charged for each examination in college work not taken in course (credit by examination).

A charge of schedule fee of $3.00 per course is charged each student who, after completing registration, enrolls for an additional or substitute course or section except when such charge is made at the request of the dean having jurisdiction over the student.

In addition to other costs, a fee of $25 is charged students enrolled in course 510:402 (Student Teaching), a fee of $75.00 is charged for students enrolled in 740:322 (Home Management Residence), and $15.00 for cooperative work.

A rental fee of $4.00 per year plus a deposit of $1.00 is charged each student who engages a locker on campus. The deposit is refundable.

A towel rental fee of $4.00 and a locker rental fee of $2 ($1 refundable) per quarter are charged each student in Physical Education who uses locker room facilities in Memorial Hall.

A fee of $5.00 for each returned or NSF check.

A laboratory breakage deposit
fee (refundable) ............................ $10.00
Establish satisfactory evidence of emancipation and purpose of attending The University of Akron, such as 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:

<table>
<thead>
<tr>
<th></th>
<th>Department of Credit Courses</th>
<th>Department of Special Programs Summer Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-7 calendar days</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>8-14 calendar days</td>
<td>50%</td>
<td>25%</td>
</tr>
<tr>
<td>15-21 calendar days</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Thereafter</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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 a 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 a 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 a 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 a 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 a 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 recipi-
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 certiﬁed employees of the Akron Board of Education who is enrolled in the College of Education as a full-time student.

Akron Education Association Scholarship
This scholarship was established by the Akron Education Association for the purpose of providing awards in the amount of $75 to worthy sority women who are in good academic standing, have made a contribution to the panhellenic system and have financial need.

Akron Panhellenic Association—Polskys Awards
 Funds contributed by the Akron Panhellenic Association and Polskys for the purpose of providing awards in the amount of $75 to worthy sority women who are in good academic standing, have made a contribution to the panhellenic system and have financial need.

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 University 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 1969 and 1970 are: A & Y Railroad; Akron Coca Cola Bottling Company; Akron Equipment Company; Akron National Bank & Trust Company; Akron Standard Division of Eagle-Picher Industries, Inc.; Fred W. Albrecht Grocery Company; American Bank of Commerce; Austin Printing Company; Babcock & Wilcox Company; Bearfoot Corporation and Bearfoot Airway Corporation; Burger Iron Company; Burt Manufacturing Company; Chrysler Corporation; Columbian Carbon Company; Cotter Merchandise Storage Company; Dan­ner Press Corporation and Akron Typesetting Company; Dixie Ohio Express, Inc.; East Ohio Gas Company; Fair­lawn Supply & Concrete Company; Firestone Bank; Firestone Tire & Rubber Company; First National Bank of Akron; Flexi-Grip Division, Eaton, Yale & Towne, Inc.; General Motors Corporation; General Tire & Rubber Company; B. F. Goodrich Company, Goodyear Tire & Rubber Company; Hardware & Supply Company; Harwick Standard Chemical Company; Himey Printing Company; Kasch Roofing Company; Knight Foundation; Missey-Ferguson, Inc.; McNeil Corporation; Merrill Lynch, Pierce, Fenner & Smith, Inc.; Monsanto Company; John P. Novotny Electric Company; NRM Corpora­tion; Ohio Edison Company; M. O'Neil Company; Pepsi-Cola Bottlers of Akron, Inc.; Phillips Petroleum Company; Polsky's; PPC Industries, Inc.; A. Scholman, Inc.; Spohn Corporation; Teledyne Monarch Rubber; Union Carlsbad Corporation; Witco Chemical Company, Inc.

American Cyanamid Company Grant

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

Army ROTC Scholarships

The Department of the Army offers two outstanding ROTC cadets scholarships ranging from one to four years of financial assistance to include tuition, books, fees and incidentals, plus $50.00 per month (tax-free) for subsistence. Contact the Department of Military Science for further information.

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.

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

An award made to a full-time student who shows promise in the field of applied music and who is 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 $300 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 $540 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 Employee's Trust Scholarship
The Aristoley Steel Division of the Copperweld Steel Company provides scholarship assistance to worthy students attending The University of Akron. Preference is given to students who are Copperweld Steel Company employees or dependents of employees, retirees, or former employees who became deceased while still associated with the firm. Recipients must meet the qualifications prescribed by the University Scholarship Committee.

Columbia University Scholarship Committee.
Up to ten scholarships, subject to renewal, are awarded annually to students from minority groups who have successfully completed a program of study under the auspices of the Council on Legal Education Opportunity.

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 Darkey 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.

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. Billok 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 $200 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 Company 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 Scholarships
Awards of $400 are made annually by the Woman’s Auxiliary of the Summit County Medical Society to girls entering nursing in an Akron Hospital, $200 given the first year, $100 the second and $100 the third year, contingent on satisfactory performance and scholarship. The award is a gift if the student graduates from the Akron school of her choice. The money must be repaid to the scholarship.

Enjay Chemical Company Scholarship
A fund established by the Esso Education Foundation for the purpose of providing financial assistance to junior 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 Re-
search and Development Department in support of a graduate research and study grant 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 of $270 per year in the freshman year are made to graduates of Akron high school. 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 scholarships 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.

Frontiers Club Scholarship
These scholarships are made available by The Akron Chapter of the Frontiers Club and are granted to outstanding graduates of the Akron Public High Schools.

General Electric Company Fellowship
This fellowship is awarded to a graduate student in Polymer Science.

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 Claus, Pyle, Schomer, Burns, and De Haven Scholarship
The firm of Claus, 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.

B. F. Goodrich Company Grant
This grant will support a fellowship to a graduate student in the field of polymer science.

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 $400 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, during 1969-70, 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 1962-53 by Miss Carlotta C. Greer, Class of 1903.

M. M. Harrison Memorial Scholarship
An award in the amount of $270 per year for a male chemistry student with high scholastic average.

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

Hesselbart 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. and 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 $300 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 60 and not more than 144 credits with a minimum accumulative grade point average of 2.5. Recipients must have participated in extra-curricular 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.

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.

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 Liberma Memoriam 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 restrictions 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 meritng 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’s 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
A Scholarship given by Ellet Women’s Club to a graduate of Ellet High School wishing to attend The University of Akron. Recipients must be full time students and maintain a 2.5 average. Awards are based on financial need and scholarship achievement.

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.

Leon F. Moldavsky Scholarship
This scholarship is awarded to an outstanding student majoring in the biological sciences, who must have a 3 point average for all work taken. The student must have demonstrated high quality of citizenship, good moral character, and high aptitude and motivation in his major field.

Victor J. Montenyohl Scholarships
This scholarship fund for advanced study was established in memory of Victor J. 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 $250,000 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.

National Aeronautics Association — Akron Women's Chapter
The scholarships are offered by the Akron Women's Chapter of the National Aeronautics Association. The scholarships are to assist students who are primarily interested in studying some phase of aeronautics.

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.

Ohio State University Graduate Scholarship
A number of graduate scholarships were established by Ohio State University, one to be assigned to each of the Ohio colleges fully accredited by the North Central Association of Colleges and Secondary Schools. The scholarship entitles the student to the exemption of tuition and fees of all kinds except a matriculation fee. Selection is left to the individual colleges.

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 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.

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 amount 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. H. Simmons Memorial Scholarships
The H. H. Simmons Memorial Scholarship Fund was established in memory of President Emeritus H. H. 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 Junior High School
PTA Scholarship
Established by the Simon Perkins Junior 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
A fund established by the Traffic Club of Akron for the purpose of providing scholarship assistance to a student or students pursuing a program in Transportation.

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

Union Carbide Corporation Research Fellowship
This fellowship is awarded to a graduate student in Polymer Science.

University Board of Trustees Scholarships
Scholarships are available for applicants to the School of Law for 1969-70 academic year, and these are renewable from year to year. The faculty of the School of Law makes the selection based on the quality of the collegiate record, the LSAT 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.

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 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 credits 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.

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 to two of the Society's official publications are made to chemistry major students 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 seniors displaying scholarship in the study of the law of Corporations and Wills.

Ashton Prizes
Cash awards are given to undergraduates for excellence in oral interpretation, extemporaneous speaking, 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 senior displaying scholarship in the study of Code Pleading.

The Newton D. Becker Award for Excellence in Accounting
An award of $100 given to an outstanding accounting major as determined by the department faculty.

Brewster Award
A fund established by Mr. and Mrs. Evan B. Brewster (Margaret Zink, Class of 1925) in the amount of $120 a year to aid freshman or sophomore students who are affiliates of Lone Star and/or Phi Delta Theta and/or Kappa Kappa Gamma.

Brewster Lawbook Award
An annual award established by Mr. and Mrs. Evan B. Brewster (Margaret Zink, Class of 1925) in the sum of $125, 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 of Law Week, is given to the graduating senior who, in the judgment of the Law Faculty, has made the most satisfactory progress in his final year.

Cleveland Chapter of the Ohio Society of Certified Public Accountants Educational Award
An annual award of $500 to a senior majoring in accounting. The objective of the award is to recognize academic attainment and scholastic achievement.

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 $100 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. Folz Premedical Prize
Under the provisions of the will of the late Dr. E. B. Folz, 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, is given annually to the senior showing the greatest proficiency in design.

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

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

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 annual 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.

Lawyers Co-Operative Publishing Company and Bancroft-Whitney Company Award
An annual award of a separately bound volume from American Jurisprudence to the highest ranking student in each of the courses listed: Administrative Law, Agency, Automobiles and Highway Traffic, Bankruptcy, Bills and Notes, Constitutional Law, Contracts, Corporations, Criminal Law, Divorce and Separation, Equity, Evidence, Labor Law, Mortgages, Municipal Corporations, Pleading, Sales, Taxation, 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 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 $250, 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.

Phil 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.

Phi Sigma Alpha Sophomore Prize
The Phi Sigma Alpha Sophomore Prize of $50, to the student in the General College having the highest average for 72-96 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.

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 or high school or a college.

Nursing Student Loan Program
A loan program with eligibility requirements similar to the 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 non-profit 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.

Other Student Loan Funds
Akron Council of Parent-Teacher Associations Loan Fund
Altrusa Loan Fund
Maxwell P. Boggs Loan Fund
Homer C. Campbell Fund
Stephen Richard Chesrown Loan Fund
Katherine Claypole Loan Fund
Cuyahoga Portage Chapter D.A.R. Loan Fund
Evening College Loan Fund
Harriet Hale Loan Fund
Hermine Z. Hansen Loan Fund
Jessie and William Hyde Memorial Fund
Indian Trail Chapter of Daughters of the American Colonists Loan Fund
Lodge No. 547 Independent Order of Odd Fellows Loan Fund
Lichter Foundation Loan Fund
Litchfield-Thomas Fund
Ellen Nadolski 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 J. Shreve Loan Fund
May Steves Memorial Loan Fund
Richard J. Witner Memorial
IV.
The University of Akron

Academic Programs

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

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

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 stu-
dent. For example: The Chemistry Department has more than 108 subjects of instruction.

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 right from the start 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 another story. In addition to pinpointing the precise course involved, they 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.
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
Sales and Merchandising
Secretarial Science
Technical
Executive
Legal
International
Medical Assistant
Office Services
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

The Engineering and Science Technology Division offers a program of study leading to the Bachelor of Technology degree in either Electronic Technology or Mechanical Technology.

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 of 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 and;
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 resident 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.

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:115 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110:211 Numbers Communication</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:112 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:116 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:205 Types of Literature</td>
<td>4</td>
</tr>
<tr>
<td>110:117 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Core Program**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:118 English</td>
<td>4</td>
</tr>
<tr>
<td>254:153 Typing Principles</td>
<td>3</td>
</tr>
<tr>
<td>375:141 General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:240 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>510:410 Audio-Visual Education</td>
<td>3</td>
</tr>
<tr>
<td>202:247 Survey of Basic Economics</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:242 American Society</td>
<td>4</td>
</tr>
<tr>
<td>555:311 Red Cross First Aid</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Elective Program**

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.

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:108 Effective Speaking</td>
<td>4</td>
</tr>
<tr>
<td>510:156 Education in American Society</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>202:251</td>
<td>Work Relationships</td>
</tr>
<tr>
<td>202:253</td>
<td>Intergroup Relations**</td>
</tr>
<tr>
<td>202:254</td>
<td>The Black American***</td>
</tr>
<tr>
<td>202:294</td>
<td>Techniques of Community Work***</td>
</tr>
<tr>
<td>244:120</td>
<td>Introduction to Information Processing</td>
</tr>
<tr>
<td>244:121</td>
<td>Introduction to Information Processing II</td>
</tr>
<tr>
<td>254:125</td>
<td>Business Machines</td>
</tr>
<tr>
<td>254:240</td>
<td>Police Role in Crime and Delinquency</td>
</tr>
<tr>
<td>292:120</td>
<td>Marriage and Family Relations</td>
</tr>
<tr>
<td>740:200</td>
<td>Child Development</td>
</tr>
<tr>
<td>740:260</td>
<td>Special Education Technology*</td>
</tr>
<tr>
<td>740:100</td>
<td>Introduction to Pupil Personnel Work*</td>
</tr>
<tr>
<td>740:105</td>
<td>Seminar in Pupil Personnel*</td>
</tr>
<tr>
<td>740:120</td>
<td>Special Education in Guidance and</td>
</tr>
<tr>
<td>740:201</td>
<td>Special Education in Guidance and</td>
</tr>
</tbody>
</table>

** Required for Elementary Aide
*** Required for Counselor Aide

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## 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.

### First Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>202:118</td>
<td>English</td>
</tr>
<tr>
<td>202:131</td>
<td>Math Analysis I</td>
</tr>
<tr>
<td>375:141</td>
<td>General Psychology</td>
</tr>
<tr>
<td>222:100</td>
<td>Introduction to Law Enforcement</td>
</tr>
<tr>
<td>222:240</td>
<td>Criminal Law for Police</td>
</tr>
<tr>
<td>385:104</td>
<td>Policing in the Elementary Grades</td>
</tr>
<tr>
<td>222:244</td>
<td>Industrial Security</td>
</tr>
<tr>
<td>222:258</td>
<td>Traffic Planning Operations</td>
</tr>
<tr>
<td>222:259</td>
<td>Police Work Study</td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>222:202</td>
<td>Basic Criminalistics</td>
</tr>
<tr>
<td>202:242</td>
<td>American Society</td>
</tr>
<tr>
<td>110:</td>
<td>Physical Education</td>
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</table>

### Third Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>222:252</td>
<td>Police Community Relations</td>
</tr>
<tr>
<td>222:256</td>
<td>Criminal Investigation</td>
</tr>
<tr>
<td>222:258</td>
<td>Traffic Planning &amp; Operations</td>
</tr>
<tr>
<td>222:260</td>
<td>Introduction to Pupil Personnel Work*</td>
</tr>
<tr>
<td>385:104</td>
<td>Social Problems</td>
</tr>
</tbody>
</table>

### Recommended Electives:

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>222:244</td>
<td>Industrial Security</td>
</tr>
<tr>
<td>202:132</td>
<td>Math Analysis II</td>
</tr>
<tr>
<td>222:254</td>
<td>The Black American***</td>
</tr>
<tr>
<td>385:104</td>
<td>Social Problems</td>
</tr>
</tbody>
</table>

Total Credits 99
224: COMMERCIAL ART

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

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>202:118 English</td>
<td>4</td>
</tr>
<tr>
<td>224:248 Presentation Techniques</td>
<td>3</td>
</tr>
<tr>
<td>224:250 Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>710:125 Drawing-Design</td>
<td>5</td>
</tr>
<tr>
<td>710:126 Drawing-Design</td>
<td>5</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>16</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:120 English</td>
<td>3</td>
</tr>
<tr>
<td>224:140 Typography and Lettering</td>
<td>3</td>
</tr>
<tr>
<td>252:211 Basic Accounting</td>
<td>3</td>
</tr>
<tr>
<td>224:247 Packaging and Display Design</td>
<td>3</td>
</tr>
<tr>
<td>710:250 Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>16</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
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</tr>
</thead>
<tbody>
<tr>
<td>110:108 Effective Speaking</td>
<td>4</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>224:174 Commercial Art Studio Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>710:146 Spatial Awareness</td>
<td>2</td>
</tr>
<tr>
<td>710:147 Two Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>16</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>254:119 Business English</td>
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<td>228:121 Fundamentals of Food Preparation I</td>
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Total Credits 96
242: COMMERCE

This program provides comprehensive training in varied business activities in preparation for a middle-level management or supervisory career with a company or as a self-employed manager. The broad program includes study of finance, marketing, personnel practices, and distribution.

**First Year**

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**Second Year**

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**Suggested Electives**

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<td>252:202 Retailing and Franchising</td>
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<td>254:154 Typing Practices</td>
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<td>252:103 Principles of Advertising</td>
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<td>202:251 Work Relationships</td>
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<td>202:252 Marriage and Family</td>
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<td>256:221 Transportation Traffic Principles</td>
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<td>202:253 Intergroup Relations</td>
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Total Credits 97

244: DATA PROCESSING

This program prepares individuals for careers in electronic data processing-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.

**First Year**

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<tbody>
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**Second Year**

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**Second Quarter**

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Total Credits 97

17 or 18
252: SALES AND MERCHANDISING
This program equips graduates to fill entry level positions in distributive business areas including retailing, wholesaling, and related services. The curriculum includes advertising, distribution, merchandising, and accounting.

<table>
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<tbody>
<tr>
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<td>254:119 Business English</td>
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<tr>
<td>252:137 Design &amp; Composition in Commercial Art</td>
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<td>242:211 Basic Accounting I</td>
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<tbody>
<tr>
<td>252:103 Principles of Advertising</td>
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<td>202:120 English</td>
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<tr>
<td>242:212 Basic Accounting II</td>
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242:210 Wholesaling & Service Fundamentals                                | 3       |
252:211 Mathematics of Retail Distribution                               | 3       |
260:247 Survey of Basic Economics                                        | 5       |
|                                                                           | 16      |

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<thead>
<tr>
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<tbody>
<tr>
<td>252:202 Retailing &amp; Franchising</td>
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<td>252:212 Principles of Salesmanship</td>
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<td>244:120 Introduction to Information Processing</td>
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<td>242:243 Survey in Finance</td>
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<tbody>
<tr>
<td>252:203 Techniques of Retail Merchandising</td>
<td>3</td>
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<tr>
<td>110:108 Effective Speaking</td>
<td>4</td>
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<td>242:180 Essentials of Law</td>
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<tr>
<td>252:250 Field Study in Retailing</td>
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<td>110: Elective</td>
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</table>

Total Credits 96

It is suggested that elective work be taken in the areas of Human Relations, Sociology, and/or Psychology.

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.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
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<tbody>
<tr>
<td>254:119 Business English</td>
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<tr>
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<tr>
<td>254:125 Business Machines</td>
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<tr>
<td>254:171 Shorthand Principles</td>
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<tr>
<td>502:240 Human Relations</td>
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<tbody>
<tr>
<td>110:111 English Composition</td>
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<tr>
<td>254:121 Office Problems</td>
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<td>254:154 Typing Practices</td>
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<tr>
<td>110: Physical Education</td>
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<tr>
<td>254:172 Introduction to Shorthand &amp; Transcription</td>
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### Third Quarter
- 254:293 Business Communications ............... 3
- 242:170 Business Mathematics .................. 3
- 254:155 Typing Projects ......................... 3
- 254:173 Shorthand & Transcription ............... 4
- 110: Physical Education .......................... 1
- Elective ........................................ 3

### Second Quarter
- 242:211 Basic Accounting I ........................ 3
- 202:247 Survey of Basic Economics ............... 5
- 254:274 Advanced Dictation & Transcription I .... 4
- 254:257 Secretarial Machines ..................... 4

### First Year

#### Recommended Electives:
- 242:111 Public Relations ......................... 3
- 252:212 Principles of Sales ....................... 3
- 254:126 Advanced Business Machines ............. 4
- 244:120 Introduction to Information Processing I .... 3
- 242:101 Elements of Distribution ................ 4
- 242:104 Introduction to Business ................. 4

Total Credits ........................................ 96

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# Technical Secretarial Science

## First Year

#### First Quarter
- 254:119 Business English ........................ 3
- 254:123 Business Machines ........................ 2
- 254:153 Typing Principles ........................ 3
- 254:171 Shorthand Principles I ..................... 4
- 242:170 Business Mathematics ..................... 3

### Second Quarter
- 110:111 English Composition ...................... 4
- 110: Physical Education ........................... 1
- 254:121 Office Problems .......................... 4
- 254:154 Typing Practices .......................... 3
- 254:172 Introduction to Shorthand and Transcription .... 4

### Third Quarter
- 110:108 Effective Speaking ......................... 4
- 110: Physical Education ........................... 1
- 254:155 Typing Projects .......................... 3
- 254:173 Shorthand and Transcription ............... 4
- 254:293 Business Communications ................. 3
- Elective ........................................ 2

### Second Year

#### First Quarter
- 242:211 Basic Accounting I ........................ 3
- 254:274 Advanced Dictation and Transcription I .... 4
- 254:291 Data Communications ..................... 3
- 254:241 Records Management ..................... 2

### Recommended Electives:
- 242:101 Elements of Distribution ................. 4
- 242:111 Public Relations .......................... 3
- 252:212 Principles of Sales ....................... 3
- 254:126 Advanced Business Machines ............. 3
- 254:278 Technical Dictation and Transcription .... 4

Total Credits ........................................ 96
## Legal Secretarial Program

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<tbody>
<tr>
<td>254:274 Advanced Dictation and Transcription I</td>
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### Second Quarter

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## International Secretarial Science

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## Recommended Electives:

### Total Credits 96
### MEDICAL ASSISTANT

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

### OFFICE SERVICES TECHNOLOGY

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

**First Year**

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<td>Safety Procedures</td>
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<td>Essentials of Law</td>
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<td>256:117</td>
<td>Transportation Commercial Water</td>
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<td>256:118</td>
<td>Transportation Freight Rates and Classification</td>
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<td>256:225</td>
<td>Interstate Traffic Practices and Procedures I</td>
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<td>242:104</td>
<td>Introduction to Business</td>
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<td>Personnel Practices</td>
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<td>Transportation Traffic Practices and Procedures</td>
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<td>Interstate Traffic Practices and Procedures III</td>
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**Third Quarter**

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<td>Introduction to Business</td>
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<td>256:118</td>
<td>Transportation Freight Rates and Classification</td>
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**Fourth Quarter**

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<td>244:120</td>
<td>Introduction to Information Processing I</td>
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<td>242:111</td>
<td>Public Relations</td>
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<td>256:220</td>
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Second Quarter
256:221 Transportation Traffic Principles ....... 3
242:101 Elements of Distribution* ............ 4
110:108 Effective Speaking .................. 4
Elective ................................. 5
16

Third Quarter
256:222 Transportation Traffic Practices ....... 3
202:247 Survey of Basic Economics* ............ 5
242:180 Essentials of Law .................... 4
252:212 Principles of Sales .................... 3

Elective .................................. 5
Total Credits: 96

275: CYTOTECHNOLOGY

A cytotechnologist specializes in screening microscope slides prepared by physicians or other medical personnel. Two years of study in this program includes courses in biology, chemistry, and medical technology, followed by six months of training in an approved hospital school.

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<tr>
<td>310:121 Principles of Biology</td>
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<td>202:131 Math Analysis</td>
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Second Quarter
202:122 Technical Report Writing ............ 3
310:246 General Genetics .................... 4
310:247 Genetics Lab ........................ 1
254:181 Office Nursing Techniques I ........ 3
Elective ................................. 5
16

First Year

Second Year

First Quarter | Credits |
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<td>310:247 Genetics Lab</td>
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Electives .................................. 8
17 | |

First Year

Second Year

Third Quarter
310:324 Histology ............................ 4
242:212 Basic Accounting II ................. 3
Electives .................................. 8
15 | |

Total Credits: 98

254: 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.

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<td>284:101 Introductory Chemistry I</td>
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<td>292:121 Technical Drawing I</td>
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Second Quarter
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<td>292:151 Basic Physics: Mechanics</td>
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<td>284:102 Introductory Chemistry II</td>
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<td>254:121 Organic Principles I</td>
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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.

First Year

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<td>286:153 DC Circuits</td>
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<td>286:122 Circuit Theory</td>
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<td>286:124 Electronics II</td>
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<td>286:133 Basic Physics, Heat, Sound &amp; Light</td>
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<td>286:128 Electronic Drafting</td>
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Second Year

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**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.

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<th>Second Year</th>
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<tbody>
<tr>
<td>242:211 Basic Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>292:247 Shop Methods and Practices</td>
<td>4</td>
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<tr>
<td>286:231 Factory Planning and Materials Handling</td>
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<tbody>
<tr>
<td>202:122 Technical Report Writing</td>
<td>3</td>
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<tr>
<td>286:232 Labor Management Relations</td>
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<tbody>
<tr>
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<tr>
<td>286:153 DC Circuits</td>
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<td>202:118 English</td>
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<table>
<thead>
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<tbody>
<tr>
<td>286:151 Basic Physics; Mechanics</td>
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<tr>
<td>202:132 Math Analysis II</td>
<td>4</td>
</tr>
<tr>
<td>286:122 Circuit Theory</td>
<td>4</td>
</tr>
<tr>
<td>286:123 Electronics I</td>
<td>4</td>
</tr>
<tr>
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<table>
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<tbody>
<tr>
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<tr>
<td>202:133 Math Analysis III</td>
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</tr>
<tr>
<td>286:124 Electronics II</td>
<td>4</td>
</tr>
<tr>
<td>292:153 Basic Physics; Heat, Sound and Light</td>
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<thead>
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<tbody>
<tr>
<td>202:242 American Society</td>
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<tr>
<td>286:242 Production and Quality Control</td>
<td>6</td>
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<td>286:245 Plants and Equipment Maintenance</td>
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</table>

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.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:131 Math Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>286:153 DC Circuits</td>
<td>6</td>
</tr>
<tr>
<td>202:118 English</td>
<td>4</td>
</tr>
<tr>
<td>110: Physical Education</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>290:121 Fundamentals of Instrumentation</td>
<td>5</td>
</tr>
<tr>
<td>202:240 Human Relations</td>
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</tr>
<tr>
<td>202:242 American Society</td>
<td>4</td>
</tr>
<tr>
<td>202:234 Math Analysis IV</td>
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<table>
<thead>
<tr>
<th>Third Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>202:122 Technical Report Writing</td>
<td>3</td>
</tr>
<tr>
<td>290:230 Control Principles</td>
<td>5</td>
</tr>
<tr>
<td>202:239 Calibration and Standardization</td>
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<td>290:239 Computer Principles</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>202:247 Survey of Basic Economics</td>
<td>5</td>
</tr>
<tr>
<td>290:231 Automatic Process Control</td>
<td>4</td>
</tr>
<tr>
<td>290:241 Instrumentation Project</td>
<td>3</td>
</tr>
<tr>
<td>286:253 Servomechanisms</td>
<td>3</td>
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<td>Elective</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

| Total Credits | 101 |
292: MECHANICAL TECHNOLOGY
(An E.C.P.D. accredited Engineering Technology curriculum)

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

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>202:118 English</td>
<td>4</td>
</tr>
<tr>
<td>202:151 Math Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>202:240 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>202:121 Technical Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
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### Second Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>202:120 English</td>
<td>3</td>
</tr>
<tr>
<td>202:152 Math Analysis II</td>
<td>4</td>
</tr>
<tr>
<td>292:151 Basic Physics; Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>202:122 Technical Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
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### Third Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>292:153 Basic Physics; Heat, Sound, Light</td>
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<tr>
<td>202:133 Math Analysis III</td>
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<tr>
<td>292:125 Statics</td>
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<tr>
<td>202:123 Technical Drawing III</td>
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<td>202:122 Technical Report Writing</td>
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### First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>202:131 Math Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>202:240 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>202:121 Technical Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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### Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:234 Math Analysis IV</td>
<td>3</td>
</tr>
<tr>
<td>292:152 Basic Physics; Electricity and Magnetism</td>
<td>5</td>
</tr>
<tr>
<td>292:241 Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td>292:243 Kinematics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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### Third Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>202:247 Survey of Basic Economics</td>
<td>5</td>
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</tbody>
</table>

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.

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>202:118 English</td>
<td>4</td>
</tr>
<tr>
<td>202:131 Math Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>202:240 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>202:121 Technical Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
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### Second Quarter

<table>
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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>202:234 Math Analysis IV</td>
<td>3</td>
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<tr>
<td>292:241 Strength of Materials</td>
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<td>298:235 Material Testing Lab I</td>
<td>3</td>
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<tr>
<td>298:232 Construction Surveying</td>
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<td>110: Physical Education</td>
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<td><strong>Total Credits</strong></td>
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### Third Quarter

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>202:122 Technical Report Writing</td>
<td>3</td>
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<tr>
<td>298:234 Land Surveying</td>
<td>4</td>
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<tr>
<td>298:234 Element of Structures</td>
<td>4</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
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</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>292:338</td>
<td>Mathematics for Technical Application</td>
<td>4</td>
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<tr>
<td>294:101, 102</td>
<td>Introductory Chemistry I, II</td>
<td>8</td>
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<tr>
<td>286:351</td>
<td>Industrial Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>286:352</td>
<td>Digital Systems</td>
<td>4</td>
</tr>
<tr>
<td>286:353</td>
<td>Instrumentation and Control</td>
<td>4</td>
</tr>
<tr>
<td>286:356</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>286:410</td>
<td>Technology Project</td>
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<tr>
<td>292:310</td>
<td>Economics of Technology</td>
<td>5</td>
</tr>
<tr>
<td>222:401</td>
<td>Inspection Trips</td>
<td>1</td>
</tr>
<tr>
<td>375:141</td>
<td>General Psychology</td>
<td>5</td>
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<tr>
<td>375:160</td>
<td>Industrial Psychology</td>
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</tr>
<tr>
<td>440:342</td>
<td>Illumination</td>
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<tr>
<td>445:160</td>
<td>Computer Science I</td>
<td>3</td>
</tr>
<tr>
<td>650:346</td>
<td>Business Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>650:350</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>650:371</td>
<td>Principles of Management</td>
<td>3</td>
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**Mechanical Technology**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>292:336</td>
<td>Mathematics for Technical Application</td>
<td>4</td>
</tr>
<tr>
<td>284:101, 102</td>
<td>Introductory Chemistry I, II</td>
<td>8</td>
</tr>
<tr>
<td>286:123</td>
<td>Circuit Theory</td>
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</tr>
<tr>
<td>286:125</td>
<td>Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>286:353</td>
<td>Instrumentation and Control</td>
<td>4</td>
</tr>
<tr>
<td>286:410</td>
<td>Technology Project</td>
<td>1</td>
</tr>
<tr>
<td>292:310</td>
<td>Economics of Technology</td>
<td>5</td>
</tr>
<tr>
<td>292:346</td>
<td>Mechanical Design III</td>
<td>5</td>
</tr>
<tr>
<td>292:347</td>
<td>Production Machinery and Processes</td>
<td>5</td>
</tr>
<tr>
<td>292:401</td>
<td>Inspection Trips</td>
<td>1</td>
</tr>
<tr>
<td>375:141</td>
<td>General Psychology</td>
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<td>445:160</td>
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<tr>
<td>650:346</td>
<td>Business Statistics I</td>
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<tr>
<td>650:350</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>650:371</td>
<td>Principles of Management</td>
<td>3</td>
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</table>

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

**Technical Electives (Third Quarter)**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>298:232</td>
<td>Construction</td>
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<tr>
<td><strong>Tech. Elective</strong></td>
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<tr>
<td><strong>Total Credits</strong></td>
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<td>18</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>110:111</td>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>254:119</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>310:133</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>310:147, 148, 149</td>
<td>Anatomy and Physiology</td>
<td>3, 3, 3</td>
</tr>
<tr>
<td>315:121, 122, 123</td>
<td>Inorganic Chemistry</td>
<td>3, 3, 3</td>
</tr>
<tr>
<td>315:124</td>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>375:141</td>
<td>General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>375:151</td>
<td>Developmental Psychology</td>
<td>5</td>
</tr>
<tr>
<td>740:133</td>
<td>Nutrition Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>
Baccalaureate Degree Programs

Students wishing to earn a baccalaureate degree will find fully accredited courses offered in liberal arts, engineering, education, business, nursing and fine and applied arts. 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.
The University of Akron

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 in

110: Department of General Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:108</td>
<td>Effective Speaking</td>
<td>4</td>
</tr>
<tr>
<td>110:111-112</td>
<td>English Composition</td>
<td>8</td>
</tr>
<tr>
<td>110:115-116-117</td>
<td>Institutions in the United States</td>
<td>9</td>
</tr>
<tr>
<td>110:120-18i</td>
<td>Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>110:205</td>
<td>Types of Literature</td>
<td>4</td>
</tr>
<tr>
<td>110:211</td>
<td>Numbers Communication*</td>
<td>4</td>
</tr>
<tr>
<td>110:221-222-223-224</td>
<td>Minimum of nine credits of science</td>
<td>2</td>
</tr>
<tr>
<td>110:303-304</td>
<td>Eastern Civilization</td>
<td>6</td>
</tr>
<tr>
<td>110:317-318-319</td>
<td>Western Cultural Traditions</td>
<td>12</td>
</tr>
<tr>
<td>110:401</td>
<td>Senior Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

* This requirement may be satisfied by taking 4 credits in the Department of Mathematics.
The University's Reserve Officer Training Corps program 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 provide basic and advanced instruction in Aerospace Studies. Both Army and Air Force ROTC offer 4-year programs of instruction designed to provide male students with training in military and aerospace skills, prerequisite to commissioning as Second Lieutenants in the Army or Air Force Reserve. The Air Force ROTC also offers a commissioning program to women students. Entry requirements are similar to the male program with exception of qualifying ages of 18-27 and meeting Air Force WAF commissioning physical requirements. Women students in the ROTC program are eligible to apply for an Air Force College Scholarship. 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 program is elective. However, to qualify for enrollment, the student must meet the following requirements:

a. Character—Be of good moral character, as evidenced by record in his home community and at the institution.

b. Citizenship—Be a citizen of the United States. Certain exceptions may be made to this requirement for alien students desiring to enroll in the program. These exceptions are handled on an individual basis.

c. Age
(1) Minimum—be at least 17 (women—18) years of age for enrollment in the advanced course.
(2) Maximum—be under 28 (women—27) years of age at the time of commissioning. For scholarship students, be under 25 years of age on 30 June of the calendar year in which he will become eligible for commissioning.

d. Medically—meet minimum prescribed physical fitness requirements.

e. Academic Status—be enrolled in and attending a full-time regular course of instruction. The course of study must lead to a degree in a recognized academic field and be one that the student can pursue concurrently with his participation in the ROTC program.

f. Other requirements
(1) Be selected by the PMS or PAS
(2) Have approval of institutional authorities
(3) Execute the loyalty oath or affirmation

The four year course of instruction is divided into two parts—basic course instruction and advanced course instruction. The former is offered during the Freshman and Sophomore years and includes training in fundamental Military and Aerospace skills. The latter is offered during the Junior and Senior years to those students successfully completing the basic course or possessing the equivalency and who are selected by the PMS or PAS.

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. The six week summer camp normally occurs between the Junior and Senior years. Summer Camp for Air Force ROTC cadets is of four weeks duration.

Once a student enters the Advanced ROTC program he must complete requirements for a degree as well as the Advanced program 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 in both programs 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:

**ARMY**

Basic Program (Freshman and Sophomore) .... None
Advanced Program (Junior and Senior)
non-scholarship .......................... 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

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

Transfers between Army and Air Force ROTC programs can be accomplished on an individual basis after coordination with the appropriate Army or 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 36½ 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. Flight trainees incur an active duty obligation of not less than three consecutive years from date of completion of the Army initial flight training course.

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, will receive 36½ 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.
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, the social sciences, and the natural sciences and to pursue the following aims:

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

To 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.

To provide appropriate instruction for the General Studies program.

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

To 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—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.

Graduates of the Humanities Division have found careers in teaching, translating, writing, and editing as well as in such fields as business, medicine, and law.

II. THE SOCIAL SCIENCES DIVISION—stresses intelligent participation in community affairs through education in such fields as history, economics, geography, political science, psychology and sociology.

Graduates in the Social Sciences Division often become teachers, businessmen, public administrators, social workers and politicians. Also, they are prepared for graduate study in business, law, psychology, sociology, social work, geography, public administration and urban studies.

III. THE NATURAL SCIENCES DIVISION—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 on such subjects as biology, chemistry, geology, mathematics or physics.

A graduate of this division reaches an excellent point of departure for entering such areas of specialization as medicine or dentistry. Biology majors may go on to become parasitologists, entomologists, embryologists or botanists; chemistry majors usually continue into fields of organic, inorganic, physical or polymer chemistry; geology majors advance into such diverse specialties as petroleum, petrology, geochemistry and paleontology; physics majors may become specialists in such fields as atomic, solid state or polymer physics.

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, have completed
the departmental or divisional prerequisites 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 3 credits of physical education activities, 12 credits of applied music, 6 credits of music organizations and 9 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 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 Science; Bachelor of Science in Medical Technology. At the discretion of the Dean, students majoring in mathematics or biology may be granted the Bachelor of Arts degree if at least 26 credits of their work is in the humanities or social sciences. The 26 credits must be earned in more than one department.

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 from 36 to 96 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, the social sciences 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 chapter of Bulletin.

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

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>370:325 Latin American Politics</td>
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History

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<tr>
<td>340:490-590 Colonial Latin America</td>
<td>3</td>
</tr>
<tr>
<td>340:491-591 Latin America, Nineteenth Century</td>
<td>3</td>
</tr>
<tr>
<td>340:492-592 Republics of Latin America, Twentieth Century</td>
<td>4</td>
</tr>
</tbody>
</table>

DIVISIONS OF INSTRUCTION

310: BIOLOGY

In addition to the General Studies courses and a second year of a foreign language, Biology major 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 in biology are strongly advised to 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; 315:121-3 Principles of Chemistry, (or with permission 315:121-3 Inorganic Chemistry); 345:111 Elementary Functions.


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


340:494-594 U.S.-Latin American Relations ...... 5
340:496-596 History of Mexico ............... 5

Ecology

310:313 Fall Flora or 315 Spring Flora; 341 Invertebrate Zoology; 344 General Entomology; 411,412 Plant Physiology; 416 Mycology or 417 Phycology; 418-419 Plant Morphology; 421 Environmental Conservation; 425 Population Ecology; 427 Limnology; 436 Comparative Physiology; 458 Vertebrate Zoology.


Medical Technology

A three year program (144 credits) at The University of Akron.

310:191 Introductory Human Physiology; 228, Techniques in Biology; 307, Microbiology; 313, Fall Flora or 315, Spring Flora; 341, Invertebrate Zoology; 416, Mycology or 417, Phycology; 418, 419, Plant Morphology; 458, Vertebrate Zoology.


High School Teaching

For State Certification see "Preparation for High School Teaching," on previous page.

310:191 Introductory Human Physiology; 228, Techniques in Biology; 307, Microbiology; 313, Fall Flora or 315, Spring Flora; 341, Invertebrate Zoology; 416, Mycology or 417, Phycology; 418, 419, Plant Morphology; 458, Vertebrate Zoology.

The hospital period is completed by taking the examination of the Registry of Medical Technologists, which grants the certificate M.T. (A.S.C.P.). The University grants the B.S. in Medical Technology after receipt of evidence that the examination has been passed.


Microbiology
310:307,308,309, Microbiology; 416, Mycology; 417, Pathogenic Bacteriology; 444, Immunology; 480, Radiation Biology; 315:401, Biochemistry.


Physiology and Pre-Professional
Including pre-medical, pre-dental, pre-veterinary medical students.


Zoology
310:228, Techniques in Biology; 313, Fall Flora or 315, Spring Flora; 341, Invertebrate Zoology; 343, Parasitology or 344, General Entomology; 453,454, 455, Developmental Anatomy; 458, Vertebrate Zoology; 491,492, Human Physiology.

Advisers: D. L. Jackson, W. A. Sheppe.

At the discretion of the Dean, the Bachelor of Arts Degree may be conferred upon students who have met the General Studies requirements, completed the second year of a foreign language, and have at least 36 credits in courses approved by the Head of the Department of Biology, together with appropriate courses in the Humanities or 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; 246 General Genetics; 271 General Ecology; 272 Organic Evolution; 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 major:

The General Studies and German 353:201, 202, 203.


Mathematics: Must complete 345:225.

Physics 365:201, 202, 203.

320: 321: 322: CLASSICS

Requirements for a major:

The General Studies. At least 36 credits in the department, including: 320:101, 102, 103 Comparative Literature; 329:313, 314, 315 Classical Archaeology.

325: ECONOMICS

Requirements for 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 325:245-246-247; 325:400; 325:410.

Requirements for a major in Labor Economics:

1. The General Studies.
2. At least 45 credits in the department including: 325:245-246-247; 325:330 and two of the following: 325:431; 325:432; 325:333.
4. At least 12 credits in Upper College Sociology, History, Psychology, Geography or Political Science.

330: ENGLISH

Requirements for a major:

The General Studies and the second year of a foreign language. At least 48 credits in the Department, including 330:240, 246, 245-266-267. Of the Journalism courses, only six credits (selected from 331:201, 203, 264 or 206) may be included in the required 48 credits.

335: GEOGRAPHY

Requirements for a major:

The General Studies. The second year of a foreign language. At least 39 credits in Geography, including 335:210, 220, 230, 240, 380, 481, 484. At least one course from the following: 335:350, 353, 354, 356, 358, 360, 361, 362, or 336. Successful completion of one of the following options:

- Physical Geography—any three of the following: 335:312, 314, 415, 418.
- Economic Geography—any three of the following: 335:324, 326, 422, 423.
- Urban Geography—any three of the following: 335:336, 433, 435, 438.
Cartography—any three of the following: 335:346, 444, 447, 448.

337: GEOLOGY
Requirements for a major:
The General Studies and the second year of a foreign language. At least 52 credits in Geology, including 337:101, 102, 210, 215, 216, 217, 260, 313, 413, 417, 418.

340: HISTORY
Requirements for a major:
The General Studies and the second year of a foreign language. At least 36 credits in the department, including courses 340:201, 202, 203, 207, 208, 209 or their equivalents, and 499.

345: MATHEMATICS
Requirements for a major:
The General Studies and the second year of French, German or Russian.
The courses 345:221, 222, 223, 224, 225, 311, 312, 413, 421, 422, 423 and a minimum of 15 additional credits of 400-level courses in the department.
The courses 345:101, 102, 103, 111 and 110:111 do not meet major requirements.

347: STATISTICS
Requirements for a major:
The General Studies and the second year of French, German or Russian.
The courses 345:221, 222, 223, 224, 225, 311, 421, 422, 423; 347:490, 451, 452, 453 and a minimum of 9 additional credits of 400-level courses in the department.
The courses 110:111 and 345:101, 102, 103, 111 and 347:200, 251, 252 do not meet major requirements.

352:, 353:, 355:, 357:, 358:
MODERN LANGUAGES
Requirements for a major:
1. The General Studies.
2. Completion of 36 credits above the second year (203) 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 major:
The General Studies and the second year of a foreign language. At least 44 credits in the department, to include 360:120, 170, 211, 212, 213, 480, 488, 489 = 28. 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 the B.S. degree:
1. The General Studies and the second year of a foreign language.

Requirements for the B.A. degree:
1. The General Studies and the second year of a foreign language.
2. Physics courses: A minimum of 36 credits. Included should be a one-year introductory course sequence (365:101-102-103 or, preferably, 201-202-203), 405-406-407, 410, and 411-412-413.

370: POLITICAL SCIENCE
Requirements for a major:
The General Studies and the second year of a foreign language. At least 45 credits in the Depart-
ment, including 370:100, 200, 303, 310, 461, 395, plus one 400-level course.

375: PSYCHOLOGY

Requirements for a major:
The General Studies and the second year of a foreign language. At least 45 credits in the department, including 375:141, 145, 147, 315, 407, 412, 430.

385: SOCIOLOGY

Requirements for a major:
The General Studies and the second year of a foreign language. At least 45 credits in the department, including:

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>385:100 Introduction to Sociology .......... 5</td>
</tr>
<tr>
<td>385:301,302,303 Methods of Social Research ... 9</td>
</tr>
<tr>
<td>385:414 History of Social Thought .......... 4</td>
</tr>
<tr>
<td>385:415 Contemporary Sociological Theory ... 4</td>
</tr>
</tbody>
</table>

Total 22

Additional courses in Sociology ............... 23

Total 45

The credits beyond the 22 of required courses are elective for all majors. All students, including those desiring an emphasis in Social Welfare, Anthropology, Corrections, and Urbanization are counseled by the department into the appropriate sequence of courses to complete the major, plus the 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 9 credits in each of any five of the following: the Classics, English, French, German, Greek, Italian, Latin, Philosophy, Russian and Spanish.

2. At least 9 credits in the Department of History.

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

1. The General Studies.

2. At least 35 credits from one of the following disciplines: Biology, Chemistry, Geology, Mathematics and/or Statistics, Physics or Polymer Science.

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 Numbers Communication and Finite Mathematics cannot count as part of the above 83 credits.

A foreign language is strongly recommended.

Social Sciences Division Major
The Social Sciences Division consists of the Departments of Economics, Geography-Geology, History, Political Science, Psychology, Sociology and Urban Studies. The divisional major must include the following, in addition to the General Studies and the second year of a foreign language:

1. At least 82 credits in the division.

2. At least 27 credits and not more than 32 credits in each of two of the six departments. No credits in excess of 32 in any department will be accepted unless the student meets the major requirements of such department for graduation.

3. At least 14 credits in each of two other departments, or 28 credits in one other department.

4. At least 36 credits of divisional courses on the Upper College level.

5. At least 36 credits outside the division.

6. In some instances, passage of a general final examination in the second quarter of the senior year.
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.

The "heart" of the Engineering College is its five-year cooperative program which was begun in 1914, the same year that the college itself was established. This 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 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 student is employed in industry during the Fall quarter of the third or Pre-Junior year. During the Winter quarter the student attends class. The schedule of alternation between quarters of classroom studies and industrial co-op employment continues during the Pre-Junior and Junior years. The complete schedule for the five-year course is shown in the table of "Engineering Schedule."

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 judgment by coping with the everyday problems of the industrial world. The employer of cooperative students has the opportunity to select and train students whose abilities and aptitudes can be adapted to the needs of his technical staff requirements.

While students are at work, they are required to obey all rules and regulations prescribed by the employer. In addition, they are subject to all current labor laws and conditions.

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

The Engineering Schedule

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
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</tr>
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<tbody>
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<tr>
<td>Pre-Junior</td>
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<tr>
<td>Junior</td>
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<td>Senior</td>
<td>School</td>
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Requirements for Admission
In addition to the general requirements for admission to the University, students applying for admission in Engineering must present the following secondary school credits:

- Algebra 1½ units
- Plane Geometry 1 unit
Solid Geometry or Trigonometry .5 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 usually 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 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. Successful completion of all the required courses listed in the schedule.
3. Completion of required cooperative work periods.
4. 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 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, dyes, stuffs 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.

SCHEDULE OF REQUIRED COURSES*
(The following listing gives the preferred sequence of courses but modifications are possible with approval of the academic adviser.)

Freshman Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>110:111 English Composition</td>
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<tr>
<td>110: Physical Education</td>
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<tr>
<td>315:126 Inorganic Chemistry</td>
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<tr>
<td>345:221 Analytic Geometry Calculus I</td>
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<tr>
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Winter Quarter

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<tr>
<td>110:112 English Composition</td>
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<td>345:222 Analytic Geometry Calculus II</td>
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<td>460:125 Engineering Graphics I</td>
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Spring Quarter

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<tr>
<td>110: Physical Education</td>
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<td>315:128 Inorganic Chemistry</td>
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<td>110:205 Types of Literature</td>
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<td>345:223 Analytic Geometry Calculus III</td>
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Summer I

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Summer II

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Sophomore Year

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<td>345:224 Analytic Geometry Calculus IV</td>
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<td>365:201 Elementary Classical Physics I</td>
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<tr>
<td>420:200 Process Calculations I</td>
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Winter Quarter

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<td>315:314 Physical Chemistry</td>
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* Students not choosing ROTC may select 9 credits in electives with approval of their academic adviser.


### Pre-Junior Year

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<tr>
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<td>430:305 Materials Science</td>
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<tr>
<td></td>
<td>420:310 Chemical Process industries</td>
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<tr>
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<td>430:304 Mechanics I</td>
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<td>440:331 Circuits Fundamentals</td>
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<td>420:443 Plant Trip</td>
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<td>Spring Quarter</td>
<td>410:302 Cooperative Work Period II</td>
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<td>110:317 Western Cultural Traditions</td>
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### Fall Quarter Credits

- 365:301 Modern Physics .................................. 4
- 420:321 Transport Phenomena I .................................. 4
- 420:425 Chemical Engineering Thermodynamics ................. 3
- 440:368 Electronic Fundamentals .................................. 3

**Winter Quarter Credits**

- 410:403 Cooperative Work Period III ......................... 0

**Spring Quarter Credits**

- 110:319 Western Cultural Traditions .......................... 4
- 325:244 Economics** ......................................... 4
- 420:322 Transport Phenomena II ................................. 4
- 420:426 Chemical Engineering Thermodynamics II ............. 2
- 440:381 Electrical Machinery Fundamentals ................... 3

**Summer I Credits**

- 410:404 Cooperative Work Period IV .......................... 0

**Fall Quarter Credits**

- 445:220 Analog Computers ...................................... 2
- 420:415 Unit Operations Lab I .................................. 2
- 420:423 Transport Phenomena III .............................. 4
- 420:440 Process Economics ...................................... 3

**Winter Quarter Credits**

- 420:416 Unit Operations Lab II ................................ 2
- 420:430 Reaction Kinetics ...................................... 4
- 420:435 Process Control ........................................ 3
- 420:441 Plant Design I ........................................ 3
- Elective .......................................................... 2

**Spring Quarter Credits**

- 110:303 or 110:304 Eastern Civilizations .................... 3
- 110:401 Senior Seminar .......................................... 2
- 420:417 Unit Operations Lab III ................................ 2
- 420:442 Plant Design II ......................................... 2
- Elective .......................................................... 3

Total Credits 217

**Notes:**

**Students in special cases may substitute 325:244 Survey of Economic Analysis upon permission of their academic adviser.**

## 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 University 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 re-
sources 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.

**SCHEDULE OF REQUIRED COURSES***

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Fall Quarter</th>
<th>Credits</th>
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<td>365:102 Physics</td>
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<td>460:125 Graphics</td>
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<tr>
<th>Sophomore Year</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>445:360 Computer Science I</td>
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<td>430:301 Engineering Mechanics I</td>
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<tr>
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| Winter Quarter | | |
| 110:318 Western Culture | 4 |  |
| 315:111 Chemistry I | 3 |  |
| 345:225 Differential Equations | 5 |  |
| 430:302 Engineering Mechanics II | 4 |  |
| ROTC | 1.5 |  |
| **Total** | **17.5** |  |

| Spring Quarter | | |
| 110:319 Western Culture | 4 |  |
| 315:112 Chemistry II | 3 |  |
| 430:303 Engineering Mechanics III | 4 |  |
| 420:305 Materials Science | 3 |  |

| ROTC | 1.5 | 15.5 |
| **Total** | **15.5** |  |

<table>
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<th>Pre-Junior Year</th>
<th>Fall Quarter</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
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<td><strong>Total</strong></td>
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| Winter Quarter | | |
| 430:360 Theory of Structures I | 4 |  |
| 430:351 Transportation Engineering I | 4 |  |
| 460:300 Thermodynamics | 3 |  |
| 460:310 Fluid Mechanics | 3 |  |
| **Total** | **16** |  |

| Spring Quarter | | |
| 410:302 Co-op II | 0 |  |
| **Total** | **14** |  |

| Summer | | |
| 430:307 Theory of Structures II | 4 |  |
| 430:332 Surveying II | 4 |  |
| 430:352 Transportation Engineering II | 4 |  |
| Economics Elective | 4 |  |
| **Total** | **16** |  |

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<thead>
<tr>
<th>Junior Year</th>
<th>Fall Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>110:303 Eastern Civilizations I</td>
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<td>337:101 Physical Geology</td>
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<td>430:321 Environmental Engineering I</td>
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| Winter Quarter | | |
| 410:403 Co-op III | 0 |  |
| **Total** | **15** |  |

| Spring Quarter | | |
| 345: Math Elective | 3 |  |
| 430:322 Environmental Engineering II | 4 |  |
| 430:402 Steel Design II | 3 |  |
| Economics Elective | 4 |  |
| **Total** | **16** |  |

| Summer | | |
| 430:341 Water Resources Engineering I | 3 |  |
| 430:411 Soil Mechanics | 4 |  |
| **Total** | **17** |  |

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<tr>
<th>Senior Year</th>
<th>Fall Quarter</th>
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<tbody>
<tr>
<td>430:403 Reinforced Concrete Design I</td>
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<tr>
<td>430:342 Water Resources Engineering II</td>
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| Winter Quarter | | |
| 450:404 Reinforced Concrete Design II | 3 |  |
| 430:412 Foundations | 4 |  |
| **Electives** | 6 |  |
| **Total** | **13** |  |
**ELECTRICAL ENGINEERING**

The many branches of electrical engineering include production and distribution of electrical energy; research, development and manufacture of varied electrical and electronic products; design, installation and operation of communication systems; instrumentation and process control; automation of production; instrumentation, tracking, telemetry and data gathering and evaluation relating to air and space craft; design of modern lighting; cooperation in such fields as nuclear physics, electro-chemistry, metallurgy, bio-chemistry and medicine.

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 merchandising, production control, warehouse control, banks and the stock exchange.

The wide use of electrical means for measurements and controls has resulted in the need for electrical engineers in all types of industries besides those of electrical manufacture, utilities and communications.

**SCHEDULE OF REQUIRED COURSES**

(TThe order in which courses are taken may be varied with permission of the Department Head or his representative.)

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>110: Physical Education</td>
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<td>315:126 Chemistry I</td>
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<tbody>
<tr>
<td>110:122 English Composition II</td>
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<td>445:160 Computer Science I</td>
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**Freshman Year**

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**Sophomore Year**

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<thead>
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<td>345:225 Differential Equations</td>
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**Spring Quarter**

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<th>Credits</th>
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<tr>
<td>440:234 Circuits II</td>
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<table>
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<td>440:351 Fields I</td>
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**Pre-Junior Year**

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</table>

**Winter Quarter**

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>13</td>
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<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>410:302 Co-op</td>
<td>0</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Summer</th>
<th>Credits</th>
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<tbody>
<tr>
<td>325:244 Economics</td>
<td>4</td>
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<tr>
<td>430:305 Mechanics II</td>
<td>4</td>
</tr>
<tr>
<td>445:220 Analog Computers</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
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</tbody>
</table>

* Students not choosing ROTC may select 9 credits in electives with approval of their academic adviser.

**Elective credits will generally be taken to supplement the student’s major interest in Civil Engineering. An elective schedule must have departmental approval, by the end of the Junior year.
Fall Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>440:336 Circuits IV</td>
<td>3</td>
</tr>
<tr>
<td>440:341 Measurements II</td>
<td>3</td>
</tr>
<tr>
<td>440:353 Machines I</td>
<td>4</td>
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<tr>
<td>440:366 Electronics II</td>
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Winter Quarter

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>410:403 Co-op</td>
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Spring Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>440:354 Machines II</td>
<td>4</td>
</tr>
<tr>
<td>440:371 Controls I</td>
<td>3</td>
</tr>
<tr>
<td>460:300 Thermodynamics</td>
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<td>*Electives</td>
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Summer

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>410:404 Co-op</td>
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Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:317 Western Culture I</td>
<td>4</td>
</tr>
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</table>

440:359 Transmission Lines     | 4       |
**Electives                   | 10      |

Winter Quarter

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>110:318 Western Culture II</td>
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<td>**Electives</td>
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Spring Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>110:319 Western Culture III</td>
<td>4</td>
</tr>
<tr>
<td>110:401 Senior Seminar</td>
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<tr>
<td>**Electives</td>
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</tbody>
</table>

**Total Credits 217**

*Students not choosing ROTC may select 9 credits of electives with approval of their academic adviser.

**Electives shall include 35 credits of EE electives, 4 credits of non-EE electives, and 3 credits of math electives, all subject to departmental approval.

---

**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. It is interesting to note that the aerospace industry employs far more mechanical than aerospace engineers. The difference between the two curricula is so little, that very few universities see fit to distinguish between the two degrees.

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.

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*S For those students not choosing ROTC, 9 elective credits will be selected with the approval of their academic adviser.*
<table>
<thead>
<tr>
<th>Quarter</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>110:318</td>
<td>Western Culture</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>315:111</td>
<td>Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>345:225</td>
<td>Differential Equations</td>
<td>5</td>
</tr>
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<td></td>
<td>430:302</td>
<td>Engineering Mechanics II</td>
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<td></td>
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<td>110:319</td>
<td>Western Culture</td>
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<td>315:112</td>
<td>Chemistry II</td>
<td>3</td>
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<td></td>
<td>325:244</td>
<td>Economics</td>
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<tr>
<td></td>
<td>430:303</td>
<td>Engineering Mechanics III</td>
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<td>110:115</td>
<td>Institutions in U.S. I</td>
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<td>110:108</td>
<td>Effective Speaking</td>
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<td></td>
<td>365:301</td>
<td>Modern Physics</td>
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<td></td>
<td>460:300</td>
<td>Thermodynamics I</td>
<td>3</td>
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**Pre-Junior Year**

<table>
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<tr>
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<td>410:301</td>
<td>Co-op I</td>
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<td>Winter</td>
<td>420:305</td>
<td>Materials Science</td>
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<td>460:301</td>
<td>Thermodynamics II</td>
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<tr>
<td></td>
<td>460:310</td>
<td>Fluid Mechanics</td>
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<tr>
<td></td>
<td>460:320</td>
<td>Kinematics of Machinery</td>
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<tr>
<td></td>
<td>460:360</td>
<td>Engineering Analysis I</td>
<td>3</td>
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<td>Spring</td>
<td>410:302</td>
<td>Co-op II</td>
<td>0</td>
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<tr>
<td>Summer</td>
<td>110:304</td>
<td>Eastern Civilizations</td>
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<td>110:116</td>
<td>Institutions in U.S. II</td>
<td>3</td>
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<td>460:302</td>
<td>Thermodynamics III</td>
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<td>460:440</td>
<td>Automatic Control I</td>
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**Junior Year**

<table>
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<td>440:331</td>
<td>Circuit Fundamentals</td>
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<td></td>
<td>460:325</td>
<td>Vibrations</td>
<td>3</td>
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<td></td>
<td>460:335</td>
<td>Analysis of Mechanical Components</td>
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<td></td>
<td>460:441</td>
<td>Automatic Controls II</td>
<td>3</td>
</tr>
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<td></td>
<td>460:361</td>
<td>Engineering Analysis II</td>
<td>3</td>
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<td><strong>Total</strong></td>
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<tr>
<td>Winter</td>
<td>410:303</td>
<td>Co-op III</td>
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<tr>
<td>Fall</td>
<td>440:381</td>
<td>Electrical Machinery Fundamentals</td>
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<td></td>
<td>460:315</td>
<td>Heat Transfer</td>
<td>4</td>
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<td></td>
<td>460:330</td>
<td>Dynamics of Machinery</td>
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<td>460:362</td>
<td>Engineering Analysis III</td>
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<td>410:304</td>
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<td>440:368</td>
<td>Electronic Fundamentals</td>
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<td>460:460</td>
<td>Mechanical Design I</td>
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<td>Winter</td>
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<td>Compressible Flow</td>
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<td>460:461</td>
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<tr>
<td>Spring</td>
<td>110:401</td>
<td>Senior Seminar</td>
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<td><strong>Total Credits</strong></td>
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</tbody>
</table>

*Of the 24 credits of electives, at least 3 credits must be in mathematics.
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 as teacher-scholars.

An understanding of the learner and the learning processes and the ability to translate these into appropriate teaching behaviors in acting and reacting with students. An appreciation of the values and feelings essential for working with young people and with colleagues and the ability to develop empathic 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, are offered. Graduate degrees include the Master of Arts and Master of Science in 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. This evaluation will take place when the student officially indicates his intention to work for certification, and periodically thereafter if deemed necessary by the faculty of the College of Education. 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. Esoprite,
                    Mr. Ferguson, Mr. Hoch,
                    Mr. Meconi, Miss Moore,
                    Mr. Noble, Mrs. Seifert,
                    Mr. Steinen, Mrs. Stoodt,
                    Mr. Williams
Secondary ........ Mr. Andreyka, Mr. Biondo,
                   Mr. Blankenship, Miss Cook,
                   Mr. Hembree, Mr. King,
                   Mrs. Lindbeck, Mr. Mavrides,
                   Mr. Ocasek, Mrs. Pfeiffer,
                   Mr. Ruebel, Mr. Wood
Home Economics ........ Mrs. Sullivan
Music .................. Mr. MacDonald, Mr. Nolin
Physical Education ..... Mr. Maluke, Mr. Evans
Special Education .. Mr. Armc, Mr. Kovacevich,
                    Mr. Myers
Speech and Theatre Arts .... Mr. Dunlap
Speech and Hearing Therapy .... Miss Hittle
Technical Education ...... Mr. Andreyka
Graduate .......... Mr. Adolph, Mr. Andreyka,
                  Mr. Doverspike, Mr. Ferguson,
                  Mr. Hayes, Mr. Rich,
                  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 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.

A physical examination is required each year of all students who are preparing for certification as teachers.

Student Teaching
Student teaching is done in the public schools under the direction of supervising teachers and a representative of the College of Education faculty. Each student must teach all day, every day for a full quarter. When arranging his University schedule for this quarter, the student may not register for any other course.

In order to qualify for student teaching a student must maintain a 2.5 average in his teaching field. Satisfactory work also must be done in other teaching fields and in professional education to warrant recommendation for a teaching certificate.*

Recommendations for Certification
Every teacher in Ohio public schools is required to have a certificate covering the fields in which he is teaching. This certificate is issued by the State Department of Education upon recommendation of the Dean of the College of Education. The student must make out an application form which may be obtained in the office of the Dean. This form should be filled out about one month before the student plans to complete all of his requirements for teaching.

Students are expected to receive their recommendation for certification from the institution granting the degree. Students who expect to receive degrees from other institutions but who wish to qualify for certification at The University of Akron will be expected to meet all of the certification requirements of The University of Akron.

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

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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>First Quarter</strong></td>
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<tr>
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<tr>
<td>110:115 Institutions in U.S.</td>
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<tr>
<td>110: Physical Education</td>
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<tr>
<td>375:141 General Psychology</td>
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<tr>
<td>750:201 Fundamentals of Music</td>
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<tr>
<td><strong>Second Quarter</strong></td>
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</tr>
<tr>
<td>110:116 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>505:157 Human Development and Learning/or</td>
<td>4</td>
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<tr>
<td>710:211 Design</td>
<td>3</td>
</tr>
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<tr>
<td><strong>Third Quarter</strong></td>
<td></td>
</tr>
<tr>
<td>110:116 Institutions in U.S.</td>
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<tr>
<td>520:141 Handicrafts</td>
<td>3</td>
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<tr>
<td>520:262 Elementary School Music Literature and Appreciation</td>
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<tr>
<td>505:157 Human Development and Learning/or</td>
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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>First Quarter</strong></td>
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<tr>
<td>110:211 Numbers Communications</td>
<td>3</td>
</tr>
<tr>
<td>110:205 Types of Literature or/</td>
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</tr>
<tr>
<td>110:108 Effective Speaking</td>
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<tr>
<td>110: Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>335:100 World Cultural Geography</td>
<td>4</td>
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<td>510:156 Education in American Society</td>
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<td>110:205 Types of Literature or/</td>
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<tr>
<td>110:108 Effective Speaking</td>
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</tr>
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<td>110: Natural Science</td>
<td>3</td>
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<td>340:201 U.S. History or/</td>
<td>4</td>
</tr>
<tr>
<td>370:100 Government and Politics in U.S.</td>
<td>5</td>
</tr>
<tr>
<td>510:156 Education in American Society/or</td>
<td>3</td>
</tr>
<tr>
<td>520:286 Children’s Literature</td>
<td>5</td>
</tr>
<tr>
<td>ROTC</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Quarter</strong></td>
<td></td>
</tr>
<tr>
<td>110:317 Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>335: Geography Elective</td>
<td>3</td>
</tr>
<tr>
<td>520:330 *Early Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Quarter</strong></td>
<td></td>
</tr>
<tr>
<td>110:318 Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>335: Geography Elective</td>
<td>3</td>
</tr>
<tr>
<td>520:331 *Early Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Third Quarter</strong></td>
<td></td>
</tr>
<tr>
<td>110:319 Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>335: Geography Elective</td>
<td>3</td>
</tr>
<tr>
<td>520:332 *Early Elementary Education</td>
<td>3</td>
</tr>
</tbody>
</table>

* Elected by those who wish the Kindergarten-Primary Certificate.
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; 520:337, 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.

**Fourth Year**
The following courses should be distributed over the three quarters with one quarter left SOLELY FOR

**STUDENT TEACHING.**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:303</td>
<td>Eastern Civilizations</td>
</tr>
<tr>
<td>510:350</td>
<td>Tests and Measurements</td>
</tr>
<tr>
<td>110:304</td>
<td>Eastern Civilizations</td>
</tr>
<tr>
<td>510:401</td>
<td>Problems in Education</td>
</tr>
<tr>
<td>110:401</td>
<td>Senior Seminar</td>
</tr>
<tr>
<td>510:402</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>510:403</td>
<td>Student Teaching Seminar</td>
</tr>
</tbody>
</table>

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:

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

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, who submits the credit is completed, grant a temporary elementary certificate to the holder of an 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:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>565:157</td>
<td>Human Development and Learning or 375:307 Child Psychology</td>
</tr>
<tr>
<td>520:335</td>
<td>Teaching of Reading</td>
</tr>
<tr>
<td>520:336</td>
<td>Arithmetic in Elementary Grades</td>
</tr>
<tr>
<td>520:451</td>
<td>Elementary Education</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>751:</td>
<td>Music Organization</td>
</tr>
<tr>
<td>510:402</td>
<td>Student Teaching**</td>
</tr>
<tr>
<td>520:323</td>
<td>Teaching and Supervision of Music in the Primary Grades*</td>
</tr>
<tr>
<td>520:324</td>
<td>Teaching and Supervision of Music in the Elementary Grades*</td>
</tr>
<tr>
<td>750:151</td>
<td>Theory I</td>
</tr>
<tr>
<td>750:152</td>
<td>Theory II</td>
</tr>
<tr>
<td>750:153</td>
<td>Theory III</td>
</tr>
</tbody>
</table>
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 Dean of the College.

**Recommended Sequence for Secondary Education**

**First Year**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:115 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>375:141 General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>ROTC</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15-16.5</td>
</tr>
</tbody>
</table>

**Second Quarter**

| 110:112 English Composition | 4 |
| 110:116 Institutions in U.S. | 3 |
| 110: Physical Education | 1 |
| 510:156 Education in American Society | 3 |
| 565:157 Human Development and Learning/or | 4 |
| Electives (Teaching Field) | 3-5 |
| ROTC | 1.5 |
| **Total** | 13-17.5 |

**Third Quarter**

| 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 |
| **Total** | 15-17.5 |

**Fourth Year**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:205 Types of Literature/or</td>
<td>4</td>
</tr>
<tr>
<td>110:108 Effective Speaking</td>
<td>4</td>
</tr>
<tr>
<td>110: Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>Electives (Teaching Field)</td>
<td>4-8</td>
</tr>
</tbody>
</table>

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

---

**Successful completion of Musicianship Examination is a prerequisite.**

**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 Dean of the College.

**Recommended Sequence for Secondary Education**

**First Year**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:115 Institutions in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>375:141 General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>ROTC</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15-16.5</td>
</tr>
</tbody>
</table>

**Second Quarter**

| 110:112 English Composition | 4 |
| 110:116 Institutions in U.S. | 3 |
| 110: Physical Education | 1 |
| 510:156 Education in American Society | 3 |
| 565:157 Human Development and Learning/or | 4 |
| Electives (Teaching Field) | 3-5 |
| ROTC | 1.5 |
| **Total** | 15-16.5 |

**Third Quarter**

| 110:205 Types of Literature/or | 4 |
| 110:108 Effective Speaking | 4 |
| 110: Natural Science | 3 |
| Electives (Teaching Field) | 4-8 |
| ROTC | 1.5 |
| **Total** | 15-16.5 |

**Fourth Year**

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

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:317 Western Cultural Traditions</td>
<td>4</td>
</tr>
<tr>
<td>Electives (Teaching Field)</td>
<td>8-13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

**Second Quarter**

| 110:318 Western Cultural Traditions | 4 |
| Electives (Teaching Field) | 8-13 |
| **Total** | 16 |

**Third Quarter**

| 110:319 Western Cultural Traditions | 4 |
| Electives (Teaching Field) | 8-13 |
| **Total** | 16 |

---

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 concurrently or after 530:313.

Electives (Teaching Field) | 8-13

---

110:363 Eastern Civilizations | 3
| 110:364 Eastern Civilizations | 3
| 110:401 Senior Seminar | 2
Problems in Education . . . . . . . . . . . . . . 5
Student Teaching ................... 12
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 teaching field is forty-five 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Number of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Special Teaching Fields*</td>
<td>Special Teaching Fields**</td>
</tr>
<tr>
<td>Art</td>
<td>36</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>14</td>
</tr>
<tr>
<td>Bookkeeping—Basic Business</td>
<td>14</td>
</tr>
<tr>
<td>Salesmanship—Merchandising</td>
<td>23</td>
</tr>
<tr>
<td>Stenography—Typing</td>
<td>30</td>
</tr>
<tr>
<td>Typing</td>
<td>8</td>
</tr>
<tr>
<td>Business Education</td>
<td></td>
</tr>
<tr>
<td>Comprehensive</td>
<td>68</td>
</tr>
<tr>
<td>English</td>
<td>36</td>
</tr>
<tr>
<td>English Comprehensive</td>
<td>61</td>
</tr>
<tr>
<td>Health Education</td>
<td>36</td>
</tr>
<tr>
<td>Health Education and Physical Education</td>
<td>36</td>
</tr>
<tr>
<td>History and Government</td>
<td>41</td>
</tr>
<tr>
<td>Home Economics</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Number of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin</td>
<td>23</td>
</tr>
<tr>
<td>Library Science</td>
<td>24</td>
</tr>
<tr>
<td>Modern Languages</td>
<td>30</td>
</tr>
<tr>
<td>Mathematics</td>
<td>27</td>
</tr>
<tr>
<td>Music</td>
<td>36</td>
</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Biological Science</td>
<td>23</td>
</tr>
<tr>
<td>Earth Science</td>
<td>23</td>
</tr>
<tr>
<td>General Science</td>
<td>32</td>
</tr>
<tr>
<td>Physical Science</td>
<td>32</td>
</tr>
<tr>
<td>Science Comprehensive</td>
<td>68</td>
</tr>
<tr>
<td>Social Studies Comprehensive</td>
<td>68</td>
</tr>
<tr>
<td>Speech</td>
<td>27</td>
</tr>
</tbody>
</table>

* 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.

† If used as major 45 credits will be required.

Such credits (if earned) are used to satisfy the State requirement of two units of high school language as prerequisites for College study.

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
The special education certificate is valid for teaching at both the elementary and secondary level. Students preparing to teach at either level may include in their program of studies selected special education courses to gain such certification. Program options are as follows:

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: 565:157 Human Development and Learning .... 4

Required:
580:460 Development Characteristics of Slow-Learning Children .......... 5
580:461 Principles of Teaching Exceptional Children .................... 4
580:462 Methods and Materials for Teaching Slow-Learners ............. 3
580:464 Reading and Language Arts for the Slow-Learner ........................................... 3
580:465 Social Studies for the Slow-Learner ................................................................. 3
580:466 Number Concepts for the Slow-Learner ......................................................... 3
580:468 Occupational Orientation and Job Training for Exceptional Children .......... 3
     Student Teaching Modification

Special Education As A Secondary Teaching Field

The following special education courses may comprise the first or second teaching field at the secondary level. Completion of these courses in addition to the professional education courses required of secondary teachers and a modification of the student teaching requirement comprise this program of study. The additional teaching field can be any of the several recognized subject matter areas of preparation.

Prerequisite:           Credits
565:157 Human Development and Learning .... 4

Required:
580:469 Development Characteristics of Slow-Learning Children .................. 5
580:461 Principles of Teaching Exceptional Children ........................................... 4
580:462 Methods and Materials for Teaching Slow-Learner .......................... 3
520:335 Teaching of Reading .......................................................... 5
580:464 Reading and Language Arts for the Slow-Learner ............................. 3
580:465 Social Studies for the Slow-Learner ..................................................... 3
580:466 Number Concepts for the Slow-Learner ................................................. 3
580:468 Occupational Orientation and Job Training for Exceptional Children .... 3
     Student Teaching Modification

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.

*If special education is selected as the first teaching field an additional course requirement can be included in the program.
The College of Business Administration

JAMES W. DUNLAP, Ph.D., Acting 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 of Business Administration's curriculum has been designed with equal emphasis on broad basic principles as well as immediate practices. Classroom knowledge is consistently made more significant by field trips and inspection tours to witness business operations.

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

Requirements for Admission

The College of Business Administration accepts students after they have completed two years of General College work. The entrance requirements to the College are:

1. Successful completion of at least 96 credits with an inclusive grade-point average of at least 2.00 and at least a 2.00 average in all business administration and economic courses, or with permission of the Dean.
2. Successful completion of the following courses, or their equivalent:*
**SCHEDULE OF REQUIRED COURSES**

**First Year**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:115 Institutions in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>345:101 Finite Math</td>
<td>3</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>110:112 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:116 Institutions in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>345:102 Finite Math</td>
<td>3</td>
</tr>
<tr>
<td>375:141 General Psychology or 385:100 Introduction to Sociology</td>
<td>5</td>
</tr>
<tr>
<td>110: Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>110:117 Institutions in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>345:103 Finite Math</td>
<td>3</td>
</tr>
<tr>
<td>110:108 Effective Speaking</td>
<td>4</td>
</tr>
<tr>
<td>375:169 Industrial Psychology or 385:104 Social Problems</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>110:221-224 Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>325:245 Principles of Economics</td>
<td>4</td>
</tr>
<tr>
<td>620:221 Principles of Accounting</td>
<td>4</td>
</tr>
<tr>
<td>110:205 Types of Literature</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>325:246 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>620:222 Principles of Accounting</td>
<td>4</td>
</tr>
<tr>
<td>110:221-224 Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>110:221-224 Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>325:247 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>620:270 Managerial Accounting or 620:290 Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>Electives**</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

The College reserves the right to require examinations of students transferring work to validate the credits, if necessary, or properly to place the student where the more advanced courses presume a certain background of knowledge.

**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 a 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:

<table>
<thead>
<tr>
<th>Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:221-222</td>
<td>Principles of Accounting</td>
<td>8</td>
</tr>
<tr>
<td>620:270</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>620:290</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>660:300</td>
<td>Marketing Principles</td>
<td>4</td>
</tr>
<tr>
<td>640:320</td>
<td>The Legal Environment of Business</td>
<td>5</td>
</tr>
<tr>
<td>640:321</td>
<td>Business Law</td>
<td>5</td>
</tr>
<tr>
<td>640:371</td>
<td>Business Finance</td>
<td>5</td>
</tr>
<tr>
<td>650:346-347</td>
<td>Business Statistics I and II</td>
<td>6</td>
</tr>
<tr>
<td>650:371</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>650:473</td>
<td>Business Policy</td>
<td>5</td>
</tr>
<tr>
<td>325:</td>
<td>Economics (upper division)</td>
<td></td>
</tr>
</tbody>
</table>

* 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 650:362 Production Management (3 credits), which is a major requirement.

**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:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:317-318</td>
<td>Intermediate Accounting</td>
<td>10</td>
</tr>
<tr>
<td>620:355</td>
<td>Introduction to Electronic Data Processing</td>
<td></td>
</tr>
<tr>
<td>620:430</td>
<td>Taxation</td>
<td>5</td>
</tr>
<tr>
<td>620:440</td>
<td>Auditing</td>
<td>5</td>
</tr>
<tr>
<td>620:460</td>
<td>Controllership Problems</td>
<td>5</td>
</tr>
<tr>
<td>640:322</td>
<td>Business Law</td>
<td>4</td>
</tr>
</tbody>
</table>

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 courses which develop and apply the principles and techniques of economics, administration and operation which are common in all business and industrial organizations.

Programs in the Department are structured for students preparing for a variety of careers in finance. For example, finance majors may choose a career in financial management, banking, investment management, credit management, teaching or government service. The department provides courses for students majoring in liberal arts but seeking careers in business, and provides an excellent fundamental background for advanced study, law or governmental careers.

In addition to completing 325:380, Money and Banking, as the advanced Economics course, the student who majors in Finance must complete the following courses, all for five credits: Investments (640:343), Financial Intermediaries (640:338) and Problems in Finance (640:479) plus two additional Finance courses.

The degree of Bachelor of Science in Business Administration will be awarded to those 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.

In addition to 650:363 (Production Management) the student majoring in Management must take the following courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:301</td>
<td>Work System Design</td>
<td>3</td>
</tr>
<tr>
<td>650:302</td>
<td>Industrial Plants</td>
<td>3</td>
</tr>
<tr>
<td>650:305</td>
<td>Motion and Time Study</td>
<td>3</td>
</tr>
<tr>
<td>650:350</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>650:404</td>
<td>Production Planning and Control</td>
<td>3</td>
</tr>
<tr>
<td>650:405</td>
<td>Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>650:456</td>
<td>Management Problems</td>
<td>5</td>
</tr>
</tbody>
</table>

*May be taken over a span of two quarters.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:290</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>620:355</td>
<td>Introduction to Electronic Data</td>
<td>4</td>
</tr>
<tr>
<td>620:405</td>
<td>Controllership Problems</td>
<td>5</td>
</tr>
<tr>
<td>650:301</td>
<td>Work System Design</td>
<td>3</td>
</tr>
<tr>
<td>650:302</td>
<td>Industrial Plants</td>
<td>3</td>
</tr>
<tr>
<td>650:393</td>
<td>Motion and Time Study</td>
<td>3</td>
</tr>
<tr>
<td>650:350</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>650:405</td>
<td>Quality Control</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:430</td>
<td>Taxation</td>
<td>5</td>
</tr>
<tr>
<td>620:440</td>
<td>Auditing</td>
<td>5</td>
</tr>
<tr>
<td>620:454</td>
<td>Accounting Systems</td>
<td>5</td>
</tr>
<tr>
<td>640:322</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>640:318</td>
<td>Principles of Insurance</td>
<td>4</td>
</tr>
<tr>
<td>650:47</td>
<td>Advanced Statistics</td>
<td>3</td>
</tr>
<tr>
<td>650:456</td>
<td>Management Problems</td>
<td>5</td>
</tr>
<tr>
<td>650:469</td>
<td>Personnel Relations</td>
<td>3</td>
</tr>
<tr>
<td>660:370</td>
<td>Purchasing</td>
<td>4</td>
</tr>
</tbody>
</table>

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.

During his General Studies program the student who wishes to major in Marketing is required to take nine credits of behavioral sciences, either in Psychology or Sociology. 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:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Quarter Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>325-380</td>
<td>Money and Banking</td>
<td>4</td>
</tr>
<tr>
<td>325:400</td>
<td>Macro-Economics</td>
<td>4</td>
</tr>
<tr>
<td>335:220</td>
<td>Economic Geography</td>
<td>3</td>
</tr>
<tr>
<td>335:324</td>
<td>Geography of World Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>375:315</td>
<td>Social Psychology</td>
<td>4</td>
</tr>
<tr>
<td>385:330</td>
<td>Population</td>
<td>4</td>
</tr>
<tr>
<td>385:338</td>
<td>Social Change</td>
<td>4</td>
</tr>
</tbody>
</table>

The degree of Bachelor of Science in Business Administration will be awarded to those students who complete the prescribed work.
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 or divisional 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 Arts 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 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 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 major. The exact requirements for each such major will be found on the following pages in the section headed "Departments of Instruction." Some depart-
ments 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 adviser.

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 to 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.


Students interested in majoring in Drawing and Painting, Sculpture, Communications, 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.

Major in Printmaking:
710:246, 248, 252, 256, 340, 352 (A, B, C, D), 434, 440 (10 credits in major fields).

Studio electives—5 credits.
History of Art—3 courses beyond 182.

Major in Painting and Drawing:
710:246, 248, 252—choice of 1 (250, 254, 256), 340, 342, 434, 434, 440 (15 credits in major field).

Studio electives—10 credits.
History of Art—3 courses beyond 182.

Major in Sculpture:

Studio electives—5 credits.
History of Art—3 courses beyond 182.

Major in Communications Graphics:

Major in Design—Crafts:

Studio electives—5 credits.
History of Art—3 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—5 credits.
History of Art—3 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—3 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:
Chemistry 315:121-122-123, and 201-202-203.
Accounting 620:221 and 222, or 401.
Management 650:350. (The prerequisite is waived.)

750: MUSIC

Requirements for a major leading to the Bachelor of Arts degree:
The General Studies and the second year of a foreign language. At least 45 credits in the department including courses 750:151, 152, 153, 154, 155, 156, 251, 252, 253, 351, 352, 353, participation in a music organization (751 courses) for six quarters. A study of 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. Forty-eight credits in a primary area of applied music and six credits in electives (secondary area) in applied music (752 courses), twelve credits in music organizations (751 courses), participation for twelve quarters in Student Recital (750:157 & 357), sixty 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 the B.S. in Music Education (administered through the College of Education) include the following musical requirements:

Twenty-four credits in a declared primary area of applied music (752 courses), twelve credits in musical organizations (751 courses), participation in Student Recital for twelve 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

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)

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Quarter</strong></td>
<td></td>
</tr>
<tr>
<td>750:151 *Theory I</td>
<td>3</td>
</tr>
<tr>
<td>750:154 *Music Literature I</td>
<td>2</td>
</tr>
<tr>
<td>750:160 *Sight Singing I</td>
<td>2</td>
</tr>
<tr>
<td>751: *Music Organization</td>
<td>1</td>
</tr>
<tr>
<td>752: *Applied Music</td>
<td>4</td>
</tr>
<tr>
<td>750:157 *Student Recital</td>
<td>0</td>
</tr>
<tr>
<td>110:111 *English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110: *Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Freshman Year</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

| **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       |
| **Total Second Quarter**| **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      |
| **Total Third Quarter**| **16**  |

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Quarter</strong></td>
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</tr>
<tr>
<td>750:251 *Theory IV</td>
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</tr>
<tr>
<td>750:280 *Keyboard Harmony I</td>
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<tr>
<td>751: *Music Organization</td>
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<tr>
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BACHELOR OF SCIENCE IN EDUCATION
(Music Education program)
### Fine and Applied Arts

<table>
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<td>110:108 *Effective Speaking</td>
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#### Sophomore Year

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<td>750:354 Woodwind Instrument Techniques</td>
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<td>750:361 *Conducting</td>
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<td>520:323 Teaching and Supervision of Music in Primary Grades</td>
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<td>750:360 Choral Techniques</td>
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<td>750:357 *Student Recital</td>
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<td>510:350 Tests and Measurements</td>
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<tr>
<td>110:317 *Western Cultural Traditions</td>
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<td>110:305 *Eastern Civilizations</td>
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<td>510:401 Problems in Education</td>
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<table>
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<tr>
<td>752: *Applied Music</td>
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<tr>
<td>750:357 *Student Recital</td>
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<tr>
<td>750:454 *Orchestration</td>
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<tr>
<td>110:318 *Western Cultural Traditions</td>
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<td>110:304 *Eastern Civilizations</td>
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<td>510:402 Student Teaching</td>
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<table>
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<tr>
<td>751: *Music Organization</td>
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<tr>
<td>750:357 *Student Recital</td>
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<tr>
<td>110:401 *Senior Seminar</td>
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<tr>
<td>110:319 *Western Cultural Traditions</td>
<td>4</td>
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<tr>
<td>510:403 Student Teaching Seminar</td>
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<td>510:402 Student Teaching</td>
<td>6</td>
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</tbody>
</table>

Total Credits 205

* 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.
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 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.
2. 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.

** 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.”

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:
As soon as a student has decided to major in any area of Communicative Disorders (Speech Pathology, Language Disorders, or Audiology), he should consult with his adviser to identify requirements related to his goals.

There are required courses in the departments of psychology and biology.

If the student is planning to become a public school speech therapist, with a degree from the College of Fine and Applied Arts, he should consult with his adviser about the required courses.

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.
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:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>780:131</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>780:132</td>
<td>Ethical Persuasion</td>
</tr>
<tr>
<td>780:133</td>
<td>Oral Interpretation I</td>
</tr>
<tr>
<td>780:261</td>
<td>Introduction to the Theatre</td>
</tr>
<tr>
<td>780:281</td>
<td>Introduction to Radio/TV</td>
</tr>
<tr>
<td>780:497</td>
<td>Speech Seminar</td>
</tr>
<tr>
<td></td>
<td>Total Credits 19</td>
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</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>110:112</td>
<td>English Composition</td>
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<tr>
<td>110:115</td>
<td>Institutions in the U.S.</td>
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<tr>
<td></td>
<td>Total Credits 7</td>
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</table>

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110:108 Effective Speaking ................. 4
375:141 General Psychology ................ 5
   or
   Foreign Language ........................ 4
---

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
---

Third Quarter
110:265 Types of Literature ............... 4
110:221-224 *Science Requirement .......... 3
110: *Physical Education .................. 1
770:137 Voice and Articulation ............. 3
   Foreign Language ....................... 4
---

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

---

First Quarter
110:221-224 *Science Requirement .......... 3
780:131 Public Speaking .................... 3
   (or)
   780:132 Ethical Persuasion ............... 3
   780:133 Oral Interpretation I ............. 4
   780:261 Introduction to Theatre .......... 4
   Foreign Language ........................ 3
---

Second Quarter
110:221-224 *Science Requirement .......... 3
110:211 Numbers Communication ............. 4
780:265 Basic Stagecraft ................... 4
780:266 Acting ................................ 4
   Foreign Language ....................... 3
---

* 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 (5 credits each; laboratory).
### Third Quarter

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>110:221-224</td>
<td>*Science Requirement</td>
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<tr>
<td>710:121</td>
<td>Design</td>
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<tr>
<td>780:281</td>
<td>Introduction to Radio/TV</td>
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**Foreign Language or General Psychology**: 3 or 5 credits

Lower College Total: (Max.) 98 credits

### Third and Fourth Years

1. **Theatre Course**: 40 credits from the following:
   - 780:262 Stage/TV Makeup                          | 3
   - 361 Play Directing                              | 4
   - 362 Advanced Stagecraft                         | 4
   - 364 Scene Design                                | 4
   - 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
   - 469 Children's Theatre Workshop                 | 2
   - 465 Special Projects in Theatre (May be repeated for total of 6 credits)

2. **Speech**: 5 credits.
   - 234 Oral Interpretation II                     | 4
   - 497 Speech Seminar                             | 4

3. **General College**: 20 credits.
   - 110:303-4 Eastern Civilizations                | 6
   - 317-9 Western Cultural Traditions              | 12
   - 401 Senior Seminar                             | 2

4. **Electives**: 6 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             | 3
   - 432 Twentieth C. American Drama                | 4
   - 360:101 Introduction to Philosophy             | 4
   - 250 Philosophy of Art                          | 4
   - 452 Aesthetics                                 | 4
   - 375:403 Personality                            | 3
   - 450 Abnormal Psychology                        | 5
   - 710:130-1 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 credits

**Four Year Total**: 192 credits

### Communication and Mass Media

**First Year**

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<th>Description</th>
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<td>Institutions in the U.S.</td>
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<tr>
<td>110:108</td>
<td>Effective Speaking</td>
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<td>375:141</td>
<td>General Psychology</td>
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### Second Quarter

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<th>Description</th>
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<td>Institutions in the U.S.</td>
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<tr>
<td>110:117</td>
<td>Physical Education</td>
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<td>770:135</td>
<td>Introduction to Phonetics</td>
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<td>780:111</td>
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### Third Quarter

**First Quarter**

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<th>Description</th>
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<tr>
<td>780:261</td>
<td>Oral Interpretation II</td>
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<td>780:282-288</td>
<td>**Communication Media</td>
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**Foreign Language**

**Second Year**

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<td>Argumentation and Debate</td>
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<tr>
<td>780:282-288</td>
<td>**Communication Media</td>
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</table>

**Foreign Language**

### Third Quarter

1. **Speech Courses**: 25 credits from the following:
   - 780:243 Oral Interpretation II                 | 4
   - 381 Broadcasting Media                         | 4
   - 384 Speech-Communication Research I           | 4
   - 444 Group Processes                            | 3
   - 481 Persuasion and Propaganda and Propaganda Analysis | 3
   - 484 Speech-Communication Research II          | 3
   - 450 Speech Criticism                           | 4
   - 497 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.
110:303-304 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 Intergroup Relations 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

<table>
<thead>
<tr>
<th>First Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. First Quarter</td>
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<tr>
<td>Credits</td>
</tr>
<tr>
<td>110:111 English Composition 4</td>
</tr>
<tr>
<td>110:115 Institutions in the U.S. 3</td>
</tr>
<tr>
<td>110:108 Effective Speaking 1</td>
</tr>
<tr>
<td>110:121 Physical Education 1</td>
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<tr>
<td>Foreign Language (or) Cognate Elective 4</td>
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</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
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<tbody>
<tr>
<td>110:112 English Composition 4</td>
</tr>
<tr>
<td>110:116 Institutions in the U.S. 3</td>
</tr>
<tr>
<td>780:132 Ethical Persuasion 3</td>
</tr>
<tr>
<td>780:131 Public Speaking 3</td>
</tr>
<tr>
<td>Foreign Language (or) Cognate Elective 4</td>
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<table>
<thead>
<tr>
<th>Third Quarter</th>
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<tbody>
<tr>
<td>110:205 Types of Literature 4</td>
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<tr>
<td>110:117 Institutions in the U.S. 3</td>
</tr>
<tr>
<td>110:122 Physical Education 1</td>
</tr>
<tr>
<td>780:133 Oral Interpretation I 4</td>
</tr>
<tr>
<td>Foreign Language (or) Cognate Elective 4</td>
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5. Second Year

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Credits</td>
</tr>
<tr>
<td>110:221-224 *Science Requirement 3</td>
</tr>
<tr>
<td>780:245 Argumentation and Debate 3</td>
</tr>
<tr>
<td>780:261 Introduction to the Theatre 4</td>
</tr>
<tr>
<td>Foreign Language (or) Cognate Elective 3</td>
</tr>
<tr>
<td>780: Speech Elective 3</td>
</tr>
<tr>
<td>16</td>
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</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
</tr>
<tr>
<td>110:221-224 *Science Requirement 3</td>
</tr>
<tr>
<td>110:356 Numbers Communication 4</td>
</tr>
<tr>
<td>780:281 Introduction to Radio/TV 4</td>
</tr>
<tr>
<td>Foreign Language (or) Cognate Elective 3</td>
</tr>
<tr>
<td>780: Speech Elective 3</td>
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<tr>
<td>17</td>
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</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
</tr>
<tr>
<td>110:221-224 *Science Requirement 3</td>
</tr>
<tr>
<td>110:344 Public Discussion and Group Process 3</td>
</tr>
<tr>
<td>110:143 Parliamentary Procedure 2</td>
</tr>
<tr>
<td>Foreign Language (or) Cognate Elective 3</td>
</tr>
<tr>
<td>780:392 Contemporary Speeches 3</td>
</tr>
<tr>
<td>Cognate Elective 3</td>
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<td>17</td>
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</table>

Lower College Total: 99 credits

6. Third and Fourth Years

7. First Quarter

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<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>780:131 or 132 (whichever course not taken in Core) 3</td>
</tr>
<tr>
<td>141 Intercollegiate Debate 1 (repeat to 4)</td>
</tr>
<tr>
<td>145 Oral Argument 2</td>
</tr>
<tr>
<td>234 Oral Interpretation II 3</td>
</tr>
<tr>
<td>384 Speech Communication Research I 3</td>
</tr>
<tr>
<td>392 Contemporary Speeches 3</td>
</tr>
<tr>
<td>444 Group Processes &amp; Conference Leadership 3</td>
</tr>
<tr>
<td>481 Persuasion &amp; Propaganda Analysis 3</td>
</tr>
<tr>
<td>484 Speech Communication Research II 3</td>
</tr>
<tr>
<td>490 Speech Criticism 4</td>
</tr>
<tr>
<td>497 Speech Seminar (Required in Core) 4</td>
</tr>
<tr>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
</tr>
<tr>
<td>2. General College: 20 credits.</td>
</tr>
<tr>
<td>110:303-4 Eastern Civilization 6</td>
</tr>
<tr>
<td>317-9 Western Cultural Traditions 12</td>
</tr>
<tr>
<td>401 Senior Seminar 2</td>
</tr>
<tr>
<td>3. Speech and Cognate Electives: 43 credits.</td>
</tr>
<tr>
<td>a. Speech and Theatre Arts</td>
</tr>
<tr>
<td>780:265 Basic Stagecraft 4</td>
</tr>
<tr>
<td>292 Communications Media: Radio 4</td>
</tr>
<tr>
<td>283 Communications Media: Television 4</td>
</tr>
<tr>
<td>288 Communications Media: Film 4</td>
</tr>
<tr>
<td>467 Contemporary Theatre Styles 4</td>
</tr>
<tr>
<td>b. Cognate Areas:</td>
</tr>
<tr>
<td>325:245-7 Principles of Economics (per qtr.) 3</td>
</tr>
</tbody>
</table>

* See description, p. 101.
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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>110:115 Institutions in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>555:101 Applied Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>750:201 Fundamentals of Music (Ballet)</td>
<td>3</td>
</tr>
<tr>
<td>780:122 Ballet Technique</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total** 16

**Winter Quarter**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>110:115 Institutions in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>375:141 General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>555:102 Applied Physiology</td>
<td>4</td>
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</tbody>
</table>

**Fundamentals of Music (Ballet) | 3**

**Ballet Technique | 1**

**Total** 16

**Spring Quarter**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:112 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>740:133 Nutrition Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>780:122 Ballet Technique</td>
<td>1</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Total** 14 or 15

Ballet Faculty:

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

Address all inquiries to:
Dr. James F. Dunlap, Head
Department of Speech & Theatre Arts
The University of Akron
Akron, Ohio 44304

**Certification to Teach Speech and Theatre Arts—Secondary Education.**

<table>
<thead>
<tr>
<th>Courses Required of Majors and Minors</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>780:131 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>132 Ethical Persuasion</td>
<td>3</td>
</tr>
<tr>
<td>133 Oral Interpretation I</td>
<td>4</td>
</tr>
<tr>
<td>770:135 Introduction to Phonetics</td>
<td>4</td>
</tr>
<tr>
<td>136 Bases of Speech</td>
<td>4</td>
</tr>
<tr>
<td>780:261 Introduction to Theatre</td>
<td>4</td>
</tr>
<tr>
<td>245 Argumentation and Debate</td>
<td>3</td>
</tr>
<tr>
<td>281 Introduction to Radio &amp; TV</td>
<td>4</td>
</tr>
</tbody>
</table>

**780: Electives (to be selected from courses below) | 7**

**B. Required of Majors**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>780:497 Speech Seminar</td>
<td>3</td>
</tr>
<tr>
<td>489 Children’s Theatre Workshop</td>
<td>3</td>
</tr>
<tr>
<td>or 361 Play Directing</td>
<td>4</td>
</tr>
</tbody>
</table>

**7**

**C. Recommended for Majors (Elect a minimum of 8 credits):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>770:137 Voice and Articulation</td>
<td>3</td>
</tr>
<tr>
<td>780:145 Oral Argument</td>
<td>3</td>
</tr>
<tr>
<td>265 Basic Stagecraft</td>
<td>4</td>
</tr>
<tr>
<td>770:270 Introduction to Speech Disorders</td>
<td>4</td>
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</tbody>
</table>

**780:344 Public Discussion       | 3       |

**Grand Total** 59

**D. Required Education Courses:**

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

**E. Other Required Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>374:141 General Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>
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 holds membership in the National League for Nursing, Department of Baccalaureate and Higher Degree Programs.

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 and 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

Freshman Year

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:111 English Composition</td>
<td>4</td>
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<tr>
<td>345:101 Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>110:115 Institution in U.S.</td>
<td>3</td>
</tr>
<tr>
<td>315:120 General Chemistry</td>
<td>4</td>
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<tr>
<td>110: Physical Education</td>
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<tr>
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<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>110:112 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>375:141 General Psychology</td>
<td>5</td>
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<tr>
<td>110:116 Institutions in U.S.</td>
<td>3</td>
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<tr>
<td>315:130 General Chemistry</td>
<td>4</td>
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<tr>
<td>110: Physical Education</td>
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<table>
<thead>
<tr>
<th>Third Quarter</th>
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<tbody>
<tr>
<td>385:100 Introduction to Sociology</td>
<td>5</td>
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<tr>
<td>110:117 Institutions in U.S.</td>
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<tr>
<td>315:131 General Chemistry</td>
<td>4</td>
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<td>110:108 Effective Speaking</td>
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Total Credits for Freshman Year 48

Sophomore Year

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<tr>
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<tbody>
<tr>
<td>820:261 Nursing in a Social Order</td>
<td>4</td>
</tr>
<tr>
<td>110:205 Types of Literature</td>
<td>4</td>
</tr>
<tr>
<td>310:361 Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>310:307 Microbiology</td>
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Second Quarter

<table>
<thead>
<tr>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>360:170 Introduction to Logic</td>
</tr>
<tr>
<td>820:271 General Nursing</td>
</tr>
<tr>
<td>310:362 Human Anatomy and Physiology</td>
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Third Quarter

<table>
<thead>
<tr>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>375:151 Developmental Psychology</td>
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<tr>
<td>820:272 General Nursing</td>
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Total Credits for Sophomore Year 45

Junior Year

<table>
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<td>110:317 Western Cultural Traditions</td>
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<tr>
<td>820:321 Adult Nursing</td>
<td>7</td>
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<tr>
<td>820:331 Maternal-Child Nursing</td>
<td>7</td>
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Second Quarter

<table>
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</thead>
<tbody>
<tr>
<td>110:318 Western Cultural Traditions</td>
</tr>
<tr>
<td>820:322 Adult Nursing</td>
</tr>
<tr>
<td>820:332 Maternal-Child Nursing</td>
</tr>
<tr>
<td>Total</td>
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Third Quarter

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>110:319 Western Cultural Traditions</td>
</tr>
<tr>
<td>820:323 Adult Nursing</td>
</tr>
<tr>
<td>820:333 Maternal-Child Nursing</td>
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Senior Year

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<tr>
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<tr>
<td>110:303 Eastern Civilizations</td>
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<tr>
<td>820:341 Community Nursing (Psychiatric Aspects)</td>
<td>10</td>
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<tr>
<td>Elective</td>
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Second Quarter

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>110:304 Eastern Civilizations</td>
</tr>
<tr>
<td>820:451 Community Nursing (Health and Welfare Teams)</td>
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<tr>
<td>Elective</td>
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Third Quarter

<table>
<thead>
<tr>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>110:401 Senior Seminar</td>
</tr>
<tr>
<td>820:461 Issues in Nursing</td>
</tr>
<tr>
<td>820:471 Seminar in Nursing</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Total Credits for Senior Year 45

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 and Research

OBJECTIVES

The purpose of the Graduate School is to further the objectives of The University of Akron by providing a quality program of graduate education and to pursue the following aims:

To offer advanced courses in various fields of knowledge beyond the baccalaureate level.

To offer students opportunities to develop and apply research techniques and to use the resources appropriate to their graduate programs.

To contribute to the advancement of knowledge for the benefit of mankind through the efforts of its faculty and students.

The Graduate Faculty recommends students who have been nominated by the student's college faculty for the appropriate master's or doctor's degree.

HISTORY OF THE GRADUATE SCHOOL

Graduate study at The University of Akron began a few years after Buchtel College opened its doors, and the first earned Master's Degree was conferred in 1882. The College of Education awarded its first Master's Degree in 1924, and the Colleges of Engineering and Business Administration in 1959. The first earned Doctor's Degrees were also conferred in 1959. Professor Charles Bulger was appointed first Dean of Graduate Work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherrington, Jr., served as Director of Graduate Studies from 1955 to 1960 and as Dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brintnall was appointed Dean of Graduate Studies and Research in 1967, being succeeded in 1968 by Dr. Edwin L. Lively.

The Graduate School offers programs of advanced study leading to the degrees of Doctor of Philosophy in Chemistry, History, Polymer Science, Industrial Psychology, Education (Elementary, Secondary, and Guidance and Counseling), and Engineering (Chemical, Civil, Electrical and Mechanical). 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, 1971. 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, Chemical Engineering, Chemistry, Civil Engineering, Earth Science, Economics, Education, Electrical Engineering, English, French, Geography, History, International Business, 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.

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 all here 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. 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 or 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 (unless the student has 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, sub-
object 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 re-admitted for one calendar year, and then only if evidence to support reasons for expecting improved performance is submitted and found acceptable.

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)
The University of Akron

Other Fees

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
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<tr>
<td>General Service</td>
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<tr>
<td>9 or more credits per quarter</td>
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</tr>
<tr>
<td>8% or fewer credits per quarter</td>
<td>15.00</td>
</tr>
<tr>
<td>Late Registration Fee</td>
<td>15.00</td>
</tr>
<tr>
<td>Parking Permit Fee</td>
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</tr>
<tr>
<td>9 or more credits per quarter</td>
<td>20.00</td>
</tr>
<tr>
<td>8% or fewer credits per quarter</td>
<td>10.00</td>
</tr>
<tr>
<td>One Summer Session</td>
<td>10.00</td>
</tr>
<tr>
<td>Workshop participants</td>
<td>8.00</td>
</tr>
</tbody>
</table>

Graduation Fees

- Each Degree: 12.00
- In Absencia (additional): 12.00
- 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 as listed earlier.

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 up to 24 credits for the academic year, 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 also 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% percent of the total graduate credits required in any master's 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 Dean of Graduate Studies and Research.
TRANSFER
Up to 33% 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. Mimeo- graphed 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, Industrial 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.
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 Industrial Psychology, and the 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) a 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.

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

The Department of Psychology now offers a Ph.D. degree in Industrial Psychology. By September of 1971 the Ph.D. Program expects to expand to include a general Ph.D. degree with specialization in either Industrial or Experimental Psychology. This expanded program has been approved by The University of Akron Council.

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

1. ENTRANCE REQUIREMENTS
   1. Completion of M.A. Degree including 45 credits Graduate Courses.
   2. Completion of M.A. Core Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>375:601 Thesis Diss. Seminar</td>
<td>4</td>
</tr>
<tr>
<td>*375:602 Advanced Statistics I</td>
<td>4</td>
</tr>
<tr>
<td>**375:602 Advanced Statistics II</td>
<td>4</td>
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<td>375:605 Research Methodology</td>
<td>4</td>
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<td>375:606 Thesis Research</td>
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</table>

   *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.

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>375:763 Psych. Exp. Design</td>
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<tr>
<td>347:673 Experimental Design</td>
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<tr>
<td>375:640 Experimental Methods and App. I</td>
<td>4</td>
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<tr>
<td>375:710 Theories of Learning</td>
<td>4</td>
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<tr>
<td>375:612 Theories of Personality</td>
<td>4</td>
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<tr>
<td>375:517 History of Psychology</td>
<td>4</td>
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<tr>
<td>375:718 Systems of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>375:790 Dissertation Research</td>
<td>2-20</td>
</tr>
</tbody>
</table>

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 Industrial Psychology courses specified in department Ph.D. manual.

4. Completion of a minor area of study.

   The minor area consists of at least 18 credits. See Department Ph.D. 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

* Amount of credit allowed for dissertation decided by faculty at time of approval of prospectus.
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. 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. Oral Examination
For the Ph.D. candidate, the 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. 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
Research and thesis, 9 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
Research and Thesis, 9 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
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.
   b. Quantitative Methods.
   c. International Economics.
      (Less Developed Countries)
   e. Labor Economics.
3. At least 12 credits for the major concentration and 8 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
Forty-five credits of course work are required, with at least 23 on the 600 level. The program will include 330:501, 562, 619 and 697, unless previously taken. A thesis (330:699) or two thesis essays are required. Demonstration, prior to last quarter of enrollment, of reading proficiency in a foreign language appropriate to the field of study is required, except that completion of one junior or senior level 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
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, 9 credits; Linguistics, 9 credits; Culture and Civilizations, 9 credits; Advanced Language Skill, 5 credits.

II. Electives:
   Option I—18; Option II—9. With approval of the departmental graduate committee, up to 9 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.

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 de-
partment of Geography must be approved by the department prior to enrollment.

2. A thesis, carrying 6 to 9 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.

GEOLGY: EARTH SCIENCE

Requirements for a Master of Science in Earth Science:

1. The student is required to meet the graduate school requirements for admission.

2. The student must earn a minimum of 45 credits and maintain a "B" (3.00) average.

3. 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.

4. 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.

   Present and proposed courses in the Geography-Geology Department that are appropriate to the four areas include:


5. 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.

6. The student must complete, present, and orally defend his thesis (337:692) of eight credits.

7. The program of the student may include as many as eight graduate credits in, fields of other departments plus other graduate courses in the Departments of Geography and Geology as listed in the General Bulletin.

8. 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

Completion of 45 credits, including 16 credits in 600 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

Completion of 45 credits to include 345:611-612-613, 621-622-623, 9 graduate credits either in Analytical Function Theory, Mathematical Statistics, or Geometry, plus elective credits in 500-level or 600-level mathematics or statistics courses. All candidates will be required to include 345:698, and the topics discussed therein will be the basis for a paper or thesis. Upon recommendation of the department, enrollment in 345:699 for an additional 3 credits will be permitted. A comprehensive examination, taking the form suggested by the department, will be required of each candidate.
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

The following courses must be included in the graduate program; 365:601-602-603 and 651-652-653, and either 681 or 590. Courses 365:661-662-663 are strongly recommended but not required.

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, and thermodynamics.

Graduate research participation is strongly encouraged. Up to 8 credits may be earned in 365:697 upon the satisfactory completion of a graduate research project. One additional credit may, upon approval of 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 9 of the total of 45 graduate credits required. Both the thesis and course 365:697 are, however, entirely optional.

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

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 will constitute nine of the 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

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 375:325
   - Tests and Measures 375:407
   - Psychology of Learning 375:412
   - Abnormal Psychology 375:430
2. 2.75 overall grade point average; 3.00 CPA 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 Statistics I 4
   - 375:603 Advanced 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 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. Manual).

SOCIOLOGY

A minimum of 48 credits, at least 36 of which (including thesis) must be at the 600 level in Sociology. Required courses are 385:600, 601, 603,
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
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:
38 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).

II. Electives:
With the approval of the departmental graduate committee, up to 9 elective graduate 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 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
Completion of 45 credits to include 347:651, 652, 653, 661, 662, 665, 666; 3 graduate credits each in Matrix Algebra and Complex Variable; plus elective courses in either statistics, mathematics, or specific areas of application. All candidates will be required to include 345:698 and the topics discussed therein will be the basis for a paper or thesis. Upon recommendation of the department, enrollment in 345:699 for an additional 3 credits will be permitted for completion of a thesis. A comprehensive examination, taking the form suggested by the department, will be required of each candidate.

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.
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.

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.
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.


### 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:

1. At least 6 credits outside the College of Engineering as approved by the department.

2. **Coursework:** The candidate must successfully complete a minimum of 45 credits of graduate coursework as outlined below:

<table>
<thead>
<tr>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Engineering Coursework</td>
</tr>
<tr>
<td>Approved Mathematics</td>
</tr>
<tr>
<td>Approved Electives</td>
</tr>
<tr>
<td>Thesis</td>
</tr>
</tbody>
</table>

   **Total Credits 45**

   Each candidate must complete 420:620 and at least four additional courses from the following list:

   420:600 Momentum Transport I
   420:605 Energy Transport I
   420:610 Diffusional Operations
   420:615 Advanced Reaction Kinetics I

   * If 420:627 is elected, only 3 credits of mathematics need be taken.

---

#### Electrical Engineering

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering Course work</td>
<td>21</td>
</tr>
<tr>
<td>Approved Mathematics or Science</td>
<td>6</td>
</tr>
<tr>
<td>Approved Electives (Thesis Optional)</td>
<td>18</td>
</tr>
<tr>
<td>Comprehensive Exam in Lieu of Thesis</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Credits 45**

#### Mechanical Engineering

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering Course Work</td>
<td>21</td>
</tr>
<tr>
<td>Approved Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Approved Electives (Thesis Optional)</td>
<td>18</td>
</tr>
<tr>
<td>Comprehensive Exam in Lieu of Thesis</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Credits 45**

#### Civil Engineering

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering Course work</td>
<td>21</td>
</tr>
<tr>
<td>Approved Mathematics or Science</td>
<td>6</td>
</tr>
<tr>
<td>Approved Electives (Thesis Optional)</td>
<td>18</td>
</tr>
<tr>
<td>Comprehensive Exam in Lieu of Thesis</td>
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</tr>
</tbody>
</table>

**Total Credits 45**

#### Engineering

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
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<tr>
<td>Engineering Course work</td>
<td>21</td>
</tr>
<tr>
<td>Approved Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Approved Electives (Thesis Optional)</td>
<td>18</td>
</tr>
<tr>
<td>Comprehensive Exam in Lieu of Thesis</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Credits 45**

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*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 independent committees.*

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### THE COLLEGE OF EDUCATION

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 exam-
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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>510:603</td>
<td>Education and Social Trends</td>
<td>3</td>
</tr>
<tr>
<td>510:705</td>
<td>Interdisciplinary Seminar</td>
<td>4</td>
</tr>
<tr>
<td>510:700</td>
<td>Philosophies of Education</td>
<td>5</td>
</tr>
<tr>
<td>510:701</td>
<td>History of Education in American Society</td>
<td>4</td>
</tr>
<tr>
<td>565:602</td>
<td>Behavioral Bases of Education</td>
<td>4</td>
</tr>
<tr>
<td>590:603</td>
<td>Techniques of Research</td>
<td>5</td>
</tr>
<tr>
<td>590:711</td>
<td>Statistics in Education</td>
<td>4</td>
</tr>
<tr>
<td>590:899</td>
<td>Research in Education (Dissertation)</td>
<td>15-30</td>
</tr>
</tbody>
</table>

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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520:630</td>
<td>Elementary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>520:780</td>
<td>Seminar in Elementary Education</td>
<td>6-12</td>
</tr>
</tbody>
</table>

**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**

**Required:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>530:610</td>
<td>Secondary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>560:602</td>
<td>Orientation to Guidance Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduate study in subject field (9 credits of 500 level courses will be accepted) 14-21

**Electives:**

Any combination of courses to meet the minimum of 45 credits. Elective courses should be planned with the graduate adviser. This program is intended for
the student who expects to progress as a junior or senior high school teacher. The student who wants to qualify as a secondary school principal may do so by electing courses in Administration.

**ELEMENTARY SCHOOL PRINCIPAL**

Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520:630 Elementary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>570:610 Principles of Educational Administration</td>
<td>5</td>
</tr>
<tr>
<td>570:610 Principles of Educational Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>

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 9 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.

**SECONDARY SCHOOL PRINCIPAL**

Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>510:700 Philosophies of Education</td>
<td>5</td>
</tr>
<tr>
<td>560:601 Developmental Procedures in Learning</td>
<td>4</td>
</tr>
<tr>
<td>590:602 Techniques of Research</td>
<td>5</td>
</tr>
<tr>
<td>560:602 Orientation to Guidance Services</td>
<td>3</td>
</tr>
<tr>
<td>530:619 Secondary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>530:620 Secondary School Administration</td>
<td>3</td>
</tr>
<tr>
<td>570:610 Principles of Educational Supervision</td>
<td>5</td>
</tr>
<tr>
<td>570:601 Principles of Educational Administration</td>
<td>5</td>
</tr>
</tbody>
</table>

Recommended Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>570:602 Legal Basis of Education</td>
<td>3</td>
</tr>
<tr>
<td>530:721 Supervision of Instruction in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>530:780 Seminar: Secondary Education: The Junior High School</td>
<td>3</td>
</tr>
</tbody>
</table>

Suggested Electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>530:780 Seminar: Secondary Education: Occupational Education in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>570:710 Principles of Curriculum Development</td>
<td>4</td>
</tr>
<tr>
<td>Elective from inside or outside the College of Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective courses are planned with the student's adviser. This program is intended for the student who expects to progress as a principal or administrator in the secondary school.

**SUPERVISOR**

Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520:630 Elementary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>530:619 Secondary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>570:610 Principles of Educational Administration</td>
<td>5</td>
</tr>
<tr>
<td>570:602 Legal Basis of Education</td>
<td>3</td>
</tr>
<tr>
<td>570:603 Principles of School Finance</td>
<td>3</td>
</tr>
<tr>
<td>570:610 Principles of Educational Supervision</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to 9 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520:630 Elementary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>530:619 Secondary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>570:601 Principles of Educational Administration</td>
<td>5</td>
</tr>
<tr>
<td>570:602 Legal Basis of Education</td>
<td>3</td>
</tr>
<tr>
<td>570:603 Principles of School Finance</td>
<td>3</td>
</tr>
<tr>
<td>570:610 Principles of Educational Supervision</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives:

Any combination of courses to meet the minimum of 45 credits which may include up to 9 credits in pertinent electives from course offerings outside the College of Education. Elective courses should be planned with the graduate adviser.

**GUIDANCE COUNSELOR**

**COUNSELING COURSES — Master's Level**

(Required in this sequence.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>560:805 Seminar in Guidance</td>
<td>3</td>
</tr>
<tr>
<td>560:808 Techniques of Guidance</td>
<td>3</td>
</tr>
<tr>
<td>560:610 The Counseling Interview</td>
<td>3</td>
</tr>
<tr>
<td>560:612 Group Counseling</td>
<td>3</td>
</tr>
<tr>
<td>560:614 Evaluation and Diagnosis of Learning Problems</td>
<td>4</td>
</tr>
<tr>
<td>560:615 Practicum in Counseling</td>
<td>5</td>
</tr>
</tbody>
</table>

**TOTAL: 21**
**Elementary School Counseling**

Additional Courses:
- 560:606 Guidance in the Elementary School ........................................... 3
- 560:607 Patterns of Career Development ................................................. 3
- 590:713 Developmental Characteristics of Slow Learning Children ............... 5
- 385:504 The Family .................................................................................. 3
- 520:630 Elementary School Curriculum and Instruction ................................ 3

**Secondary School Counseling**

Additional Courses:
- 560:602 Orientation to Pupil Personnel Services .......................................... 3
- 560:607 Patterns of Career Development ................................................... 3
- 560:609 Informational Services ..................................................................... 3
- 385:523 Juvenile Delinquency ....................................................................... 3
- 530:519 Secondary School Curriculum ....................................................... 3

**College Counseling**

Additional Courses:
- 560:609 Informational Services ................................................................. 3
- 560:626 Student Personnel Services In Higher Education .............................. 3
- 590:711 Statistics in Education .................................................................... 4
- 375:503 Personality ...................................................................................... 3
- 385:533 Social Organizations ........................................................................ 3

**COUNSELING COURSES — Doctoral Level**

(Minimum of 28 credits from the following):
- 590:713 Advanced Educational Statistics .................................................... 4
- 560:701 Organization and Administration of Pupil Personnel Services ......... 3
- 560:702 Advanced Practicum in Counseling
  (To be taken for 3 quarters) ........................................................................ 3
- 560:708 Seminar in Guidance and Counseling
  (To be taken for 3 quarters) ........................................................................ 4
- 560:704 Seminar in Guidance Research
  (To be taken for 3 quarters) .......................................................................... 3
- 560:706 Internship in Counseling Supervision
  (To be taken for 3 quarters) .......................................................................... 3
- 560:709 Internship in Field Research ............................................................ 3

**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.

Credits
- 580:560 Developmental Characteristics of Slow Learning Children .............. 5
- 580:561 Principles of Teaching Exceptional Children .................................... 4
- 580:562 Methods and Materials for Teaching Slow Learners ......................... 3
- 580:564 Reading and Language Arts for the Slow Learner ............................. 3
- 580:565 Social Studies for the Slow Learner ................................................. 3
- 580:566 Number Concepts for the Slow Learner .......................................... 3
- 580:568 Occupational Orientation and Job Training for the Slow Learner ......... 3
- 520:630 Student Teaching Experience ............................................................ 3
- 580:567 Developmental Procedures:
  - Trainable Mentally Retarded .................................................................... 5
- 580:569 Education of Children with Learning Disorders .............................. 5
- 580:590 Clinical Teaching Practicum ............................................................. 3
- 310:548 Human Genetics .............................................................................. 3
- 560:608 Techniques of Guidance ................................................................. 3
- 385:504 The Family ...................................................................................... 3
- 760:570 Speech Therapy for Classroom Teachers ......................................... 3
- 580:563 Arts and Crafts for the Slow Learner ............................................... 3
- 510:510 Audio-Visual Education .................................................................. 3
- 580:681 Diagnostic Reading Problems ......................................................... 3
- 555:436/536 Adapted Physical Education Tasks
  for the Learning Disabled Child ................................................................. 3
- 770:476 Speech and Language Development ............................................... 3
- 770:676 Communicative Disorders of Children ............................................ 3

Total Credits: 45

**VISITING TEACHER**

The service of the Visiting Teacher includes working with individual children and their families 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:

   1. Core Requirements: ............................................................................. 14
   2. Required Courses in Field:
      - 385:585 Community Organization .................................................... 3
      - 385:673 Seminar in Social Work Methodology .................................. 4
      - 560:602 Orientation to Guidance Services ......................................... 3
      - 560:608 Techniques of Guidance ......................................................... 3
      - 560:610 The Counseling Interview ....................................................... 3
      - 560:614 Evaluation and Diagnosis of Learning Problems ..................... 4
      - 570:601 Principles of Educational Administration ................................ 5
      - 580:560 Developmental Characteristics of Slow Learning Children ....... 5

   3. 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
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

   Credits
   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

3. Related Professional Education 6-9 credits
   With approval of his adviser, each student will schedule a minimum of two courses from the following:

   Credits
   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

4. Psychological Foundations 6-12 credits
   With the approval of his Adviser, each student will schedule a minimum of two courses from among the following:

   Credits
   375:606 Individual Intelligence Testing I ........ 3
   375:607 Individual Intelligence Testing II .......... 3
   560:602 Orientation to Guidance Services .......... 3
   560:614 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

Credits
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
560:614 Evaluation and Diagnosis of Learning Problems ............ 4

Credits refers to number of quarter credits assigned to various courses.
May lead to a Masters degree of these areas: Business, Economics, Psychology or Sociology. This program has been designed to meet the needs of students 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.

**Suggested Prerequisites:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:301</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>325:249</td>
<td>Principles of Economics</td>
<td>8</td>
</tr>
<tr>
<td>325:330</td>
<td>Labor Problems</td>
<td>4</td>
</tr>
<tr>
<td>375:141</td>
<td>General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>375:315</td>
<td>Social Psychology</td>
<td>4</td>
</tr>
<tr>
<td>375:160</td>
<td>Industrial Psychology</td>
<td>5</td>
</tr>
<tr>
<td>650:371</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**I. Required Counseling Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>560:607</td>
<td>Patterns of Career Development</td>
<td>3</td>
</tr>
<tr>
<td>560:608</td>
<td>Techniques of Guidance</td>
<td>3</td>
</tr>
<tr>
<td>560:610</td>
<td>Information Services in Guidance</td>
<td>3</td>
</tr>
<tr>
<td>560:614</td>
<td>The Counseling Interview</td>
<td>3</td>
</tr>
<tr>
<td>560:615</td>
<td>Evaluation and Diagnosis of Learning Problems</td>
<td>4</td>
</tr>
<tr>
<td>560:615</td>
<td>Practicum in Counseling</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total Credits: 21**

**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.

**Management:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:663</td>
<td>Industrial Relations</td>
<td>3</td>
</tr>
<tr>
<td>650:668</td>
<td>Administrative Behavior and Methods</td>
<td>3</td>
</tr>
<tr>
<td>650:669</td>
<td>Leadership in Organization</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sociology:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>385:606</td>
<td>Sociology of Work</td>
<td>3</td>
</tr>
<tr>
<td>385:620</td>
<td>Population Theory</td>
<td>4</td>
</tr>
<tr>
<td>385:538</td>
<td>Industrial Sociology</td>
<td>4</td>
</tr>
<tr>
<td>385:535</td>
<td>Sociology of Urbanization</td>
<td>4</td>
</tr>
</tbody>
</table>

**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.

**Education:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>590:603</td>
<td>Techniques of Research</td>
<td>5</td>
</tr>
<tr>
<td>590:711</td>
<td>Statistics in Education</td>
<td>4</td>
</tr>
<tr>
<td>590:999</td>
<td>Research in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Management:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:547</td>
<td>Advanced Statistics</td>
<td>3</td>
</tr>
<tr>
<td>650:698</td>
<td>Seminar in Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sociology:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>385:600</td>
<td>Sociological Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>385:650</td>
<td>Thes in Sociology</td>
<td>2-8</td>
</tr>
</tbody>
</table>

The master's degree requires a minimum of 45 quarter hours selected in consultation with an academic adviser in the College of Education.

**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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>520:630</td>
<td>Elementary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>550:619</td>
<td>Secondary School Curriculum and Instruction</td>
<td>3</td>
</tr>
<tr>
<td>570:601</td>
<td>Principles of Educational Administration</td>
<td>5</td>
</tr>
<tr>
<td>570:602</td>
<td>Legal Basis of Education</td>
<td>3</td>
</tr>
<tr>
<td>570:603</td>
<td>Principles of School Finance</td>
<td>3</td>
</tr>
<tr>
<td>570:604</td>
<td>School and Community Relations</td>
<td>3</td>
</tr>
<tr>
<td>570:610</td>
<td>Principles of Education Supervision</td>
<td>5</td>
</tr>
<tr>
<td>570:701</td>
<td>School Building and Construction</td>
<td>3</td>
</tr>
<tr>
<td>570:703</td>
<td>Administration of Staff Personnel</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 PSYCHOLOGIST**

**Program I**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>375:141</td>
<td>General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>375:307</td>
<td>Psychology of Children and Adolescents</td>
<td>4</td>
</tr>
<tr>
<td>565:157</td>
<td>Human Development and Learning</td>
<td>4</td>
</tr>
<tr>
<td>375:405</td>
<td>Psychopathology of Children</td>
<td>4</td>
</tr>
<tr>
<td>580:461</td>
<td>Principles of Teaching Exceptional Child</td>
<td>4</td>
</tr>
</tbody>
</table>

**Program II**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>375:512</td>
<td>Psychology of Learning</td>
<td>4</td>
</tr>
<tr>
<td>375:720</td>
<td>Theories of Learning</td>
<td>4</td>
</tr>
<tr>
<td>565:701</td>
<td>Learning Processes</td>
<td>4</td>
</tr>
<tr>
<td>375:503</td>
<td>Personality</td>
<td>3</td>
</tr>
<tr>
<td>375:530</td>
<td>Abnormal Psychology</td>
<td>5</td>
</tr>
<tr>
<td>375:612</td>
<td>Theories of Personality</td>
<td>5</td>
</tr>
<tr>
<td>375:608</td>
<td>Experimental Development I</td>
<td>4</td>
</tr>
<tr>
<td>375:307</td>
<td>Psychology Tests and Measurements</td>
<td>4</td>
</tr>
<tr>
<td>375:706</td>
<td>Advanced Tests and Measurements</td>
<td>3</td>
</tr>
<tr>
<td>590:711</td>
<td>Statistics in Education</td>
<td>4</td>
</tr>
<tr>
<td>375:602</td>
<td>Advanced Psych. Statistics</td>
<td>4</td>
</tr>
<tr>
<td>375:605</td>
<td>Intelligence Testing I</td>
<td>3</td>
</tr>
<tr>
<td>375:907</td>
<td>Intelligence Testing II</td>
<td>3</td>
</tr>
<tr>
<td>376:619</td>
<td>Survey of Project. Tech.</td>
<td>3</td>
</tr>
<tr>
<td>560:615</td>
<td>Counseling Practicum</td>
<td>5</td>
</tr>
<tr>
<td>375:620</td>
<td>Practicum in Psychology</td>
<td>6</td>
</tr>
<tr>
<td>560:610</td>
<td>Counseling Interview</td>
<td>3</td>
</tr>
<tr>
<td>375:509</td>
<td>Introduction to Clinical Methods</td>
<td>3</td>
</tr>
<tr>
<td>375:613</td>
<td>Theories of Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>580:759</td>
<td>Role and Function of School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>580:760</td>
<td>Internship in School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>580:761</td>
<td>Internship in School Psychology</td>
<td>3</td>
</tr>
<tr>
<td>580:762</td>
<td>Internship in School Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Program of Specialization**

<table>
<thead>
<tr>
<th>Field of Specialization</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Science Degree</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Core Courses (14 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>510:700</td>
<td>Philosophies of Education</td>
<td>5</td>
</tr>
<tr>
<td>565:602</td>
<td>Behavioral Bases of Education</td>
<td>4</td>
</tr>
<tr>
<td>590:603</td>
<td>Techniques of Research</td>
<td>5</td>
</tr>
</tbody>
</table>

**Professional Technical Education (12 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>540:410/510</td>
<td>Postsecondary Technical Education</td>
<td>3</td>
</tr>
<tr>
<td>540:420/520</td>
<td>Laboratory Teaching Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

**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.

   - **Guidance Option A** (Must be taken in sequence)
     - 560:608 Techniques of Guidance        | 3       |
     - 560:610 The Counseling Interview—Approaches, Procedures and Evaluations | 3       |
     - 560:612 Group Counseling              | 3       |
     - 560:615 Practicum in Counseling       | 3       |

2. **Guidance Option B** (Must be taken in sequence)

   - 560:608 Techniques of Guidance        | 3       |
   - 560:614 Evaluation of Diagnosis of Learning Problems | 4       |
   - 560:607 Patterns of Career Development | 3       |
   - 560:609 Informational Services in Guidance | 3       |

3. **Curriculum and Supervision Option**

   - 570:610 Principles of Educational Supervision | 5       |
   - 570:710 Principles of Curriculum Development | 4       |
   - Elective                                     | 5       |

**Teaching Internship**

Students that enter the program without teaching experience are required to take:

- 510:690 Internship Teaching and Seminar | 4       |

**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.
THE COLLEGE OF BUSINESS ADMINISTRATION

Programs of advanced study leading to the degrees of Master of Business Administration, Master of Science in Accounting, and Master of Science in Management are offered in the College of Business Administration. Before undertaking such programs the student must show that he has:

1. Completed at an acceptable college or university within the U.S.A., the group of courses listed below or their equivalent, either as an undergraduate or a postbaccalaureate student:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:401 Survey of Accounting</td>
<td>5</td>
</tr>
<tr>
<td>325:243 Survey of Economic Analysis</td>
<td>4</td>
</tr>
<tr>
<td>650:371 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>660:300 Marketing Principles</td>
<td>4</td>
</tr>
<tr>
<td>640:371 Business Finance</td>
<td>5</td>
</tr>
<tr>
<td>650:346 Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>650:347 Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required 27

If you have not completed the above prerequisites for graduate study in The College of Business, file a Postbaccalaureate application through the Admissions Office, instead of a Graduate application through the Graduate Dean's Office. Any student with a bachelor's degree in Business Administration from an institution accredited by The American Association of Collegiate Schools of Business, should satisfy the prerequisite courses listed above. The necessary prerequisite courses for graduate work towards the Master of Science in Accounting may total up to 54 credits of undergraduate level work for those whose academic records show no courses in Economics or Business Administration.

2. Taken and submitted to the Graduate Dean's Office the Admission Test for Graduate Study in Business (ATGSB).

3. Met the general requirements for admission to the Graduate School. The major field quality point average requirement will apply to all Economics and Business Administration courses previously taken.

General requirements and regulations for the degree are listed on preceding pages. Upon admission, a student must follow one of the graduate study programs listed as follows: Accounting, Finance, International Business, Management or Marketing.

Master of Business Administration

ACCOUNTING CONCENTRATION

Functional Courses:
(Select three of the following four)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:610 Accounting Management and Control</td>
<td>5</td>
</tr>
<tr>
<td>640:674 Financial Management and Policy</td>
<td>5</td>
</tr>
<tr>
<td>650:663 Industrial Relations</td>
<td>3</td>
</tr>
<tr>
<td>660:660 Marketing Management and Policy</td>
<td>4</td>
</tr>
</tbody>
</table>

Administration Courses: (Both required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:668 Administrative Behavior and Methods</td>
<td>3</td>
</tr>
<tr>
<td>650:669 Leadership Role in Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>

General Courses: (All required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>325:601 Macro-Economic Theory (or 325:611 Micro-Economic Theory)</td>
<td>4</td>
</tr>
<tr>
<td>640:650 Administering Costs and Prices</td>
<td>5</td>
</tr>
<tr>
<td>640:655 Government and Business</td>
<td>5</td>
</tr>
<tr>
<td>650:640 Quantitative Methods in Operations Management</td>
<td>4</td>
</tr>
</tbody>
</table>

Concentration Courses in Accounting:
(All required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:637 Advanced Accounting Theory</td>
<td>5</td>
</tr>
<tr>
<td>620:698 Seminar in Accounting</td>
<td>5</td>
</tr>
<tr>
<td>Accounting electives</td>
<td>6-7</td>
</tr>
</tbody>
</table>

Total credits required 54

FINANCE CONCENTRATION

Functional Courses:
(Select three of the following four including 640:674)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>620:610 Accounting Management and Control</td>
<td>5</td>
</tr>
<tr>
<td>640:674 Financial Management and Policy</td>
<td>5</td>
</tr>
<tr>
<td>650:663 Industrial Relations</td>
<td>3</td>
</tr>
<tr>
<td>660:660 Marketing Management and Policy</td>
<td>4</td>
</tr>
</tbody>
</table>

Administration Courses: (All required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>650:668 Administrative Behavior and Methods</td>
<td>3</td>
</tr>
<tr>
<td>650:669 Leadership Role in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>650:670 Organizational Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

General Courses: (All required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>325:601 Macro-Economic Theory</td>
<td>4</td>
</tr>
<tr>
<td>640:650 Administering Costs and Prices</td>
<td>5</td>
</tr>
<tr>
<td>640:655 Government and Business</td>
<td>5</td>
</tr>
<tr>
<td>650:640 Quantitative Methods in Operations Management</td>
<td>4</td>
</tr>
</tbody>
</table>

Finance Concentration: (All required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>640:698 Seminar in Finance</td>
<td>5</td>
</tr>
<tr>
<td>Finance Electives</td>
<td>8-9</td>
</tr>
</tbody>
</table>

Total credits required 54
INTERNATIONAL BUSINESS CONCENTRATION

General Requirements:

Functional Courses: (Select 3 out of the following 4) Credits
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

Administration Courses: (Both required)
650:668 Administrative Behavior and Methods .......... 3
650:669 Leadership Role in Organizations ............. 3

General Courses: (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

Management Concentration: (All required)
650:698 Graduate Seminar in Management ............. 5
Management Electives ................................. 8-9

Total credits required 54

MARKETING CONCENTRATION

Functional Courses:
(Select three of the following four)
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

Administration Courses: (Both required)
650:668 Administrative Behavior and Methods .......... 3
653:669 Leadership Role in Organizations ............. 3

General Courses: (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

Concentration Courses in Marketing
16 credits if 660:660 was waived; including
4 credits in 660:699, Marketing Seminar.
12 credits if 660:660 was selected; including
4 credits in 660:699, Marketing Seminar.

Electives:
Additional courses to meet the minimum of
54 credits required for this degree.

Total credits required 54

Master of Science in Accounting

Functional Courses:
(Select two of the following three)
620:610 Accounting Management and Control .......... 5
640:674 Financial Management and Policy ............. 5
660:660 Marketing Management and Policy ............. 4

Administration Courses: (Both required)
650:668 Administrative Behavior and Methods .......... 3
650:669 Leadership Role in Organizations ............. 3

General Courses:
(Select one of the following three)
325:611 Micro-Economic Theory ......................... 4
325:601 Macro-Economic Theory ........................ 4
640:650 Administering Costs and Prices .............. 5

Accounting Concentration: (Required of all majors)
620:637 Advanced Accounting Theory .................. 5
620:698 Seminar in Accounting ........................ 5

Accounting Electives—(15 credits required from the
following courses:)
620:520 Advanced Accounting .......................... 5
620:531 Taxation ........................................... 5
620:554 Accounting Systems 5
620:570 Governmental and Institutional 
Accounting ............................................. 5
620:580 CPA Problems—Auditing ......................... 4
620:588 CPA Problems—Theory 3
620:589 CPA Problems—Theory 3
620:680 International Accounting 5
640:678 Capital Budgeting ................................ 5

Total credits required 45

Two Master of Science degrees are offered by the 
College of Business Administration; the Master of 
Science in Accounting and the Master of Science in 
Management.

Master of Science in Management

Functional Courses:
(Select two of the following three)
620:610 Accounting Management and Control . . 5
640:674 Financial Management and Policy ... 5
660:660 Marketing Management and Policy . . 4

Economics Course: (Required)
325:611 Micro-Economic Theory .................. 4

Management Concentration: (All required)
650:663 Industrial Relations .................... 3
650:668 Administrative Behavior and Methods .. 3
650:669 Leadership Role in Organizations .... 3
650:670 Organizational Theory and Policy 
   Formulation ..................................'5
650:698 Graduate Seminar in Management .... 4-5
650:665 Executive Decisions ..................... 3
650:666 Operations Research ........................ 3
650:667 Manufacturing and Operation Analysis .. 3
650:547 Advanced Statistics ...................... 3
650:675 Applied Industrial Statistics I ........ 3
650:676 Applied Industrial Statistics II .... 3

Total credits required 48

The faculty of the Management Department of 
the College of Business Administration requires that 
the courses for the Master of Science degree be taken 
in a specific order. Following is the approved se­quence of courses assuming a two-year period of 
study. Any deviation from the course sequence 
shown below requires specific approval by the head 
of the Management Department.

Master of Science in Management

COURSE SEQUENCE—QUARTER SYSTEM

First Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td></td>
</tr>
</tbody>
</table>
| 620:610 Accounting Management and Control . . .. 5
| 640:674 Financial Management and Policy ... 5
| 660:660 Marketing Management and Policy . . 4
| 650:547 Advanced Statistics .................. 3

Second Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td></td>
</tr>
</tbody>
</table>
| 325:611 Micro-Economic Theory .................. 4
| 650:675 Applied Industrial Statistics I ........ 3

Third Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third</td>
<td></td>
</tr>
</tbody>
</table>
| 650:663 Industrial Relations .................. 3
| 650:676 Applied Industrial Statistics II .... 3

Summer Quarter

Take one of the three courses listed under first quarter 
not previously taken.

Second Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td></td>
</tr>
</tbody>
</table>
| 650:665 Executive Decisions ..................... 3
| 650:668 Administrative Behavior and Methods . 3

Second Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td></td>
</tr>
</tbody>
</table>
| 650:666 Operations Research ................... 3
| 650:669 Leadership Role in Organizations .... 3
| 650:698 Graduate Seminar in Management ...... 2

Third Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third</td>
<td></td>
</tr>
</tbody>
</table>
| 650:667 Manufacturing and Operation Analysis .. 3
| 650:670 Organizational Theory and Policy 
   Formulation ...................................'3
| 650:698 Graduate Seminar in Management .... 2-3

THE COLLEGE OF FINE AND APPLIED ARTS

THE MASTER'S DEGREE

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 specialty or that he has performed work 
   which the department head approved as 
equivalent to an undergraduate major, and 
that he has maintained a 2.5 overall grade­point 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 under­
graduate courses in these areas until such examinations can be passed. He must demonstrate his per­
foming 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 instru­
ment 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 perfor­
ance option includes six additional credits in applied music on the student's major instrument.

Repertoire and Pedagogy in the pertinent field, 750:596, 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's De­
gree is offered by the Department. Before under­
taking 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 undergradu­
ate 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 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 within 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

<table>
<thead>
<tr>
<th>A. Required Courses (780)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 Introduction to Graduate Studies (3)</td>
</tr>
<tr>
<td>694 Research and Thesis (3-9) (The Graduate Faculty will assign the actual number after the oral examination.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Theatre Core: 36 credits from the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>560 Dramatic Criticism (4)</td>
</tr>
<tr>
<td>567 Contemporary Theatre Styles (4)</td>
</tr>
<tr>
<td>641 Problems in Directing (4)</td>
</tr>
<tr>
<td>642 Problems in Contemporary Acting (4)</td>
</tr>
<tr>
<td>660 Advanced Technical Theatre (3)</td>
</tr>
<tr>
<td>662 Seminar in American Musical Theatre (3)</td>
</tr>
<tr>
<td>663 Seminar in American Theatre (3)</td>
</tr>
<tr>
<td>664 Seminar in Commedia dell'Arte (3)</td>
</tr>
<tr>
<td>665 Seminar in Theatre Audiences (3)</td>
</tr>
<tr>
<td>667-8-9 Studies in Dramatic Practice (3 each; 9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Electives in Speech and Theatre.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum of 9 recommended.</td>
</tr>
<tr>
<td>556 Special Projects in Theatre (1-4 credits; repeatable for 6 credits). By invitation only of the Graduate Faculty in Theatre.</td>
</tr>
<tr>
<td>568 Children's Theatre Workshop (4)</td>
</tr>
<tr>
<td>681 Playwriting (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Electives in Cognate Fields.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific number required.</td>
</tr>
<tr>
<td>Students may elect related graduate courses in English, psychology, philosophy, art, music or other theatre courses to complete the required minimum of 54 credits.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Thesis Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Historical. An examination, in detail, of some particular aspect in theatre history (period, movement, playwright, director, actor, manager, a particular theatre).</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F. Participation in Productions</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

II. Course of Study: Rhetoric and Communication Concentration

<table>
<thead>
<tr>
<th>A. Required Courses (780)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 Introduction to Graduate Studies (3)</td>
</tr>
<tr>
<td>694 Research and Thesis (3-9)</td>
</tr>
</tbody>
</table>
B. **Rhetoric and Public Address Core:**
18 credits from the following:
- 590 Speech Criticism (4)
- 640 Special Problems — Rhetoric 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.
- 544 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:**
- 544 Group Processes (3)
- 680 Special Problems — Communication/Mass Media (6)
- 681 Advanced Persuasion and Propaganda Analysis (3)
- 684 Studies in Communication Research (3)

Electives in Speech and Theatre: 15 credits total
- 567 Contemporary Theatre Styles (4)
- 590 Speech 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 areas. 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 is offered by the Department of Speech Pathology and Audiology. 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 (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

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 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.

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.

The procedures for securing admission are as follows:

1. Obtain an application form from the School of Law.
2. File with the School of Law an official copy of the transcript of the record from the institution which awarded the degree, at least one week prior to the official registration period published in the University Calendar.
3. Arrange to take the Law School Admission Test which is given by the University, or submit evidence of the score if the test was taken elsewhere.

4. Register with the Law School Data Assembly Service.
5. When practical, arrange for a personal interview with the Assistant Dean of the School of Law.
6. Submit an application fee of $20.00.

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 Admission 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 determined by the Dean of the School of Law.

Auditors

Members of the Bar and graduates of law schools who are not yet members of the Bar may, with the permission of the Dean of the School of Law, enroll for a course without credit. The auditor is required to do all the work prescribed for the regular student enrolled for credit except taking examinations. The fee for the auditor is the same as for a regular student.

Standards of Academic Work

The following system of grades is used in recording the quality of a student's academic work:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points Per Credit</th>
<th>Grade</th>
<th>Quality Points Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>IP</td>
<td>In Progress</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>PI</td>
<td>Permanent</td>
</tr>
<tr>
<td>D</td>
<td>Poor</td>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>F</td>
<td>Failed</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
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 unclassified in the computation as if the repeated course the quality points achieved by the credits attempted.

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
- Fees for residents of Ohio, per credit: $22
- Fees for nonresidents of Ohio, per credit: $28

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 $1050 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 $55 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 Office of the Treasurer. 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 for Legal Education (for students in good standing, after the first year).

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 55,000 volumes. University libraries comprising more than 225,000 volumes are available to law students.

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 a filing fee of $20.00. As a condition for taking the bar examination, the applicant must file an application not less than 90 days prior to the date of the bar examination, a certificate of the School of Law that the student has completed or will complete all courses required by the Rule and a filing fee of $40.00. The Rule requires that a student be tested in the following courses: Business Associations (including Agency, Partnerships and

Credits refers to number of quarter credits assigned to various courses.
Private Corporations), Constitutional Law, Contracts, Criminal Law, Equity (including Trusts), Evidence, 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, 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 Bracton's INN is offered to all students. Bracton's INN has as its purpose the development of skills in legal research, brief writing and oral advocacy before a moot appellate tribunal. Bracton'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 the 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.

In addition to the foregoing, ten fee remission scholarships are available for the 1970-71 academic year for students from minority groups who have completed the Summer 1970 program sponsored by the Council on Legal Education Opportunity.

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 BAXTER'S *Ohio Civil Practice Manual* to the graduating law student displaying scholarship in the study of Code Pleading.

Mr. and Mrs. Evan B. Brewster have established an annual award in the sum of $125.00, 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 the highest ranking student in Corporations each year. The University of Akron Development Foundation awards annually a copy of BALDWIN'S *Statutory Code* to the highest ranking student in Corporations each year.

The Fellows of the Ohio State Bar Association Scholarship is awarded annually to ten students from minority groups who have successfully completed a program of study under the auspices of the Council on Legal Education Opportunity. These scholarships are subject to renewal.

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 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 $100 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 advocatory 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.

The Charles and Ada H. Sacks Scholarship is a fund established in 1969-70, the Centennial Year of the University, in honor of Mr. and Mrs. Charles Sacks by their children, Robert and Naomi Christman, Sy and Laurel Fischer and Harvey and Shirley Friedman, of which the income will be used to provide scholarships to deserving students in the School of Law, on the recommendation of the Dean of the School of Law.

The West Publishing Company annually awards suitable law books to students with the highest first year average, highest second year average,
highest third year average and to a student who 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 in good academic standing 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.

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

CURRICULUM
FULL-TIME PROGRAM
(These courses are offered during the day.)

<table>
<thead>
<tr>
<th>First Year, Required</th>
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<tr>
<td>920:603 Legal Process</td>
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<tr>
<td>920:605 Contracts I</td>
<td>4</td>
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<tr>
<td>920:614 Property I</td>
<td>3</td>
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<tr>
<td>920:615 Legal Research and Writing</td>
<td>1</td>
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<tr>
<td>920:641 Civil Procedure I</td>
<td>3</td>
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<tr>
<td>920:606 Contracts II</td>
<td>4</td>
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<tr>
<td>920:617 Torts I</td>
<td>4</td>
</tr>
<tr>
<td>920:625 Property II</td>
<td>4</td>
</tr>
<tr>
<td>920:642 Civil Procedure II</td>
<td>4</td>
</tr>
<tr>
<td>920:616 Appellate Advocacy</td>
<td>1</td>
</tr>
<tr>
<td>920:618 Torts II</td>
<td>4</td>
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<tr>
<td>920:626 Property III</td>
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<table>
<thead>
<tr>
<th>Second Year, Required</th>
<th>Credits</th>
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<tbody>
<tr>
<td>920:638 Criminal Law</td>
<td>4</td>
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<tr>
<td>920:643 Civil Procedure III</td>
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<tr>
<th>Second and Third Year, Required</th>
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<tbody>
<tr>
<td>920:633 Evidence I</td>
<td>3</td>
</tr>
<tr>
<td>920:671 Business Associations I</td>
<td>3</td>
</tr>
<tr>
<td>920:685 Constitutional Law I</td>
<td>3</td>
</tr>
<tr>
<td>920:634 Evidence II</td>
<td>3</td>
</tr>
<tr>
<td>920:672 Business Associations II</td>
<td>3</td>
</tr>
<tr>
<td>920:686 Constitutional Law II</td>
<td>3</td>
</tr>
<tr>
<td>920:622 Administrative Process</td>
<td>4</td>
</tr>
<tr>
<td>920:628 Legal Profession I</td>
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</tr>
<tr>
<td>920:629 Legal Profession II</td>
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</table>

PART-TIME PROGRAM
(These courses are offered during the evening.)

<table>
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<tr>
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<tbody>
<tr>
<td>920:603 Legal Process</td>
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<tr>
<td>920:605 Contracts I</td>
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</tr>
<tr>
<td>920:615 Legal Research &amp; Writing</td>
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<tr>
<td>920:606 Contracts II</td>
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<td>920:617 Torts I</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>920:625 Property II</td>
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<tr>
<td>920:668 Legal Profession I</td>
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<tr>
<td>920:642 Civil Procedure II</td>
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<td>920:626 Property III</td>
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<td>920:643 Civil Procedure III</td>
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<tr>
<th>Third and Fourth Year, Required</th>
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<tr>
<td>920:633 Evidence I</td>
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<tr>
<td>920:671 Business Associations I</td>
<td>3</td>
</tr>
<tr>
<td>920:685 Constitutional Law I</td>
<td>3</td>
</tr>
<tr>
<td>920:634 Evidence II</td>
<td>3</td>
</tr>
<tr>
<td>920:672 Business Associations II</td>
<td>3</td>
</tr>
<tr>
<td>920:686 Constitutional Law II</td>
<td>3</td>
</tr>
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<td>Electives</td>
<td>Credits</td>
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<tr>
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<tr>
<td>920:602 Development of Law and Legal Institutions</td>
<td>4</td>
</tr>
<tr>
<td>920:631 Commercial Transactions I</td>
<td>4</td>
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<tr>
<td>920:632 Commercial Transactions II</td>
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<tr>
<td>920:640 Administration of Criminal Justice</td>
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<tr>
<td>920:644 Federal Jurisdiction and Procedure</td>
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<td>920:645 Problems in Trial Advocacy</td>
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<td>920:651 Social Legislation</td>
<td>4</td>
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<td>920:652 Creditors' Rights</td>
<td>4</td>
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<td>920:653 Municipal Corporations</td>
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<td>920:654 Domestic Relations</td>
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<tr>
<td>920:655 Individual Studies and Research</td>
<td>1-5</td>
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<tr>
<td>920:660 Seminar in Selected Legal Problems</td>
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<tr>
<td>920:661 Seminar in Political and Civil Rights</td>
<td>3</td>
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<td>920:662 Seminar in Estate Planning</td>
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<tr>
<td>920:663 Patent, Trademark and Copyright Law</td>
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<td>920:665 Seminar in Land Use Planning</td>
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<tr>
<td>920:666 Seminar in Jurisprudence</td>
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<td>920:667 Seminar in Comparative Legal Systems</td>
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<td>920:668 Labor Law</td>
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<td>920:669 World Law</td>
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<td>920:670 Seminar in Legal Problems of the Poor</td>
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<td>920:673 Trusts and Estates I</td>
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<td>920:674 Trusts and Estates II</td>
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<td>920:677 Legal Problems in Business Planning</td>
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<tr>
<td>920:678 Seminar in International Transactions and Relations</td>
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<td>920:679 Problems in Secured Transactions</td>
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<td>920:682 Accounting For Lawyers</td>
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<td>920:683 Conflict of Laws I</td>
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<tr>
<td>920:684 Conflict of Laws II</td>
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<tr>
<td>920:687 Federal Income Taxation I</td>
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<td>920:689 Federal Estate and Gift Taxation</td>
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<td>920:690 Antitrust Law</td>
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<td>920:691 Legal Regulation of Competition</td>
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<td>920:692 Administration of Law Relating to</td>
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<td>Juveniles</td>
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<td>920:693 Remedies I</td>
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<td>920:694 Remedies II</td>
<td>2</td>
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<tr>
<td>920:695 Legal Aid</td>
<td>3</td>
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<tr>
<td>920:696 Law Review</td>
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</table>
The University of Akron has a rich, historical tradition of 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 its 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, and Institute for Civic Education 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 and from 8 a.m. to 5 p.m. on Fridays during the regular academic year. These publications 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 1,200 students registered in the Department of Special Programs and between 15-20,000 annual attendees at Institute for Civic Education programs.

The Summer Sessions

WILLIAM A. ROGERS, Ed.D., Dean

During the summer months, The University of Akron provides instruction, both day and evening, to approximately 12,000 students. The Summer Session is divided into three periods for academic enrollment. In 1971, the dates for the various periods are:

- **Summer Session I**: Begins Monday, June 21
  Ends Friday, July 23

- **Summer Session II**: Begins Monday, July 26
  Ends Friday, August 27

- **Post Session**: Begins Monday, August 30
  Ends Tuesday, September 21

Summer Session I and II consist of five-week periods. Day classes meet daily while evening classes meet Monday, Tuesday and Thursday evenings. The total instructional minutes are per credit hour in a regular quarter or summer session period are equivalent.

The Post Session is a three-week intensified period when students take only one course during the session. Students use the Post Session to lighten their fall academic loads, to accelerate, or to brush up on a lower level course prior to the fall.

During the two five-week sessions, a number of year-long, three-quarter courses are offered in accelerated three-week patterns.

Example of Three-Week Pattern

<table>
<thead>
<tr>
<th>Daily</th>
<th>Time</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-10:45</td>
<td>Institutions 110:115--3 crs.</td>
<td></td>
</tr>
<tr>
<td>7:05- 8:50</td>
<td>Natural Science—3 crs.</td>
<td></td>
</tr>
<tr>
<td>10:30-11:40</td>
<td>Lecture—0 crs.</td>
<td></td>
</tr>
<tr>
<td>11:50-12:50</td>
<td>Discussion—3 crs.</td>
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</tr>
<tr>
<td>1:00- 2:00</td>
<td>Discussion—3 crs.</td>
<td></td>
</tr>
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<td></td>
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In addition to the courses listed above, Principles of Chemistry, Organic Chemistry, Abstract Algebra, Advanced Calculus I, Intro to Statistics, Elementary Education, Beginning and Intermediate French-German-Spanish, are usually available in the three-week pattern.

A number of two-week workshops in the field of education are available. A workshop in Economic Education, Basic Driver Education for Teachers, Cinematography, Children's Theatre, Black Culture for Elementary Teachers, Physical Education, Man's Environment and Survival, School Leadership Institute for Principals, Health Education, Debate Coaches Institute, Drug Abuse in Schools, Summer Dance Institute, Institute for the Chemistry and Physics of Elastomers, Annual High School Debate Institute and Tournament.

The Department of Special Programs offers programs of non-credit study for adults. A sample of programs available is Algebra, Computer Programming, English, Reading Improvement, Speed Reading, Typewriting, Tennis, Korean Karate, etc.
Campus concerts are held on the mall between the Gardner Student Center and the Education Building. The University band, orchestra and summer chorus perform in the evening on the mall.

The Summer Film Festival presents twelve outstanding films, free to all students and staff.

Summer students may register for Summer Session I, II, and Post Session by mail, beginning on April 1 each year. Students are counseled and pre-programmed for all sessions, confirming selections by mail, pay bills by mail and then attend classes.

THE SUMMER SESSION HAS BEEN DESIGNED TO SERVE THE FOLLOWING STUDENTS:

ENGINEERING STUDENTS—so that they may continue on schedule while studying on the cooperative program.

THE COMMUNITY AND TECHNICAL COLLEGE—Courses leading to the two-year Associate Degree in Arts, Business and Office Technology, and Engineering and Science Technology. These courses are available in the day and evening program.

TRANSIENT STUDENTS FROM OTHER COLLEGES AND UNIVERSITIES—so that they may take advantage of their summer time in Akron to work towards their chosen degrees. Students classified as undergraduate "transients" use the Transient Application Form available in the Admissions Office located in Buechtel Hall. Graduate "transient" students must submit a letter from their college to the Dean of Graduate Studies and Research. A thirty dollar fee is required.

JUNE HIGH SCHOOL GRADUATES—June high school graduates may apply for admission and enroll immediately upon graduation. Recent high school graduates may accelerate their academic programs or take developmental courses if indicated by entrance tests.

CONTINUING UNIVERSITY OF AKRON STUDENTS—Summer classes provide an opportunity for continuing students to accelerate their academic program. Other students find the summer a convenient time to make up for lost time during the regular academic year.

NEW STUDENTS—ADMISSION—Applicants to The University of Akron who enroll during a summer period can obtain application forms from the Admissions Office located in Buechtel Hall. Summer Session applicants must meet all of the admission requirements. The $20 admission fee is paid only once and is a non-refundable fee.

FORMER AKRON STUDENTS—Students who were not enrolled in the previous quarter must contact the Registrar’s Office for clearance (and registration forms) prior to contact with an adviser. The Registrar’s Office is located in Spicer Hall on Carroll Street.

RESIDENCE FACILITIES—Housing for men and women is available on the University campus during the summer. Those interested in information and reservations should contact The Director of Housing.

Single Occupancy: (Room only) $3.50 per day
Double Occupancy: (Room only) $2.50 per day

Summer Meal Arrangements: Meals are not included in the room rates. On the average, students can eat for $3.25 a day in the Gardner Student Center.

ACADEMIC PROGRAM—The Dean of Summer Sessions reserves the right to cancel and/or combine classes. Decisions to cancel and/or combine classes will be based upon the academic and financial feasibility of the given situation. Reassignment of faculty to improve student-faculty ratio is an additional right reserved by the Dean of Summer Sessions.

Off-Campus Academic Programs

WILLIAM A. ROGERS, Ed.D., Dean

The University of Akron has established a number of resident credit centers in Northeastern and Northcentral Ohio.

Resident credit centers are generally established in local high schools or other suitable facilities where third and fourth year baccalaureate courses are offered. In addition, graduate education and business administration courses may be scheduled.

Academic centers are usually located in a high school and offer the first and second year courses at the baccalaureate level for transfer purposes. Academic center classes are made available in the late afternoon and evening hours.

At the present time, The University of Akron does not participate in branch university activities.

Currently, the University has active resident credit centers at The Babcock and Wilcox Company Research Center in Alliance, Ohio; in Canton, Ohio at McKinley High School, Harton Elementary School, Lathrop Elementary School, Canton Public School Audio Visual Department and Canton Aultman Hospital; in Sebring, Ohio at Sebring Elementary School;
Massillon City Hospital in Massillon, Ohio; Mt. Vernon High School in Mt. Vernon, Ohio; Elyria Senior High School in Elyria, Ohio; Ashland Senior High School in Ashland, Ohio; the Medina Board of Education in Medina, Ohio; and at the Tallmadge High School, Tallmadge, Ohio.

Presently, the University shares the academic center facility located in the senior high school in Orrville, Ohio, with Kent State University. At Orrville, the University offers the technical courses of The Community and Technical College curriculum. The technical manpower needs of Wayne County are being served by The Community and Technical College program at the Orrville Academic Center.

An “intensive” Diagnostic Workshop for teachers in an urban setting was located at the Canton Latham inner-city school. A set of teaching materials was designed by the members of this workshop in Social Work Techniques related to inner-city problems.

Three unique programs were designated for selected school districts by the office of Off-Campus Academic Programs. Value Theory, a study of teachers’ value systems was developed for teachers in the Ashland School district. The Law and The Teacher, a workshop organized especially for the teachers and administrators of the Tallmadge school district. New Methods for the Elementary Science Teacher was a special program developed for the teachers in the Mansfield school district.

Department of Special Programs
Cecil L. Dobbins, 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 had 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 noncompetitive environment is the only consideration.

Permanent student records are kept for all persons enrolled. Homework and examinations may be given, although final grades are based solely on attendance.

Following is a representative though partial listing of types of subjects taught in informal classes:

For the student wishing to improve his career skills—


**ELECTRONICS**—Basic Electronics, Electronic Application, AC-DC Circuity, and Transistors.


**METALLURGY**—Electroplating, Properties of Materials, and Metal Casting.


**SECRETARIAL SKILLS**—Advanced Dictation and Transcription, Forkner Shorthand, Shorthand, and Typewriting.

**SOCIAL SCIENCE**—Labor Relations.

Strictly for enjoyment are—

**HUMANITIES AND FINE ARTS**—Antiques, Glass Blowing, Ceramics, Crafts, The Novel, Religions of the World, Interior Decorating, Jazz Appreciation, Motion Picture Production Workshop, Piano Master Class, and Poetry.

**MODERN LANGUAGES**—French, German, Italian, Greek, Spanish, and Russian.

**PHYSICAL EDUCATION AND RECREATION**—Bowling, Family Camping, Physical Fitness for Men and Women, Scuba and Skin Diving, and Swimming for Women.

**SCIENCE**—Astronomy, Geology, and Rocks and Minerals.

**SELF IMPROVEMENT AND UNDERSTANDING**—Art of Positive Living, Beauty Art Course, For Women:

Social Science—Fundamental Liberties of a Free People, History of Ukrainian Civilization, and You and the Law.

Basic educational improvement is gained from—

**College Skills Seminars—**Algebra, College English, College Science, College Study, Trigonometry, and Speed Reading.

**Communication Skills, Verbal and Written—**Business and Professional Communications, Public Speaking, English as a Second Language, Business Writing and Communications, Creative Writing, English for Personal Improvement, and Reading, Writing, and Vocabulary Improvement.

Mathematics—Algebra, Geometry, and Mathematics for Everyday Use.


Additionally, special courses are held for the American Institute of Banking, X-Ray technicians from Akron area hospitals, and insurance underwriters.

The Institute For Civic Education

**Charles V. Blair, M.A., Director**

**Mrs. Mary Elizabeth Chesrown, Assistant to the 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 resource 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 Educational Calendar 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 Breakfast 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 ten 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.

A contract with the Agency for International Development of the United States Department of State to provide an 11-week residential program in the Engineering Management of Water Supply Systems is administered by the Institute for the University. Participants in the water management project come from the developing nations of the world and are referred to The University of Akron by AID, the World Health Organization, the Pan American Health Organization, and the several specialized agencies of the United Nations. Since 1962, there have been 107 participants in this project representing 36 different counties.
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 luncheons and weekly World Affairs luncheons. 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.

Research:
Looking at the World of Tomorrow

In the past, colleges and universities have been thought of as ivy-covered storehouses of knowledge where neatly packed information was dispensed to eager students. But this has never been true, for it is here that much of the new knowledge developed. And with the accelerating tempo of our times, there is an increased call for the universities to provide more new knowledge to enable society to cope.

The University of Akron is alive to this challenge and has sought to develop its research program with an eye to the needs of the society it serves. Here the emphasis is on work that is relevant, not on mere knowledge for knowledge’s sake.

One consequence of this concern has been the number of interdisciplinary teams that have been put together to tackle specific problems. Thus problems in connection with water pollution have used the services of chemists, biologists, chemical, mechanical and civil engineers.

All of this benefits the student. While the planning and organization of a research project is usually carried out by or with the assistance of a faculty member, both graduate and undergraduate students have the opportunity to participate, depending on the nature of the project and the skills and knowledge required.

Additionally the student is assured of a skilled, knowledgeable faculty, not cloistered in an ivory tower, but alert to the latest developments in the various disciplines. It also makes it easier for the student to bridge the gap between the knowledge of the past that he is obtaining from his books and lectures, and the up-to-date activities of the worlds of commerce, industry, education and technology. All of the research activities on campus are coordinated by the University Research Council which also serves as the policy making body for research. The Council consists of the Coordinator of Research and the Directors of the four Research Institutes, the Institute of Polymer Science, the Institute of Civic and Educational Research, the Institute of Business and Economic Research and the Institute of Science and Engineering Research.

Institute of Polymer Science—The oldest of the research institutes, this was originally known as the Institute of Rubber Research. This institute has a staff of seventeen faculty members who direct the work of its pre-doctoral and post-doctoral students in a wide range of studies in the chemistry, physics and engineering aspects of polymers. The Institute is equipped with an extensive array of instrumentation and specialized research equipment appropriate to its activities.

Institute of Civic and Educational Research—Concerned with the increasingly complex human problems facing our society today, this Institute is carrying out a number of studies designed to assist government and industry meet the challenges of the times. In addition to studies whose concern is with how to improve the educational process, there are a number of programs which aim to improve governmental service, both by devising new solutions to problems and by bringing together experts in various fields to share their expertise with others.

Institute of Business and Economic Research—The work of this Institute is carried out principally by members of the Department of Economics and the College of Business Administration. Most of the work in this Institute is not of a project nature but rather is of the nature of a consultation. The specific problem of a specific client is handled rather than large-scale, long-range theoretical studies.

Institute of Science and 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 re-
tors 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 seek ulti-mately to relate the molecular structure of macro-
molecules to their physical behavior, it requires the combined efforts of chemists, physicists and engi-
neers. 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. de-
grees in Polymer Science. This program is adminis-
tered by the Department of Polymer Science, the academic arm of the Institute. Its faculty also hold appointments in other science and engineering de-
partments. This enables the graduate student, while pursuing his individual field of science or engineer-
ing, 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. Pro-
fessor in various disciplines, a combined technical and non-technical staff of ten, 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 per-
fomed 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 stu-
dent. The Institute also operates an Applied Re-
search Section which undertakes projects as a ser-
vice for government and industry, performed by a special staff of investigators.

Center for Urban Studies
GEORGE J. MAUER, Ph.D., 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 inter-relationships which cause expansion and 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 interdisciplinary 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 Administration, 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 provide information and basic data which 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.
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
228 Food Service Management
242 Commerce
244 Data Processing
252 Sales and Merchandising
254 Secretarial Science
256 Transportation
270 Preclinical Nursing
272 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
384 Polymer Science
388 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.
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 quarter.
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.

110:115-117. INSTITUTIONS OF THE UNITED STATES. 3 credits each quarter.
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.

110:120-121. 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 HORSEMANNSHIP. 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 WATER SKIING. 1 credit.
110:148 VARSITY WATER SKIING. 1 credit.
110:149 VARSITY SWIMMING. 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 HORSEMANNSHIP. 1 credit.
110:172 SOCCER. 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 recognize 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.

110:303-304. Eastern Civilizations. 3 credits each quarter.
  Prerequisite, 96 credits. The primary objective of this course 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, such as the Far East, the Indian Subcontinent, the Near East, Africa and South-East Asia. 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.

110:317-318-319. Western Culture Traditions. 4 credits each quarter.
  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 one 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.

116:401. 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, since this course is NOT offered in the summer.

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). 1 1/2 credits each quarter.
  Three 1-hour classes each week and consists of both academic courses and military training. The academic portion, World Military Systems Vol. I, is an introduction to the study of the nature and causes of war, the functions and employment of the United States military forces and the role of the United States Air Force as an instrument of national power. Its purpose is to orient the student in the political and ideological surroundings in which the U.S. military forces operate. The subject matter is valuable to the student in his capacity as a citizen, voter and taxpayer even if he does not intend to continue into the advanced Professional Officer Course (POC). 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 Course (GMC). 1 1/2 credits each quarter.
  Three 1-hour classes each week and consists of both academic courses and military training. The academic portion, World Military Systems Vol. II, and Struggle for Peace continues the study of the U.S. military forces with particular emphasis on the role and mission of the U.S. Air Force and the manner in which the Air Force is structured to accomplish its mission. The student examines in considerable detail the basis for the conflict between democracy and communism and the threat this conflict poses to world peace. It affords students 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 officer-type activities.

150:303-304-305. Third Year Aerospace Studies (AS 300), Professional Officer Course (POC). 3 credits each quarter.
  Prerequisite, 255 and individual selection by Professor of Aerospace Studies on basis of competitive standing. Four 1-hour classes each week. This is the first half of the two-year Professional Officer Course.

150:433-454-455. Fourth Year Aerospace Studies (AS 400), Professional Officer Course (POC). 3 credits each quarter.
  Prerequisite, 305. Four 1-hour classes each week. Second half of the two-year Professional Officer Course. The academic portion of the Professional Officer Course is a two-year program to develop the leadership and managerial potential of a student in a way that will facilitate his duties as an officer when called to active duty. The course is student centered in which the individual learns by doing. Situational problems require creative thinking and emphasis is focused on effective speaking and writing.
  AS 300 academic portion includes a survey of the development of airpower in the United States, aerospace power today, and an introduction to astronautics and space operations. Within this study, attention is
devoted to developing the communicative skills needed by junior officers. Corps Training provides advanced leadership experiences in officer-type activities.

AS 400 academic portion includes a study of Air Force leadership at the junior officer level, including its theoretical, professional, and legal aspects; and a study of military management functions, principles and techniques. 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 officer-type activities.

U.S. Army R.O.T.C.

160: MILITARY SCIENCE

160:100-101-102. First Year Military Science (MS I) 1 1/2 credits each quarter.

Three 1-hour classes each week consisting of both academic courses and leadership training. This course of study 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. Primary subjects include 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, a familiarization with infantry individual weapons, an explanation of the Department of Defense and Army organization and familiarization firing with the .22 cal. rifle. This course would be most beneficial to any student regardless of his future intentions to continue in the ROTC 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. The weekly Leadership Laboratory places the student in a working environment to develop his leadership skills and introduce him to the customs and traditions of the military. This training is designed to develop individual character and the attributes essential to a citizen leader.

160:200-201-202. Second Year Military Science (MS II) 1 1/2 credits each quarter.

Prerequisite, 100-191-102 or equivalent. Three 1-hour classes each week consisting of both academic courses and leadership training. This course of instruction is designed to develop the student's understanding of the procedures necessary to lead small military units and to familiarize him with the principles applied in modern warfare. Primary subjects include small unit tactics, map reading, and military history. Military tactics will give the student an understanding of the duties and responsibilities of small unit commanders whereas military history analyzes specific battles and campaigns from the Civil War through the Conflict in Vietnam. The course prepares the student for further study in the Advanced ROTC Program. The weekly Leadership Laboratory offers the student an opportunity to develop leadership traits at small unit level by presenting them with practical responsibility for command.

160:300-301-302. Third Year Military Science (MS III) 3 credits each quarter.

Prerequisite, 200-201-202 or equivalent. Five 1-hour classes each week consisting of both academic and leadership training. The first two quarters of this course are designed to prepare each student to become a junior officer in the Army upon college graduation. The course of study will give each student a working knowledge of small unit tactics and the leadership essential at the junior commander level. Other topics include personal and professional qualifications of a military instructor, military career opportunities and benefits, and the branches of the Army. The spring quarter is devoted to prepare the student for his successful participation in and completion of the six week cadet summer camp training required of all advanced ROTC students. Emphasis is placed on learning the individual skills of a soldier. The weekly Leadership Laboratory places the student in a working environment where he can develop his leadership skills through the practical application of the principles and techniques learned in the classroom.

160:400-401-402. Fourth Year Military Science (MS IV) 3 credits each quarter.

Prerequisite, 300-301-302. Five 1-hour classes each week consisting of both academic study and leadership training. The purpose of this course is to familiarize the student with the fundamentals and techniques of leadership, drill, and command, and prepare the student for two years of active military duty upon graduation. The subject matter includes company tactics, logistics, and administration, besides battalion level staff procedures, military intelligence, and organization for tactical operations. Cadets will also receive working knowledge of military law and the duties and responsibilities of a newly commissioned officer. The weekly Leadership Laboratory provides practical leadership experiences in cadet and officer-type activities. The student is treated and performs as a junior officer.
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
mathematical 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.

202:129. 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, 1 unit of algebra, 1 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.

202:234. 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.

202:235. MATHEMATICAL ANALYSIS V. 3 credits.
Prerequisite, 134. The structure and logic of math­ematics,
Boolean algebra, probability and statistics, per­mutations and combinations, algorithmic procedures in
problem analysis, determinants, and matrices, linear al­gebra,
inequalities, and illustrative problems of a busi­ness nature.

202:240. HUMAN RELATIONS. 3 credits.
A study of principles and methods which will aid
in understanding the interpersonal relations of people
on the job, in the community, and in the home.

202:242. AMERICAN SOCIETY. 4 credits.
A coverage of the impact of traditions behind Amer­i­can values and the impact and influence of values on
American society and thought. Emphasis is placed on
role of individual in American life.

202:247. SURVEY OF BASIC ECONOMICS. 5 credits.
A survey of basic economic principles and issues.
An introduction 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.

202:294. 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 de­signing
an understanding of these newly developing
technical community service roles.
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. An 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. A 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. 3 credits.
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 addictions, 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.

222:250. POLICE PATROL OPERATIONS. 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 WORK STUDY. 3 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.

224: COMMERCIAL ART

224:124. COMMERCIAL ART STUDIO MECHANICS. 3 credits.
Prerequisites, 149, 292:121, 710:125. Craftsmanship 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, 710:224. 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 quarter.
### 228: FOOD SERVICE MANAGEMENT

**Fundamentals of Food Preparation I, II, III.** 3 credits each quarter. (1-3)

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.

**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.

**Quality 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.

**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.

**Food Service Internship I and II.** 4 credits each quarter.

Sequential. Prerequisite 233. A continuation of 233. Food Service experience under commercial operating conditions.

**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

**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.

**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.

**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.

**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.

**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 how high an acquisitive useful knowledge.

**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.

**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.

**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.

**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.
Prerequisite, 3 credits of Economics and 3 credits of Accounting. A survey of the field including instruments, procedures, practices and institutions. Emphasis on basic principles.

244: DATA PROCESSING

244:120. INTRODUCTION TO INFORMATION PROCESSING I. 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 INFORMATION PROCESSING II. 3 credits.
Prerequisite, 120. 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 assembly language as an introduction to programming.

244:130. COMPUTER PROGRAMMING I. 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 real and assembly language 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.

244:232. COMPUTER PROGRAMMING III. 3 credits.
Prerequisite, 131. This course is an introduction to COBOL with specific orientation toward the system/360.

244:233. COMPUTER PROGRAMMING IV. 3 credits.
Prerequisite, 232. This course is a continuation of Programming III including detailed applications in areas such as payroll and inventory. Disk and tape concepts will be discussed.

244:234. COMPUTER PROGRAMMING V. 3 credits.
Prerequisite, 233. This course emphasizes topics which are varied to fit the needs of the students at the time. Such topics as utility utilization, operating systems, advanced topics in disk storage and introductory programming in PL/1 may be offered.

244:240-241. BUSINESS AND MANUFACTURING 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.

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 the 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. DISPLAY TECHNIQUES. 3 credits.
Prerequisite, 137. A basic studio course in Retail Display Techniques. Includes window, interior, and point of purchase display categories.

252:137. DESIGN AND COMPOSITION IN COMMERCIAL ART. 3 credits.
Principles of design as applied to commercial art. Function in visual design, elements of design, color theory, lettering, printing processes, layout to camera-ready art. Studio projects in advertising graphics. No credit toward Commercial Art major.

252:202. RETAILING AND FRANCHISING. 3 credits.
Presents basic principles and practices of retailing and franchising operations. This includes site selections, store design, types of retail institutions, store operations and services, distribution centers and branch coordination.

252:203. TECHNIQUES OF RETAIL MERCHANDISING. 3 credits.
Prerequisite, 202. A survey of current retailing procedures at the department level to include the merchandising function, buying and pricing procedures, inventory control, sales analysis, open-to-buy planning and control and department expense control.

252:206. INTRODUCTION TO ADVERTISING MEDIA. 3 credits.
Prerequisite, 103. This course develops the elementary relationships between the advertising media themselves and also between the media and their position in the overall advertising mix. After a brief introduction in which the concept of an advertising plan is defined, the course moves into a discussion of the basic advertising media. Campaign planning with media selection and scheduling are stressed in relation to the overall advertising plan. The course concludes with a brief description of international and non-commercial advertising.

252:210. WHOLESALING AND SERVICE FUNDAMENTALS. 3 credits.
A survey course in the fundamentals of wholesaling and service type business institutions. This encompasses...
a brief history of these enterprises with emphasis on the current types, status and functions of each. Also pertinent legislation and its effects are discussed. Job opportunities and progressions are explained and examined.

252:211. MATHEMATICS OF RETAIL DISTRIBUTION. 3 credits.
Prerequisite: 242:170. A basic skills course dealing with merchandising mathematics. This includes an understanding of the types of markups, the retail method of inventory, sales and stock planning and open-to-buy computations. Problem solving techniques are utilized throughout in order that the student can acquire a working knowledge of the mathematical concepts and background for successful retail buying.

252:212. PRINCIPLES OF SALESMANSHIP. 3 credits.
A study of the basic principles of selling, emphasizing individual demonstrations and sales projects. A review of the sales function as an integral part of the marketing process. This includes personal preparation for the vocation, buying motives, prospecting, the selling process and ethical problems related to industrial, wholesale, retail and direct selling.

254:119. BUSINESS ENGLISH. 3 credits each quarter.

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, 242:170, 211, 254:125, 153. 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.

254:153. TYPING PRINCIPLES. 3 credits.
Fundamentals of typewriting followed by drill to acquire skillful coordination of machine parts. The ability to type 35 words per minute with five errors for three minutes is the minimum requirement.

254:154. TYPING PRACTICES. 3 credits.
Prerequisite, 153. Application of the typewriting skill to various typewriting problems. The ability to type 45 words per minute with five errors for three minutes.

254:155. TYPING PROJECTS. 3 credits.
Prerequisite, 154. Application of typewriting skill to letter production, business reports, technical papers, manuscripts, and statistical typing. A minimum standard of 55 words per minute with five or fewer errors for five minutes.

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.
Typing Practice, 154, must have been completed or should be taken concurrently. For the students who completed Gregg shorthand theory. Introduction to new matter dictation and typewritten transcription.

254:173. SHORTHAND AND TRANSCRIPTION. 4 credits.
Typing Practice, 155, must have been completed or should be taken concurrently. Emphasis on skill in writing Gregg shorthand and transcribing. A minimum dictation skill of 70 wpm on new material for 3 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.
Prerequisites, 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.

254:257. SECRETARIAL MACHINES. 4 credits. (2-hour lab required.)
Prerequisite, 155. 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 on 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 speed 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, 258. 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.
Prerequisite, 153. 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 quarter.
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 directed to the practical aspects of terminal management.

256:118. Transportation Freight Rates and Classification. 3 credits.
Detailed study of motor transport rates and their applications utilizing extracts of existing tariffs of various regions. Attention will be directed to the practical aspects of terminal management.

256:220. Transportation Terminal Management and Operations. 3 credits.
A study of the management problems, practices, decision-making as they pertain 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.


Sequential. A series of three courses which includes comprehensive study of federal regulation of the transportation industry. 226 covers a thorough review 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

284:101. INTRODUCTORY CHEMISTRY I. 4 credits.
Introduction to basic facts and principles of chemistry at an elementary level. Important elements and compounds and their uses in different fields. Suitable for students of other programs. 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 solution. Laboratory.

284:121-122. ORGANIC PRINCIPLES I AND II. 4 credits each quarter.
Sequential; prerequisite, 101. Nomenclature, classification, preparation 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 quarter.
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. 3 credits.

284:208. CHEMICAL QUALITY CONTROL. 2 credits.

284:210-211. SCIENTIFIC GLASS BLOWING I AND II. 1 credit each quarter.

Sequential, Prerequisite, permission. Laboratory instruction in the art of glass blowing. Fabrication and blowing of scientific glassware and chemical apparatus will be stressed.

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. ELASTOMER TECHNOLOGY. 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, 123, 204. A survey of polymer structure and proportions and basic polymer preparation and testing methods. Commercially important polymers will be used as lecture and laboratory examples.

286: ELECTRONIC TECHNOLOGY

288:122. CIRCUIT THEORY. 4 credits (3-1).

288:123. ELECTRONICS I. 4 credits (3-1).
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.

288:124. ELECTRONICS II. 4 credits. (3-1)
Prerequisite, 123. Study of Class A single and multi-stage transistor amplifiers. Basing considerations, equivalent circuits, basic amplifier design.

288:127. MEASUREMENTS. 3 credits. (2-1)
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. (0-2)
Pre-requisite, 123. Fundamentals of electronic drafting.
Preparation of principle types of electronic drawings.
Survey of sources of electronic data and standards and experience in their use.

286:153. DC CIRCUITS. 6 credits. (5-1)
Corequisite 202:131. Nature of electricity, current and voltage, Ohm's Law, network analysis, DC instruments, magnetism, inductance, capacitance, transients and time constants.

286:225. ELECTRONICS III. 4 credits. (3-1)
Pre-requisites, 124. Study of application of transistors in low frequency circuits. Topics include single stage feedback, multistage feedback, power amplification and power supplies.

286:226. INTEGRATED CIRCUITS. 2 credits. (1-1)
Pre-requisites, 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.

286:227. DIGITAL COMPUTERS. 4 credits. (3-1)
Pre-requisite, 123. Fundamentals of digital computation, Boolean algebra, switching circuits, computer units, analog-digital conversion.

286:242. MACHINERY. 4 credits. (3-1)

286:245. ANALOG COMPUTERS. 4 credits. (3-1)

286:249. INDUSTRIAL ELECTRONICS. 4 credits. (3-1)
Pre-requisites, 225 and 242. Industrial electronic circuit principles including timing, heat and light sensing devices, power controls and typical control circuits. Laboratory practice with device characteristics and simple circuits.

286:250. ELECTRONIC PROJECT. 2 credits. (0-2)
Pre-requisite. 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 (3-1)
Pre-requisite, 225. Principles of radio-wave propagation, modulation, and demodulation. Fundamentals, components, and circuits of communications systems.

286:253. SERVOMECHANISMS. 3 credits. (2-1)

286:255. SHOP PRACTICES. 1 credit. (0-1)
Pre-requisite, 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.

286:351. INDUSTRIAL ELECTRICAL SYSTEMS. 4 credits.

286:352. DIGITAL SYSTEMS. 4 credits.
Pre-requisite, 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.

286:356. CIRCUIT ANALYSIS. 3 credits.

286:410. TECHNOLOGY PROJECT. 1 credit.
Pre-requisite, 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.

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 production: manpower, materials and equipment.
This course is concerned with the selection and arrangement of the activities which constitutes the factory. The selection and implementation of the material handling system that will facilitate production.

288:232. LABOR-MANAGEMENT RELATIONS. 4 credits.
A study of the historical background of the labor movement. A study of the management viewpoint, the legal framework within which the modern labor organization operates, and the collective bargaining process and its effect on current labor management relations.

288:242. PRODUCTION AND QUALITY CONTROL PROCEDURES. 6 credits.

288:245. PLANT AND EQUIPMENT MAINTENANCE. 3 credits.

290: INSTRUMENTATION TECHNOLOGY

290:120. INSTRUMENTATION DRAFTING. 2 credits. (1-2)
A study of the effective ways of presenting instrumentation information. Includes practice in the preparation of sketches, drawing, graphs and bills of materials according to industry standards.

290:121. FUNDAMENTALS OF INSTRUMENTATION. 5 credits. (4-1)
Prerequisite, 292:153. A study of the variables encountered in process instrumentation and the indicating and recording devices used to measure these variables. Includes measurement of flow, pressure, temperature and related phenomena in industrial processes.

290:230. CONTROL PRINCIPLES. 5 credits. (4-1)
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. (3-1)
Prerequisites, 230, 232. Analysis and design of feedback control systems by means of frequency response methods.

290:232. COMPUTER PRINCIPLES. 5 credits. (4-1)

290:240. CALIBRATION AND STANDARDIZATION. 2 credits. (0-2)
Corequisite, 290. 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. (1-2)
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.

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.

292:125. STATICS. 5 credits.

292:151. BASIC PHYSICS: MECHANICS. 4 credits. (3-1)
Corequisite, 202:132. Principles of mechanics. Topics includes force and motion, work and energy, properties of fluids and gases, and introduction to atomic physics.

292:152. BASIC PHYSICS: ELECTRICITY AND MAGNETISM. 3 credits. (2-1)
Prerequisite, 202:131. Principles of electricity and magnetism. Topics include electrostatics, basic directcurrent circuits, magnetism and electro-magnetism, alternating currents, and basic a-c circuits.

292:153. BASIC PHYSICS: HEAT, LIGHT, AND SOUND. 3 credits. (2-1)
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.

Prerequisite, 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, 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.

292:245. **Mechanical Design II.** 5 credits.
Prerequisite, 244. Machine layouts. Dimension determination from graphical constructions. Limit dimensioning for mass production manufacture. Complete overall 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.


Prerequisite, 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 layout and specifying all components complete with cost estimate.

292:347. **Production Machinery and Processes.** 5 credits.

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, 292:133. Basic tools and computations for surveying, measurements of distances, elevations, and angles, traverse surveys. Field practice.

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.

298:233. **Construction Administration.** 4 credits.

298:234. **Elements of Structures.** 4 credits.

298:236. Material Testing Laboratory II. 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.
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310: BIOLOGY

310:121-122-123. PRINCIPLES OF BIOLOGY. 4 credits each quarter.
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.

310:177. INTRODUCTORY ANATOMY AND PHYSIOLOGY. 3 credits each quarter.
Anatomy of human body, chiefly gross study of all organ systems, and their functions. Not open to biology and pre-medical majors. 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.

310:271. 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 principles. 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.

310:308. MICROBIOLOGY. 4 credits.

310:309. MICROBIOLOGY. 4 credits.

310:313. FALL FLORA. 3 credits.*
Prerequisite, 123. Classification and recognition of autumn-flowering plants of the region. Laboratory.

310:314. PLANT TAXONOMY. 3 credits.
Prerequisite, 123. Insects, their nature, structure, life history, and economic importance; insect orders, representative families and types. An insect collection is made.

310:315. SPRING FLORA. 3 credits.
Prerequisite, 123. History of plant classification. Current theory and practice of taxonomy. Laboratory.

310:328. HISTOLOGY. 4 credits.
Prerequisite, 123. Study of animal tissues. Laboratory.

310:341. INVERTEBRATE ZOOLOGY. 5 credits.*
Prerequisite, 123. Invertebrate groups, their classification, anatomy and life history of representative forms. Laboratory.

310:343. PARASITOLOGY. 4 credits.
Prerequisite, 123. Principles of parasitism; survey of the more important human and veterinary parasitic diseases. Laboratory.

310:344. GENERAL ENTOMOLOGY. 4 credits.*
Prerequisite, 123. Insects, their nature, structure, life history, and economic importance; insect orders, representative families and types. An insect collection is made.

* Courses so marked involve field trips and the student may be expected to defray minor transportation costs.
(the department reserves the right to retain any specimens). Laboratory.

310:361-362. HUMAN ANATOMY AND PHYSIOLOGY. 4 credits each quarter.
Prerequisite, 123, College Chemistry. A study of structure and function of the human body. Laboratory.

310:411-412/511-512. PLANT PHYSIOLOGY. 4 credits each quarter.
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. PHYSIOLOGY. 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, horsetails and ferns. Laboratory.

310:419/519. PLANT MORPHOLOGY. 4 credits.
Prerequisite, 123. The structure, reproduction, evolution and economic significance of flowering and nonflowering 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.
Laboratory. Prerequisite, 271. A study of the factors determining the size and structure of populations of microorganisms, plant, animals, and man. Field and laboratory work will emphasize census methods and experimental design.

310:427/527. Limnology. 4 credits.
Laboratory. Prerequisite, 271. Field and laboratory study of ponds, lakes, streams, and rivers. Dynamics of aquatic communities.

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.
Laboratory. 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.

310:437-438. CELLULAR MICROBIOLOGY. 4 credits each quarter.
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.

310:404-441/540-541. BACTERIAL PHYSIOLOGY. 3 credits each quarter.
Prerequisites, 307, 308, 309; 443 recommended. The nature of antigens, the antibody response, and antigen-antibody reactions. The site and mechanism of antibody formation, hypersensitivity, immunologic tolerance, and the immune diseases will also be considered. Laboratory.

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 formation, hypersensitivity, immunologic tolerance, and the immune diseases will also be considered. 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.

Prerequisite, 123 or 151 and 780:135. 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.

310:453-454-455/553-554-555. DEVELOPMENTAL ANATOMY. 4 credits each quarter.
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.

310:457/557. EXPERIMENTAL EMBRYOLOGY. 3 credits.
Prerequisite or corequisite, 455. 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.

* Courses so marked involve field trips and the student may be expected to defray minor transportation costs.
310:458 558. VERTEBRATE ZOOLOGY. 5 credits.*
Prerequisite, 123. Biology of vertebrates, primitive fishes through mammals. Laboratory.

310:461/561. ADVANCED GENETICS. 4 credits.
Prerequisites, 246, 345:111 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 quarter.
Prerequisite, permission. Honors work, usually of 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 sources to biology. Radiation safety and dosimetry will be included as well as selected practical applications of radio-labeled compounds. Laboratory.

310:481/581 PLANT BIOSYSTEMATICS. 3 credits.
Prerequisites 415, 417, 418, 419 or permission. A survey of current research methods and thinking in plant phylogenetic and taxonomic work. Includes study of original publications, discussion of experimental methods and the use of the herbarium in research.

310:491-492/591-592. HUMAN PHYSIOLOGY.
4 credits each quarter.
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.

GRADUATE COURSES

310:601-602. SEMINAR IN BIOLOGY.
1 credit each quarter.
Discussion of students' research and papers from the current literature in biology.

310:610-611. PLANT DEVELOPMENT. 4 credits each quarter.
Sequential, Prerequisites, 418-419; 315:283-286; 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 quarter.
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.

310:667-668-669. MASTERS RESEARCH. 3 credits each.

310:691. ENVIRONMENTAL PHYSIOLOGY. 4 credits.
Laboratory. Prerequisites, 591-592. A study of the physiological reactions of healthy mammals to natural changes or extremes of the physical environment.

315: CHEMISTRY

315:111-112. INTRODUCTORY CHEMISTRY FOR ENGINEERS. 3 credits each quarter.
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 quarter.
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 quarter.
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 quarter.
Introduction to basic facts and principles of chemistry. Laboratory.

315:132-133. PRINCIPLES OF CHEMISTRY. 4 credits each quarter.
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 equilbria in chemical reactions, especially as they apply to qualitative analysis. For chemistry majors and pre-medical students. Laboratory.
315:201-202-203. ORGANIC AND BIOLOGICAL CHEMISTRY. 3 credits each quarter.
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 quarter.
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 quarter.
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 quarter.
Prerequisite, 265 and 345:224 or permission. Gases, thermodynamics, thermo-chemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria, and atomic and molecular structure.

315:316-317. PHYSICAL CHEMISTRY, LABORATORY. 2 credits each quarter.
Corequisite, 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 quarter.
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. 5 credits.
Prerequisite, 268. Constituents of cells and tissues, their organic and fundamental physical chemical properties. Proteins, enzymes, vitamins, carbohydrates, fats, energy relationships, intermediary metabolism.

315:411/511. PHYSICAL CHEMISTRY FOR BIOLOGY MAJORS. 5 credits.
Prerequisites, 268 and 345:111 and permission. Cases, thermodynamics, electrochemistry, chemical kinetics, macro-molecules and colloids, special topics in biochemistry, biophysics and molecular biology.

315:421-422/521-522. QUALITATIVE ORGANIC ANALYSIS. 3 credits each quarter.
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 quarter.
Corequisites, 423, 424, 425. Laboratory techniques employed in gravimetric, volumetric, and instrumental analysis.

315:490. 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.
Prerequisites, 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.
Prerequisites, 472. Chemistry of the transition elements. Coordination compounds, organometallics and metal carbonyls.

315:481-482-483. SENIOR PROBLEMS. 2 credits each quarter.
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 quarter.

315:604-605-606. CHEMISTRY OF POLYMERS LABORATORY. 2 credits each quarter.
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 METHOD 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 quarter.
Prerequisite, permission. Methods for preparing and purifying organic and inorganic compounds. Laboratory.

315:625. COLLOID CHEMISTRY. 2 credits.

315:629-630-631. THEORETICAL INORGANIC CHEMISTRY. 2 credits each quarter.
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 quarter.
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 quarter.
Prerequisite: 345:225, 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 discussed. Applications to inorganic and organic reactions, reversible and irreversible, are discussed.

315:672. ADVANCED ANALYTICAL CHEMISTRY. 4 credits.
Prerequisite, 428 or equivalent. Two lectures, 2 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 emission 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 electron analysis, activation analysis, atomic absorption spectrometry, mass spectrometry, liquid-liquid and liquid-solid chromatography, gas chromatography, ion exchange, thermoanalytical methods, separations, standard, 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.
Prerequisite, 265, 268, 315, 318 or permission. Study of topical subjects of current interest in the chemistry of macro-molecules, 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 quarter for 685 and 686; 2-4 credits for 687.
Prerequisite or corequisite, 674, 675, 676 respectively. Laboratory experiments to illustrate methods and principles discussed in 674, 675, 676, respectively.

315:688. ADVANCED CHEMICAL THERMODYNAMICS. 3 credits.
Prerequisite, 636. Thermodynamics of solutions, fluctuation theory, generalized thermodynamic potential, irreversible thermodynamics.

315:689. 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.

315:690. THEORETICAL ORGANIC CHEMISTRY. 3 credits.
Prerequisite, 689. The application of modern quantum chemistry and thermodynamics to problems in organic chemistry.

315:691. ADVANCED INSTRUMENTAL ANALYSIS. 2 credits.
Prerequisite, 617. Modern Instruments.

315:692. ADVANCED INSTRUMENTATION. 3 credits.
Prerequisites, 318, 428. Theory and application of instrumental measurements. Interpretation of data.

315:695. DOCTORAL RESEARCH. 1 to 24 credits each quarter.
Open to properly qualified students accepted as candidates for the degree of Doctor of Philosophy in Chemistry. Supervised original research may be undertaken in organic, inorganic, physical, or analytical chemistry.

320: CLASSICS
320:161-162-163. COMPARATIVE LITERATURE. 3 credits each quarter.
Major writers of Greece and Rome; their influence on later European literature. No foreign language necessary. Required of majors.

320:199. CLASSICAL MYTHOLOGY. 4 credits.
Myths, legends and folklore of Greece and Rome; some attention to the history of religion. No foreign language necessary.

320:313-314-315. CLASSICAL ARCHAEOLOGY. 3 credits each quarter.
The ruins and monuments of Greece and Rome; history reconstructed by examination of the material remains. No foreign language necessary. Required of majors.
320:401-402/501-502-503. EGYPTOLOGY. 3 credits each quarter.
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 quarter.
Prerequisite, permission of Instructor. The Akkadian language; history and antiquities of Mesopotamia. May be repeated for credit with another cuneiform language.

320:407-408/507-508-509. ANCIENT NEAR EASTERN ARCHAEOLOGY. 3 credits each quarter.
Palestine, Syria, 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 quarter.
The standard language of Hellenistic times with some attention to Modern Greek.

321:431-433/531-532-533. GREEK READING AND RESEARCH. 3 credits each quarter.
Prerequisites, 121-122-123 or equivalent. Second-year Greek or 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 quarter.
Some attention to the development of the Romance languages, especially Italian.

322:143-144-145. SECOND YEAR LATIN. 3 credits each quarter.
Selections from Virgil or Pliny; other material may be offered.
(Note: Students who have completed two years of high school Latin will enroll in Latin 143-144-145. Those who have had one year or less will enroll in 121-122-123.)
(Note: Some of the following courses will be given each year. Latin 322:143-144-145 or equivalent is prerequisite.)

322:303. ROMAN SATIRISTS. 3 credits.

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 Colloquial verse.

322:308. ROMAN LYRIC AND ELEGIC POETS. 3 credits.
Catullus, Horace, Ovid, Propertius and Tibullus.

322:311. ROMAN NOVELISTS. 3 credits.
Petrinius and Apuleius. Milesian tale and Alexandrian romance.

322:431-432-433/531-532-533. LATIN READING AND RESEARCH. 3 credits each quarter.
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. (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. (No credit for persons having completed 245, 246, 247.)

325:245-246-247. PRINCIPLES OF ECONOMICS. 3 credits each quarter.
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 relation negotiations of trade 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 levels, long-range economic growth, short-term fluctuations of 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.

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. Rudiments of game theory. Dynamic economic analysis; solution techniques; some significant dynamic models from the literature.

325:425. QUANTITATIVE ECONOMICS. 4 credits.
Prerequisites, 247, 650:346, 347 or equivalent. Quantitative relations of static and dynamic models and their use in explanation, forecasting and decision-making. Elements of linear-programming, activity analysis, game-theory.

325:426/526. 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.

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.

Prerequisites, 247, 330. Principals and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.

325:450. COMPARATIVE ECONOMIC SYSTEMS. 4 credits.
Prerequisite, 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.

325:460/560. ECONOMIC DEVELOPMENT AND PLANNING FOR UNDERDEVELOPED COUNTRIES. 4 credits.

325:461. PRINCIPALS 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.

325:472/572. STRUCTURE OF ECONOMIC THEORY. 4 credits.
Prerequisite, 406, 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.

325:490/590. 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. MACROECONOMIC ANALYSIS I. 4 credits.
Prerequisite, graduate standing. The construction of static equilibrium models. Emphasis is on the explana-
ory 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.
Prerequisites, 602. Macrodynamics, statics and stability analysis of the closed and open Keynesian system. Inclusive covariates 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.

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.

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 union 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. READING IN ADVANCED ECONOMICS. 4 credits each quarter.
Intensive investigation of selected problem-areas in advanced Economics under the supervision of the instructor. Since the subject matter is decided upon in each case, the course may be repeated 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 quarter.
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.
330:247-248. 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.
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 Conrad.
The development of the English novel from Dickens to Hardy.
330:343. Advanced Expository Writing. 4 credits.
Prerequisite, 242 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 Quarriris Trope to the death of Elizabeth, 1603.
330:364. English Drama of the Jacobean and Caroline Period. 4 credits.
The development of English non-Shakespearean drama from the end of the sixteenth century to the closing of the theatres in 1642.
Development of the British drama from the reopening of the theatres in 1660 to 1800.
Prerequisite, 267. 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.
Sequential; prerequisites, 267. From studies in Old English language and Old English prose to selections from old English poetry, including Beowulf.
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: Pope, Swift and Others. 3 credits.
330:416/516. The Later Eighteenth Century: Johnson, Gray and Others. 3 credits.
Prerequisite, 267. Poetry and prose of the early nineteenth century.
330:420/520. Literature of the Victorian Period. 4 credits.
Prerequisite, 267. Poetry and prose of the later nineteenth century.
A survey of the development of American fiction from its beginnings in the late eighteenth century to the writings of Mark Twain.

A continuation of the first quarter concluding with the close of World War I.

A continuation of the second quarter concluding with recent examples of American fiction.

A survey of American poetry from the beginning to the present time.

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.

Development of American drama from the end of World War I to the present.

Sequential; prerequisite, 267. A study of representative works of major British and Irish writers from 1000 to the present.

Development of British and Irish drama from the late nineteenth century to the present.

Prerequisite, Senior standing and permission. Directed studies both in individual and group sessions designed to encourage independent reading and thought—based on a related series of readings to be arranged with the instructor.

Ancient and modern theories of rhetoric, with attention to the classical oration, the "topics" of rhetoric, and their application to the teaching of English.

From Proto-Old English to the present.

Prerequisites for 490, 491, 492 either 267 or 237, 238, 239 depending upon the nature of the Seminar.

Special studies, methods of literary research, special concentration in English and American literature.

Concentrated study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to the development of Shakespeare's art.

Readings in such playwrights as Lyly, Marlowe, Johnson, Beaumont, Fletcher, Middleton, and Ford and in contemporary writings pertinent to the theatrical scene.

The poetry of John Keats studied against the background of romantic poetic theory and the poetry of Keats' contemporaries.

Major verse of Tennyson, Browning, and Arnold, related poetry and critical studies.

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.

The meaning of American Romanticism applied to the study of Poe, Hawthorne, and Melville.

The meanings of American Realism and Naturalism applied to the study of such writers as Twain, Howells, James, Crane, Dreiser, London, and Norris.

Modern synchronic linguistics; studies in applied linguistics.

The development of European literary criticism from classical times to the present.

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.**

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 supervision position. Consideration of a variety of processes for reproducing the printed word and related illustrations including photography, lithography, letterpress, rotogravure, mimeographing, and other forms of duplication.

331:335. **Publications Supervision. 3 credits.**
Prerequisites, 201, 204. 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 will be covered.

### 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.

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.

335:380. **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)

335:346. **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.

335:389. 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.

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 hours 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 pat-
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.

335:666. 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. SEMINAR IN REGIONAL METHODOLOGY. 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 heads. 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. GEOFORMATION. 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 based on simple physical tests, thin section and polished section analysis. 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.

337:411. 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.
Prerequisite, permission. A field trip course emphasizing phases of geology not readily studied in Ohio and including individual pretip 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.

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 sites. Laboratory.

337:422. Metamorphic Petrology. 4 credits.
Prerequisite, 418. Problems in metamorphism and advanced studies of selected rock sites: A study of metamorphic crystallization with changes in environment. Laboratory.

337:423. Sedimentary Petrology. 4 credits.
Detailed hand sample and thin section examination of selected sedimentary suites particularly with respect to mineralogy and texture. Laboratory.

337:425. Stratigraphy. 4 credits.
Emphasis on the principles of sedimentation and their application in the interpretation of depositional environment and tectonics. Classical stratigraphic sequences will be studied. 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 will be stressed in lecture. The laboratory portion of the source will be devoted to techniques of rock and mineral analysis for science teachers.

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.

337:460. Advanced Paleontology. 3 credits.
Prerequisites, 260 or 463. A study of the major features of evolution including rates of evolution and extinction using as examples selected fossil groups.

337:463. Micropaleontology. 5 credits.
Prerequisite, 260 or permission. An introduction to the techniques, systematics and application of micropaleontology. 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.

340: HISTORY

340:201. United States History to 1815. 4 credits.
From the period of exploration and discovery through the War of 1812.

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.
Arts and Sciences Courses

340:209. MODERN EUROPE, 1870-PRESENT. 4 credits.
The modern world: World War I and II, Nazism,
Communism, Fascism, and postwar Europe.

A survey of the social, economic and cultural history
of Afro-Americans from the 17th century to the present.

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.

A study of select concepts and attitudes with emphasis
on reforms, the impact of the business, agrarianism, cult of the self-made man,
urbanism, muckrakers, religion, literature and the arts, education, and learning.

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.

340:401-402. HONORS SEMINAR IN HISTORY. 3 credits.
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.

Diplomacy of the developing nation, of the Spanish-American War and World War I, and the peacemaking, 1919-1920.

The peace structure of the 1920's, its collapse in the
1930's, wartime and postwar diplomacy.

340:420/520. COLONIAL AMERICA. 3 credits.
The establishment of European colonies in North America to 1689 with special emphasis on English settlements.

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.

Normalcy, the Great Depression, and World War II.

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
historically 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, and economic
thought, and industrial changes. Special emphasis on the economy and its relationship to public policy.

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.

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, 1713-1783. 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.

Rise of National Socialism, the plight of the democracies, road to war, and World War II.

340:456/556. TWENTIETH CENTURY EUROPE, 1945 TO PRESENT. 3 credits.
Europe since World War II, the cold war, and European attempts at unity.

340:458/558. RUSSIA TO 1725. 3 credits.
From the foundation of Kiev through the reign of Peter the Great.

340:459/559. RUSSIA IN THE EIGHTEENTH AND NINETEENTH CENTURIES. 3 credits.
Changes in Russia society and culture, the impact of the West, the end of serfdom, the intelligentsia, the attempts of autocracy to adjust to the industrial age.

340:460/560. RUSSIA IN THE TWENTIETH CENTURY. 3 credits.
Russia in World War I, the revolution, and the Soviet period.

340:463/563. ENGLAND TO 1530. 3 credits.
Anglo-Saxon and medieval England.

340:464/564. ENGLAND, 1530-1750. 3 credits.
Early modern England, an age of transition.

340:465/565. ENGLAND, 1750 TO THE PRESENT. 3 credits.
Modern Britain and the Empire-Commonwealth.

340:467/567. ENGLAND, i471-1588. 3 credits.
The transition from medieval to modern times. Emphasis on economic, social, religious and cultural history, especially music and architecture.

340:468/568. ENGLAND, 1588-1660. 3 credits.
From the Armada to the Restoration.

340:469/569. ENGLAND, 1660-1763. 3 credits.
The Restoration, the Glorious Revolution, and the early Hanoverians.
340:477/577. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY TO 1500. 3 credits.
Science and technology in ancient and medieval times, to 1500.

340:478/578. HISTORY OF WESTERN SCIENCE AND TECHNOLOGY, 1500-1800. 3 credits.
A study of developments leading to the scientific revolution.

The specialization and professionalization of Science in the Nineteenth and Twentieth centuries.

340:480/580. HISTORY OF TECHNOLOGY, 1500-1800. 3 credits.


340:482/582. LATIN AMERICA, NINETEENTH CENTURY. 3 credits.
Era of independence through the launching of new nations.

340:483/583. HISTORY OF JAPAN. 3 credits.
Traditional and modern Japan; its relations with China and the West.

340:484/584. COLONIAL LATIN AMERICA. 3 credits.
Pre-Columbian civilization, discovery and conquest, Spanish and Portuguese institutions.

340:485/585. HISTORY OF CHINA TO 1840. 3 credits.
Traditional China from its origins to the Opium War.

340:486/586. HISTORY OF CHINA SINCE 1840. 3 credits.
The impact of the West; Nationalism; Communism.

Study of historical literature, sources of materials, and major interpretations of European Intellectual History.

340:488/588. HISTORICAL METHODS. 3 credits.
Practice in historical research, use of research tools, experience in the writing of history.

GRADUATE COURSES

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 quarter.
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 quarter.
Prerequisite, 622. This seminar in Roman history will be generally but not necessarily restricted to topics dealing with the archaic and formative periods.

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 quarter.
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 quarter.
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 quarter.
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 history of seventeenth and eighteenth century America.
340:661-662. Seminar in the History of Colonial and Revolutionary America. 4 credits each quarter.
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 quarter.
Prerequisite, 663. Selected topics on the period including historiography. Special emphasis on Jeffersonian Democracy, reformism, and the coming of the Civil War.

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 quarter.
Prerequisite, 680. Selected topics in the development and operation of the American economy.

Study of historical literature, sources of materials, and major interpretations of American Social and Intellectual History.

Prerequisite, 683. Selected topics will be investigated in depth.

340:689. Seminar in American Urban History. 4 credits.
Prerequisite, 436 or 437. Selected topics for research and writing.

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.

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.

Sequential; prerequisite, one year of high school algebra. Sets, logic, factoring, functions, graphing, linear and quadratic equations, inequalities, progressions, permutations and combinations, binomial expansion, mathematical induction, matrices and determinants, linear programming, game theory, probability and introduction to the calculus.

345:111. Elementary Functions. 5 credits.
Prerequisite, high school algebra and trigonometry. An introduction to elementary function theory. Sets number systems; polynomial, circular, inverse trigonometric functions, binomial theorem, mathematical induction, progressions.

345:204. Astronomy. 3 credits.
The earth as a body in space, other planets; the moon and other satellites; comets, meteorites; solar systems and as motions, analysis of light; the sun and other stars, star clusters, nebulae, Milky Way, external galaxies; structure of universe.

345:205. History of Mathematics. 3 credits.
Prerequisite, 111 (or equivalent). Origin and development of mathematical ideas and processes.

345:206. Actuarial Mathematics. 3 credits.
Prerequisite 111 (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, 222. Correlation of data involving two or three variables by empirical methods; nomographic methods for evaluation of empirical formulas.

Sequential; prerequisite, 111 (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.

345:225. Differential Equations. 5 credits.
Prerequisite, 224. Methods of forming and solving important types of ordinary and some partial differential equations; applications of differential equations to science.

345:311. Abstract Algebra. 3 credits.
Prerequisite, 222. Introduction to groups, rings, integral domains, axiomatic foundation of the natural numbers, integer number system, fields, rational numbers, real and complex number systems.

345:312. Linear Algebra. 3 credits.
Prerequisite, 311. Extension of concepts relating to groups, vector spaces, matrices and determinants, linear transformations, polynomial algebra.
345:401/561. Theory of Numbers. 3 credits.
Prerequisite, 224. Development of an integral domain, prime numbers, Euler's algorithm, congruence, Euler's Phi function, quadratic residues, Pell equation, Waring's problem.

345:413. Introduction to Topology. 3 credits.
Prerequisite, 312. Introduction to topological spaces and topologies, functions, mappings, homeomorphisms, connected spaces, compact spaces, metric spaces.

345:414/514. Higher Algebra. 3 credits.
Prerequisite, 223. Mathematical induction, partial fractions, complex number system, binomial theorem, multinomial theorem, summation of series, limits, infinitesimals, convergence and divergence of series, power series, inequalities, continued fractions and applications to indeterminate equations, theory of numbers, probability, method of least squares.

345:421-422/521-522. Advanced Calculus I, II.
3 credits each quarter.
Sequential; prerequisite, 224. An introduction to the real number system, sequences and series, limits, continuity, differentiation, partial differentiation, integration, multiple integration, uniform convergence.

345:423/523. Advanced Mathematical Analysis. 3 credits.
Prerequisite, 422. Topics to include maxima and minima of several variables, transformations, improper integrals, line and surface integrals, approximate integration, complex variable.

345:425/525. Theory of Functions of a Complex Variable. 3 credits.
Prerequisite, 224. Complex numbers, analytic functions, elementary functions of a complex variable, mapping and geometry of elementary functions, theory of integrals, power series, residues and poles, conformal mapping.

345:427-428/527-528. Numerical Analysis I, II.
3 credits each quarter.
Sequential; prerequisite, 225. 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, 225. 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.

345:433/533. Laplace Transforms. 3 credits.
Prerequisite, 225. Applied properties, differentiation and integration of transforms, convolution theorem, transforms of unit, impulse, and periodic functions, applications of differential equations.

345:434/534. Vector Analysis. 3 credits.
Prerequisite, 224. 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 tensor, applications.

345:441/541. Non-Euclidean Geometry. 3 credits.
Prerequisite, 223. A historical development of the modern view in geometry emphasizing postulational systems and the introduction of coordinates in various spaces.

345:442/542. Projective Geometry. 3 credits.
Prerequisite, 312 (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.

GRADUATE COURSES

345:610. Matrix Algebra. 3 credits.
Prerequisite, 225. 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.

3 credits each quarter.
Sequential, prerequisite, 312. Study of abstract mathematical systems, axiomatic set theory, properties of groups and rings, fields, vector spaces, ideals, lattices, and sentential calculus.

345:614. Topology. 3 credits.
Prerequisite, 413. Sets, topological spaces, product and quotient spaces, embedding and metrization, compact spaces, uniform spaces.

Sequential; prerequisite, 423. 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.

Sequential; prerequisite, 423. Concepts of number systems, elementary functions, homeomorphic functions, continuity, differentiability, power series, complex integration, residue theory, analytic continuation, singularities.
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 quarter.

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.

347:450/530. PROBABILITY. 3 credits.
Prerequisite, 345:223. An introduction to frequency distributions, probability, probability distributions, expected values, sums of random variables.


Sequential; prerequisite, 345:225. 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 quarter.
Sequential; prerequisite, 345:224. 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.

GRADUATE COURSES

347:651-652-653. MATHEMATICAL STATISTICS I, II, III.
3 credits each quarter.
Sequential; prerequisite, 347:422. 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. ANALYSIS OF VARIANCE. 3 credits.
Prerequisite, 653. The general linear model in matrix notation, experimental design models, analysis of variance and covariance, variance components, response surfaces.

347:665-666. ADVANCED TOPICS IN STATISTICS I, II.
3 credits each quarter.
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, 345:225 and one course in statistics. Translation of statistical operations into machine language. Iterative procedures, recursion formulas.

347:671-672. STATISTICAL METHODS I, II.
3 credits each quarter.
Sequential; prerequisite, 345:101 (or equivalent). Scientific inference using frequency distributions, tests of significance, point and interval estimation, regression and correlation, analysis of variance, covariance, nonparametric statistics.

347:673. EXPERIMENTAL DESIGN. 3 credits.
Prerequisite, 252 (or equivalent). Fundamental principles of designs, randomized blocks, Latin squares, factorial design, 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.
347:678. NON-PARAMETRIC STATISTICS. 3 credits.
Prerequisite, 252 or 375:145 or permission. Theoretical bases and relationships among various nonparametric techniques compared with parametric ones.

352: FRENCH

352:101-102-103. BEGINNING FRENCH.
4 credits each quarter. 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.
3 credits each quarter. 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. 0 credits.
3 hours per week. 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 quarter.
Prerequisite, 203 (or equivalent). Advanced composition using French models, special attention to words and idioms, development of oral expression and conversational ability.

353:305-306-307. INTRODUCTION TO FRENCH LITERATURE. 3 credits each quarter.
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 quarter.
Prerequisite, 203 or equivalent. 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 quarter.
Prerequisite, 203 or equivalent. A continuation of the material covered in 301, 362, and 303 at a more advanced level.

Prerequisite 303 or 307 or permission. Saint’s lives, epics, courtly novels, chronicles, Renart sequences, theater. Rutebeuf. Discussion based on modern French translations.

352:409/509. RENAISSANCE LITERATURE. 3 credits.
Prerequisite, 303 or 307 or permission. Roman de la Rose, Joinville, Froissard, Companys, Charles d’Orleans, Francois Villon and the rhetoriques. Mars and Rabelais. Discussion based on modern French translations.

352:411/511. 17TH CENTURY FRENCH LITERATURE I. 3 credits.
Prerequisite, 303 or 307 or permission. The Pléade, theater, literature of the religious wars, Montaigne.

352:412/512. 17TH CENTURY FRENCH LITERATURE II. 3 credits.
Prerequisite, 303 or 307 or permission. The literary movements of the classical period and their background.

352:415/515. 18TH CENTURY FRENCH LITERATURE I. 3 credits.
Prerequisite, 303 or 307 or permission. La Fontaine, Bossuet, Racine, Boileau, La Rochefoucauld, La Bruyère, Fénelon.

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 Lacos, literature of the Revolution.

352:419/519. 19TH CENTURY FRENCH NOVEL I. 3 credits.
Prerequisite, 303 or 307 or permission. Rousseau, Stael, Chauteaubriand, 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, Concourt, 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;
apoetry: 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, Heredia,
Baudelaire.

352:425/525. 19TH CENTURY FRENCH THEATER AND
POETRY III. 3 CREDITS.
Prerequisite 303 or 307 or permission. Verlaine, Rein­
band, Mallarme, Lautreamont, Laforgue. Naturalistic
theatre: 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, Valery, Tariy, Romaines, 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, Gir­
audoux, Lenormand, Anouilh and Montherlant.

352:491-492-493. INDIVIDUAL READING IN FRENCH.
1 TO 3 CREDITS EACH QUARTER.
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 QUARTER.
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 QUARTER.
Ideas characteristic of various periods in French litera­
ture. 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 demon­
strating the ability to use essential research techniques
will be required in this course.

352:611-612-613. CONTEMPORARY FRENCH CULTURE AS
EXRESSED IN LITERATURE. 3 CREDITS EACH QUARTER.
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 literature.

352:615-616-617. INDIVIDUAL READING AND RESEARCH
SEMINAR. 1-3 CREDITS EACH.
Special studies and methods of research.

353:690. THESIS WRITING. 3-9 CREDITS.

353: GERMAN

353:101-102-103. BEGINNING GERMAN.
4 CREDITS EACH QUARTER. SEQUENTIAL.
Reading, speaking, writing and listening comprehen­
sion, intensive drill in pronunciation, short stories, out­
side reading and/or supplementary work in the Lan­
guage Laboratory.

353:201-202-203. INTERMEDIATE GERMAN.
3 CREDITS EACH QUARTER. SEQUENTIAL.
Prerequisite, 103 or equivalent. Grammar review, prac­
tice in reading, writing, speaking and listening compre­
hension; short stories, plays, novels on intermediate
level, outside reading and/or supplementary work in the
Language Laboratory.

353:205. GERMAN READINGS FOR NON-MAJORS. 0 CREDITS.
3 HOURS PER WEEK. 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, Durrenmatt,
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 major in German.

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 QUARTER.
Prerequisite, 203 (or equivalent). Advanced composi­
tion using German models, special attention to words
and idioms, development of oral expression and con­
versational ability.

353:305-306-307. INTRODUCTION TO GERMAN
LITERATURE. 3 CREDITS EACH QUARTER.
Prerequisite, 203 (or equivalent). Introduction to the
study of German literature. Readings and class discus­
sions in German of representative works.
353:403-404-405. **ADVANCED GERMAN COMPOSITION AND CONVERSATION.** 3 credits each quarter.
  Prerequisite, 303 (or equivalent). A continuation of the material covered in 301, 302 and 303 at a more advanced level.

Prerequisite, 303 or equivalent. The generation of Winckelmann, Lessing, Klopstock, Herder the young Goethe, and others. Study of the Marchen, folklore and Germanic mythology.

353:420/520. **THE AGE OF GOETHE II.** 3 credits.
Prerequisite, 303 or equivalent. Faust, selections from parts I and II. Ballads of Goethe and Schiller.

Prerequisite, 303 or equivalent. Romanticism in the poetry of Goethe, Novalis, Eichendorf, Heine, and others. Study of the works of Struempfel, Stifter, Keller, Meyer, Storm, and others.

353:431/531. **CLASSICAL GERMAN DRAMA.** 3 credits.
Prerequisite, 303 or equivalent. Representative works of the major classical dramatists including Lessing, Goethe, (except Faust) Schiller, Kleist, Grillparzer, and others.

353:432/532. **DRAMA OF SOCIAL CRITICISM.** 3 credits.
Prerequisite, 303 or equivalent. Representative works of the major dramatists of social criticism including Strum and Zang dramatists, Büchner, Hebbel, Hauptmann and Wedekind.

353:433/533. **TRENDS IN MODERN DRAMA.** 3 credits.
Prerequisite, 303 or equivalent. Representative works of major modern dramatists including Hofmannsthal, Kaiser, Brecht, Zuckmayer, Dürrenmatt, and Borchert.

Prerequisite, 303 or equivalent. 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 equivalent. Reading and discussion of works representative of the period, including those of Droste-Hülshoff, Stifter, Keller, Meyer, Storm, and others.

353:437/537. **THE MODERN SHORT STORY.** 3 credits.
Prerequisite, 303 or equivalent. Reading and discussion of representative works of Hauptmann, Schnitzler, T. Mann, Kafka, Zweig, Borchert, Böll, and others.

Prerequisite, 303 or equivalent. The end of the 19th century 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, Böll, Wedekind, and others.

353:440/540. **TWENTIETH CENTURY GERMAN LITERATURE II.** 3 credits.
Prerequisite, 203 or equivalent. 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 works of Hesse, Kafka, Döblin, Werfel, and others.

355:441/541. **TWENTIETH CENTURY GERMAN LITERATURE III.** 3 credits.
Prerequisite, 203 or equivalent. 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 quarter.
Prerequisite, permission.

355: ITALIAN

Prerequisite, 303 or equivalent. 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 works of Hesse, Kafka, Döblin, Werfel, and others.

355:201-202-203. **INTERMEDIATE ITALIAN.** 3 credits each quarter. Sequential.
Prerequisite, 103 (or equivalent). Recent trends as reflected in such writers as Zweig, Zuckmayer, Dürrenmatt, Böll, Frisch, Grass, and others.

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.
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.** 4 credits each quarter. Sequential.
Prerequisite, 303 or equivalent. 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 works of Hesse, Kafka, Döblin, Werfel, and others.

357:201-202-203. **INTERMEDIATE RUSSIAN.** 3 credits each quarter. 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.
level, outside reading and/or supplementary work in the Language Laboratory.

357:301-302-303. RUSSIAN COMPOSITION AND CONVERSATION. 3 credits each quarter.
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 quarter.
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 quarter.
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 quarter.
Prerequisite, 405 (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 quarter.
Prerequisite, 405 (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 Evtuhenko.

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 quarter.
Prerequisite: permission.

358: SPANISH

358:101-102-103. BEGINNING SPANISH. 4 credits each quarter. Sequential.
Reading, speaking, writing and listening comprehension; intensive drill in pronunciation, short stories, outside reading and/or supplementary work in the Language Laboratory.

358:201-202-203. INTERMEDIATE SPANISH. 3 credits each quarter. Sequential.
Prerequisite, 103 (or equivalent). Grammar review, practice in reading, writing, speaking and listening comprehension; short stories, plays, novels on intermediate level, outside reading and/or supplementary work in the Language Laboratory.

358:301-302-303. SPANISH COMPOSITION AND CONVERSATION. 3 credits each quarter.
Prerequisite, 203 (or equivalent). Advanced composition using Spanish models, special attention to words and idioms, development of oral expression and conversational ability.

358:305-306-307. INTRODUCTION TO SPANISH AND SPANISH-AMERICAN LITERATURE. 3 credits each quarter.
Prerequisite, 203 (or equivalent). Direct reading and discussion, in Spanish, of novels, short stories, and drama in the modern idiom of Spain, Puerto Rico and the 17 Spanish-American republics.

358:309. 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; its phonology and grammar; (c) the dialects, or regional varieties, of Spanish; (d) applied linguistics, with special emphasis on the problems likely to be met by prospective teachers of Spanish. Lectures and discussion. This course should be taken by all Spanish majors.

358:401. COMMERCIAL CORRESPONDENCE IN SPANISH. 5 credits.
Prerequisite, 203 (or equivalent). Translation of business letters from Spanish into English and from English into Spanish, with emphasis on modern phraseology in commercial correspondence.

358:403-404-405. ADVANCED SPANISH COMPOSITION AND CONVERSATION. 3 credits each quarter.
Prerequisite, 303 (or equivalent). A continuation of the material covered in 301, 302, and 303 at a more advanced level.

Prerequisite, 203 (or equivalent). Reading and discussion of representative novels and short stories with special emphasis on the works of Cervantes, Drama, poetry and essays of the sixteenth, seventeenth, and eighteenth centuries will be studied. Conducted in Spanish.

Prerequisite, 203 (or equivalent). Reading discussion and lectures. Study of Neoclasicismo, Romanicismo, 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 quarter.
Prerequisite, 203 (or equivalent). Reading and discussion of the most representative writers of Spain's literary Renaissance since 1940. Representaive poetry, drama, novels, and short stories will be studied. Conducted in Spanish.
Prerequisite, 203 (or equivalent). Reading and discussion of representative Spanish-American Literature from discovery to the present time. Oral and written reports. Conducted in Spanish.

Prerequisite, 203 (or equivalent). 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 quarter.
Prerequisite, permission.

GRADUATE COURSES

358:601-602-603. MEDIEVAL AND RENAISSANCE SPANISH LITERATURE. 3 credits each quarter.
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 LINGUISTS. 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 quarter.
Reading and discussion of representative writers from the Renaissance to the late Baroque period. Studies in the essay, the novel, the theater, the poetry and the philosophic writings of the modern period. Conducted in Spanish.

358:613-614-615. SEMINAR ON SPANISH AMERICAN LITERATURE. 3 credits each quarter.
Studies in representative writers preceding the War for Independence. Reading and discussion of various genres and authors representing significant literary developments of the modern period. Conducted in Spanish.

358:617-618-619. SEMINAR ON PRESENT-DAY SPANISH AMERICAN LITERATURE. 3 credits each.
Reading and discussion of contemporary writers with emphasis on the theatre, the novel and the short story. Conducted in Spanish.

358:621-622-623. SEMINAR ON PRESENT-DAY PENINSULAR SPANISH LITERATURE. 3 credits each.
Studies in representative present-day writers with analyses and discussions of the novel (621), the theater (622) poetry and short stories (623). Conducted in Spanish.

358:651-652-653. 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-Socratic 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.
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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 "is-ought" dichotomy, the relation of language to ethics as well as types of ethical 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, Altbeker, 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.

360:468/568. SEMINAR: SPECIAL PROBLEMS IN PHILOSOPHY OF SCIENCE. 4 credits.
Prerequisite, permission of department member.

360:471. 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 quarter.
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 Patrists through the breakup of Scholasticism.
360:613. Renaissance and Early Modern Philosophy.  4 credits.  
Prerequisite, 612. Continuation of 612, from Renaissance and Early Modern Philosophy 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, Gardiner, et al.

360:618. Analytic Philosophy.  4 credits.  
Analysis and discussion of the analytic approach to the problems of referring, truth, the relation of language to metaphysics, meaning, and the concept of a person; particular emphasis upon determining the motivation, contribution, and value of the approach. Reading covering the works of (the late) Wittgenstein, Moore, Austin, Anscombe, Geach, Kenny, Vesey, 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 positivism, phenomenology, existentialism, logical analysis, naturalism and pragmatism.

360:676. Logical Theory.  4 credits.  
An introduction to the main problems typically encountered in logical theory: Logic andontology, alternative logics, truth and analyticity, induction, special problems concerning the interpretation of the conditional and modal logics. It is suggested that graduate students be familiar with the material covered in undergraduate logic (274) before taking this course.

360:680. Seminar.  4 credits.
360:681. Seminar.  4 credits.
360:682. Seminar.  4 credits.

365: Physics

Prerequisites, high-school algebra and trigonometry, or 345:111 as a corequisite. General physics; emphasizes such unifying concepts of contemporary physics as conservation laws, symmetry principles and the nature of particles and fields; Newtonian mechanics; electricity and magnetism; interference and diffraction of waves; the nature of heat, space and time in the theory of relativity, quantum mechanics of atomic phenomena; recent developments in the study of elementary particles.

Corequisite, 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.

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 electricity and magnetism. 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.

Corequisite, 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.

365:301. Elementary Modern Physics.  4 credits.
Prerequisite, 203 or permission of the instructor. Special relativity, introduction to quantum physics, atomic spectra, topics in nuclear and solid state physics.

365:311-312-313. Colloquium.  1 credit each quarter.

365:397-398-399. Undergraduate Research I, II, III.  1 to 6 credits each quarter.
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, 106 or 203. A study of the origin and evolution of the major principles and concepts that characterize contemporary physics.

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, 345:224. Electron tubes, semiconductors, and their utilization in circuits. Introduction to the mathematical analysis of these circuits.


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, semiconductors and other materials. Photoelectric effect. Charge on the electron.

365:420/520. Optics. 4 credits.

Prerequisite, 203 and 345:224. 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.

Prerequisites, 203 and 345:224. 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.


Prerequisite, 203; corequisite, 345:225. 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. Lagranges equations, the special theory of relativity.


Prerequisite, 203; corequisite, 345:225. Coulomb's law; Gauss's law; dielectrics; Poisson and Laplace equations; electrical images; magnetostatics; Kirchhoff's laws; chemical and thermal electromagnetic 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, 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, 203. An introduction to the concepts of polymer molecular dimensions and configurations, rubber elasticity, diffusion and viscosity of polymers, and the mechanical properties of polymers.

365:470/570. Introduction to Solid State Physics. 4 credits.

Prerequisites, 301; 345:225 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.


Prerequisites, 413; 345:225 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; 345:225 or permission of instructor. A brief introduction to the concepts of quantum mechanics; correspondence principles, uncertainty principle, state functions, Schroedinger's equation, WKB approximation, wave packets, continuum states, postulates of quantum mechanics, central potentials, hydrogen atom.
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

365:601-602-603. ATOMIC AND NUCLEAR PHYSICS
I, II, III. 3 credits each quarter.
Prerequisites, 301 or 407 and 345:225, or permission of instructor. An expository and analytical treatment of the fundamental principles which operate to yield the observed complex behavior of matter. Introductory quantum mechanics, free particle quantum mechanics, the one-electron atom. Special theory of relativity, Radiation and radiative transitions. Pauli principle and exchange symmetry. Atomic spectroscopy, Quantum statistics, X-rays. Band theory of solids. Basic properties of nuclei. Particle scattering and nuclear forces. Systematics of nuclear stability and nuclear models.

365:611-612-613. PHYSICAL PROPERTIES OF MATTER
I, II, III. 3 credits each quarter.
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.

365:621-622-623. ATOMIC AND MOLECULAR SPECTRA
I, II, III. 3 credits each quarter.
Prerequisites, 301; 345:225 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 spin and multiple structure; the building-up principle of molecular bands, and development of theory; rotational, vibrational, and electronic bands; Raman effect, isotopic spin, intensity of bands; methods of determining the molecular constants from wave number measurements.

2 credits each quarter.
Prerequisite, 345:225 or permission of instructor. Study of relations between the physical behavior of elastomers, plastics, and fibers and their molecular constitution.

365:635-636-637. PHYSICS OF POLYMERS LABORATORY
I, II, III. 2 credits each quarter.
Prerequisite, 201, corequisites, 631-632-633. Selected laboratory experiments to illustrate the principles and methods discussed in courses 631-632-633.

365:651-652-653. THEORETICAL CLASSICAL PHYSICS
I, II, III. 4 credits each quarter.
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 change, 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 quarter.
Prerequisites, 430 and 345:225. 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 quarter.
Prerequisites, 433, 443, 345:225 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, Hamiltonian operators; eigenvalues and eigenfunctions; angular momentum; scattering theory; Green's functions; Born approximation; spin; Pauli matrices; symmetry properties; parity; perturbation methods; spin-orbit interactions; Clebsch-Gordon coefficients; exclusion principle; T-R invariance; S-matrix.

365:684. ADVANCED NUCLEAR PHYSICS. 4 credits.
Prerequisites, 603, 683. Quantum mechanics applied to the nucleus. Interaction of radiation with the nucleus, nuclear scattering, nuclear reactions; energy levels of nuclei.

365:685-686-687. SOLID STATE PHYSICS
I, II, III. 3 credits each quarter.
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. 3 credits.
Prerequisite, 100. An examination of institutions, processes and intergovernmental relations at the state and local level.

370:220. AMERICAN FOREIGN POLICY: PROCESS AND PROBLEMS. 4 credits.
An examination of American foreign policy with emphasis on the policy-making process; public opinion and other limitations on policy; specific contemporary problems in selected areas.

370:302. AMERICAN POLITICAL IDEAS. 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-Socrates 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 organizations 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 Adviser’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.

370:422. 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.

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 POLITICAL SCIENCE MAJORS. 5 credits.
Prerequisite, 9 credits of Political Science, or permission. Selected topics will be investigated in depth. Emphasis on topics 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 quarter.

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.
Prerequisites, 141 and 110:211. 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.

375:207. PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE. 4 credits.
Prerequisite, 141. Development of the individual from birth through the adolescent period; emphasis on needs and problems of typical children and adolescents; preparation of case histories.

375:310. EXPERIMENTAL PSYCHOLOGY. 4 credits.
Prerequisites, 147, 145 or permission. 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.

375:329. PHYSIOLOGICAL PSYCHOLOGY. 4 credits.
Prerequisite, 147. 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.

375:403/503. 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.

375:407/507. PSYCHOLOGICAL TESTS AND MEASUREMENTS. 4 credits.
Prerequisites, 141 and a statistics course or permission. The nature, proper use and construction of tests and measurements in industry, government and education. Aptitude and achievement tests, rating scales, attitude and opinion analysis.

375:409/509. INTRODUCTION TO THE CLINICAL METHOD. 4 credits.
Prerequisite, 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.
Psychology in the pre-scientific period and the details of the development of systematic viewpoints in the 19th and 20th centuries.

375:420/520. Human Factor. 4 credits.
Prerequisites, 141, 18 credits in Psychology. Definition, analysis, and solution of specific selected Human factors. Design problems.

375:421. Advanced Industrial Psychology. 5 credits.
Prerequisites, 160 and 145. Theoretical and social functions of Industrial Psychology.

375:430/530. Abnormal Psychology. 5 credits.
Prerequisite, 9 credits in Psychology. Syndromes, etiology, diagnosis and treatment of the major psychopathological conditions ranging from transient maladjustments to the psychoses.

375:440-441-442. Honors Seminar in Psychology.
3 credits each quarter.
Sequential; prerequisite, psychology major, Senior standing and permission.

GRADUATE COURSES


Prerequisites, 145 or permission. Basic theory of hypothesis testing, chi square, analysis of variance, regression analysis and correlation.

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 347:872 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.
Prerequisites, 151 and 307. 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 430. 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, 430/530 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 of Projective Techniques. 3 credits.
Prerequisites, 430, 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 hours 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 quarter.
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.
Prerequisite, 602 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, experientially-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 in Industrial Psychology. 4 credits.
(May be repeated for a total of 8 credits.)
Prerequisite, 602 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. Social-Industrial 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.

Prerequisite, 602, 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 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 permission. Consideration of scales of measurement, use of curve fitting, psychophysical methods and psychological scaling methods.

375:783. Psychological Experimental Design. 3 credits.
Prerequisite, 603 or permission. Theory and application of statistical tests of significance to more complex psychological experimental designs than in 603.

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 underlie an understanding of social behavior.

385:150. 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.

385:151. 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.

385:256. New World Prehistory. 4 credits.
Prerequisites, 150 or 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.

385:257. Indians of South America. 4 credits.
Prerequisites, 150 or 100, or permission. A survey of the aboriginal peoples of South America, with emphasis on culture areas and continuity of culture patterns.

385:270. Poverty in the Inner City. 4 credits.
For persons wishing to understand and/or intend to work in inner city and other poverty areas of the U. S.—a survey. This course does not meet requirements for Sociology majors.

385:276. Introduction to Social Welfare. 5 credits.
Prerequisite, 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.

385:301. Methods of Social Research. 3 credits.
Prerequisite, 100 or permission. A combination lecture and laboratory course requiring at least five laboratory hours per week. Research design, data gathering techniques and statistical procedures. Required of majors.
385:302. METHODS OF SOCIAL RESEARCH. 3 credits.
Prerequisite, 301, continuation of 301. Required of majors.

385:303. METHODS OF SOCIAL RESEARCH. 3 credits.
Prerequisite, 302, continuation of 301 or 302. 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, 160 or permission. Introduction to demographic analysis; the numbers, distribution, characteristics, and trends of U. S. and world population.

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.

385:387. MAGIC, MYTH AND RELIGION. 4 credits.
Prerequisite, 100 or 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.

385:373. 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.

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 hours 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 theorists, 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, deviance, 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, stereotypes, and ways of coping with inter-group tensions.

385:430/530. SOCIAL STRUCTURES AND PERSONALITY. 4 credits.
Prerequisite, 100 or permission. Examination of the inter-relationships between position in society and personality characteristics. Personality will be treated as both a result and a determinant of social structure and process.
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 hours 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.

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 hours 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.

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, 301, 302 and 303, or permission. Elementary Fortran programming for social science research application; preparation, storage and processing of data; use of stored program libraries and review of selected other applications such as simulation models and data banks.

385:455/555. Culture and Personality. 4 credits.
Prerequisites, 100 and 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.

385:459/559. Facts and Values in Culture. 4 credits.
Prerequisites, 100 and 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.

385:461/561. Language and Culture. 4 credits.
Prerequisite, 100, 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.

385:463/563. Types of Kinship and Social Organization. 4 credits.
Prerequisites, 100 and 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.

385:476. Field Experience in a Social Agency. 3 credits.
Prerequisite, 373 or permission. Individual placement in selected community agencies for supervised experience in casework, groupwork, corrections, and similar fields. Primarily for senior majors.

385:477. Field Experience in a Social Agency. 3 credits.
Prerequisite, 476, continuation of 476. Courses must be taken consecutively to receive credit.

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

Advanced research methods including advanced statistical techniques.

An intensive analysis of problems in a research design similar to those which will be encountered in the preparation of a master's thesis.

Prerequisite, 600 and 601, or permission. Theories of social attitudes and techniques for their measurement.

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.
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.

Prerequisite, permission. Theory of small group relationships and discussion of empirical findings about primary groups.

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.

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.

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.

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.

Prerequisite, 630. Description, analysis, and interpretation of political behavior, through the application of sociological concepts.

Prerequisite, graduate standing. 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 hours 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.

Prerequisite, 30 hours 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.
385:651. SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS. 4 credits.

385:673. SEMINAR IN SOCIAL WORK METHODOLOGY. 4 credits.
An examination of the concepts and methods utilized in contemporary social work practice.

394: POLYMER SCIENCE
394:401. INTRODUCTION TO APPLIED POLYMER SCIENCE. 2 credits.
Lectures and laboratory. Prerequisite, one year of organic chemistry, or permission. The use of coal and petroleum products as raw materials for the polymer industry is discussed. Typical industrial processes are described, and the preparation, and properties of both natural, and synthetic polymers are outlined, and supplemented with suitable laboratory experiments.

394:402. INTRODUCTION TO ELASTOMERS. 2 credits.
Lectures and laboratory. Prerequisite, 401 or permission. The history and preparation of natural rubber are discussed. The methods utilized for the production of all synthetic rubbers are outlined. Typical laboratory experiments are included to show the effects of compounding, processing, vulcanization, and testing on rubber products.

394:403. INTRODUCTION TO PLASTICS. 2 credits.
Lectures and laboratory. Prerequisite, 401 or permission. The plastics industry and its manufacturing methods are discussed. Plastics compounding for both thermoplastic and thermosetting materials is discussed with emphasis on processing and testing illustrated by typical laboratory experiments.

394:407. POLYMER SCIENCE. 3 credits. (2-3)
Prerequisite, 315:314, or 365:301, or 420:305, or permission. The principles of polymerization processes and the relationships between molecular structures and physical behavior of polymers are dealt with.

394:408. POLYMER SCIENCE. 3 credits.
Prerequisite, 315:112 or 128 or 133, or permission. The topic of molecular weight distributions of macromolecules is discussed along with the methods of determination of molecular weights. In addition, the relationships between the physical behavior of polymers and their molecular structure is discussed.

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 quarter.
Prerequisite, permission. A study of the basic principles and methods involved in the technology of polymeric materials, including testing, characterization, processing, 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 quarter.
Prerequisites, 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, 394:710. 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.

398:611. 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.

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.

398:647. 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.

This seminar is designed to explore the significance of science and technology on the quality of the environment in the urban community. The impact of biology, industrial technology and medicine, on the ethics, ecology and social environment of the urban community of the 20th century are the areas of central focus.

398:689. Individual Studies. 2-6 credits. (May be repeated for a total of 6 credits.)
Directed individual readings or research focused on a specific area or topic.

398:690. Internship in Urban Studies. 2-6 credits.
Prerequisite, permission. A work experience program in which the student is expected to engage in meaningful research, policy planning and administrative operations in selected urban governments, state and federal governments and urban agencies, under the combined supervision of the employing agent and the faculty of the Urban Studies Department.
The College of Engineering

410: GENERAL ENGINEERING

410:180. Engineering Design. 2 credits. (2-0)
Introduction of the freshman engineering student to problem-solving techniques in Engineering design. Required of all entering Engineering freshmen.

410:120. Engineering Design: Chemical Engineering. 2 credits. (2-0)
Introduction to the Engineering Profession. Required only of entering Chemical Engineering freshmen.

410:130. Engineering Design: Civil Engineering. 2 credits. (2-0)
Introduction to the Engineering Profession. Required only of entering Civil Engineering freshmen.

410:140. Engineering Design: Electrical Engineering. 2 credits. (2-0)
Introduction to the Engineering Profession. Required only of entering Electrical Engineering freshmen.

410:160. Engineering Design: Mechanical Engineering. 2 credits. (2-0)
Introduction to the Engineering Profession. Required only of entering Mechanical Engineering freshmen.

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. Process Calculation I. 3 credits. (3-0)
Introduction to the material balance and other fundamental concepts as applied to the solution of chemical engineering problems.

420:201. Process Calculations II. 3 credits. (3-0)
Prerequisite, 200. Introduction to the energy balance and to the solution of chemical engineering problems requiring material and energy balances.

420:220. Staged Operations. 4 credits. (4-0)
Prerequisite, 201. The graphical and analytical applications of equilibrium and material balance considerations to the solution of multi-stage processes.

420:305. Materials Science. 3 credits. (3-0)
Corequisite, 315:322. The study of the atomic and molecular structure and their relationship to the behavior of engineering materials, under thermal, chemical, mechanical, nuclear, and electrical stresses.

420:310. Chemical Process Industries. 3 credits. (3-0)
Prerequisite, 201. A study of the processes used to manufacture basic chemicals. Included are raw materials, processing sequences and economic factors.

420:321. Transport Phenomena I. 4 credits. (4-0)
Prerequisite, 220 and 345:225. Theory and application of momentum transfer in chemical engineering.

420:322. Transport Phenomena II. 4 credits. (4-0)
Prerequisite, 321. Theory and application of energy transfer and simultaneous energy and momentum transfer in chemical engineering applications.

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, 423. Experiments in chemical engineering operations. Emphasis is on collection and analyses of data and report writing.

420:416. Unit Operations. Laboratory II. 2 credits. (0-2)
Prerequisite, 423.

420:417. Unit Operations. Laboratory III. 2 credits. (0-2)
Prerequisite, 423.

420:423. Transport Phenomena III. 4 credits. (4-0)
Prerequisite, 322. Theory and application of mass transfer phenomena. Includes evaporation, distillation, absorption, crystallization and diffusional operations.

420:425. Thermodynamics I. 3 credits. (3-0)
Prerequisites, 201, 315:315. A study of the fundamental laws of thermodynamics as applied to chemical processes.

420:426. Thermodynamics II. 2 credits. (2-0)
Prerequisite, 425. Continuation of 425 and an introduction to statistical thermodynamics.

420:430. Reaction Kinetics. 4 credits. (4-0)
Prerequisite, 423. Study of non-equilibrium processes. Reaction mechanisms, rate equations and reactor design as applied to both homogenous and heterogenous systems.
420:435. Process Control. 3 credits. (3-0).
Prerequisite or corequisite, 423, 345:225. The study of the response of process systems, controllers, sensing elements, and application to control systems design.

420:440. Process Economics. 3 credits. (3-0)
Corequisite, 423. Economic analyses of chemical process, equipment selection and cost estimation.

420:441. Plant Design I. 3 credits. (3-0)
Prerequisite, 440. Chemical plant equipment design, plant layout, site selection.

420:442. Plant Design II. 2 credits. (0-2)
Prerequisite, 441. Chemical plant design project.

420:443. Plant Trip. 1 credit. (0-1)
Prerequisite, 440. Visitation to typical chemical process industries. Critical inspection and discussion of facilities.

1 to 4 credits. (0-1 to 4)

**GRADUATE COURSES**

420:600. Momentum Transport I. 3 credits. (3-0)
Prerequisite, 423 or permission. The momentum, continuity, and energy equations. Exact and approximate solutions using vector and tensor notation. Applications to typical laminar flow systems.

420:605. Energy Transport I. 3 credits. (3-0)
Prerequisite, 423 or permission. Conduction and forced convection heat transfer. Analytical and graphical solutions.

420:610. Diffusional Operations. 3 credits (3-0)
Prerequisite, 423 or permission. Discussion of molecular mass transport, forced and natural convection as applied to mass transfer the analogies between mass and 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.

420:612. Distillation. 3 credits. (3-0)
Prerequisite, 423 or permission. Multicomponent calculational techniques applied to the design of distillation equipment. Extractive and azeotropic distillation.

420:615. Advanced Reaction Kinetics I. 3 credits. (3-0)
Prerequisite, 430 or permission. Kinetics of homogeneous systems. Reactor design. Non-ideal flows.

420:620. Advanced Chemical Engineering Thermo I. 3 credits. (3-0)
Prerequisite, 425 or permission. Discussion of the law of thermodynamics. Prediction and correlation of thermodynamic data. Phase and reaction equilibria.

420:625. Analog Computation. 3 credits. (3-0)
Prerequisite, 345:225. Discussion of the use of analog computation in chemical engineering including programming and operational techniques.

420:626. Advanced Calculation Methods I. 3 credits. (3-0)
Prerequisite, 345-225 or permission. Discussion of methods used to develop mathematical models for chemical engineering problems and their analytical solutions.

420:627. Advanced Calculation Methods II. 3 credits. (3-0)
Prerequisite, 345-225 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, stability criteria. Application to control of simple chemical process.

420:635. Chemical Engineering of Polymers I. 3 credits. (3-0)
Prerequisite, 423 or permission. Study of the plastics industry with emphasis on the application of common unit operations in the production of plastics.

420:640. Solids Processing. 3 credits. (3-0)
Prerequisite, 423 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving treatment of particulate solids.

420:650. Topics in Design. 3 credits. (3-0)
Prerequisite, 345:225 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.

420:670. Water Pollution Control I. 3 credits. (3-0)
Prerequisite, permission. Waste treatment methods as applied to the chemical process industries.

420:680. Air Pollution Control. 3 credits. (3-0)
Prerequisite, permission. Basic methods and applications of air pollution control in the chemical process industries.

420:690. 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.  
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.  
Prerequisite, 600. Rheological behavior of non-Newtonian fluids. Viscometry. Applications to engineering design.

420:706. ENERGY TRANSPORT II. 3 credits.  

420:713. SPECIAL TOPICS IN MASS TRANSFER. 3 credits.  
Prerequisite, 345-225 or permission. Topics in advanced mass transfer operations of chemical engineering such as multicomponent distillation, absorption, extraction, leaching and diffusion.

420:716. ADVANCED REACTION KINETICS II. 3 credits.  

420:721. ADVANCED CHEMICAL ENGINEERING THERMO II. 3 credits.  
Prerequisite, 620. An introduction to statistical and non-equilibrium thermodynamics with application in chemical engineering.

420:728. SPECIAL TOPICS IN ADVANCED CALCULATIONS. 3 credits.  
Prerequisite, 345:225 or permission. Advanced calculation techniques applied to the solution of complex problems in chemical engineering operations.

420:731. PROCESS DYNAMICS II. 3 credits.  
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.  
Prerequisite, 635. Advanced concepts of mass and energy transport involving the manufacture and uses of plastics.

420:771. WATER POLLUTION CONTROL II. 3 credits.  
Prerequisite, 670. 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

430:231. SURVEYING I. 4 credits. (3-1)  
Principles of plane surveying. Use of tape, level and transit. Computation of areas. Field problems involving measurement of horizontal and vertical distances and angles.

430:301. ENGINEERING MECHANICS I. 4 credits. (4-0)  

430:302. ENGINEERING MECHANICS II. 4 credits. (4-0)  
Prerequisite, 301; corequisite, 345:225. Kinetics of particles, and rigid bodies. Force, mass and acceleration; work and energy; momentum and impulse methods. Vibrations. Stresses and deformations caused by axial, torsional and flexural force systems.

430:303. ENGINEERING MECHANICS III. 4 credits. (3-1)  

430:304. MECHANICS I. 4 credits. (4-0)  
Prerequisite, 365:201; corequisite, 345:225. 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 can 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. 4 credits. (4-0)  
Prerequisite, 303. Analysis of roof trusses, null bents and bridge trusses. Fixed and moving loads. Influence lines.

430:307. THEORY OF STRUCTURES II. 4 credits. (4-0)  
430:321. ENVIRONMENTAL ENGINEERING I. 4 credits. (4-0)
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)

430:323. ENVIRONMENTAL ENGINEERING III. 4 credits. (4-0)
Prerequisite, 310:177 and 322. 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.

430:332. SURVEYING II. 4 credits. (3-1)
Prerequisite, 231. Precise leveling, triangulation, topographic surveying, astronomic observations pertinent to surveying, horizontal and vertical alignment of transportation routes, earthwork computations.

430:341. WATER RESOURCES ENGINEERING I. 3 credits. (3-0)
Prerequisite, 460:310. Introduction to hydrologic measurements, runoff computations, groundwater flow and storage water law, reservoir design, frequency analysis, economy of water resources development, planning for water resources development.

430:342. WATER RESOURCES ENGINEERING II. 3 credits. (2-1)
Prerequisite, 341. Introduction to hydraulic components of engineering projects and structures; flow in closed conduits and open channels; dams, spillways, hydraulic machinery, water power, river mechanics, flood control. Laboratory includes individual assignment of model study of hydraulic structures.

430:350. URBAN PLANNING. 4 credits. (4-0)
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 I. 4 credits. (4-0)
Prerequisite, 350. 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. TRANSPORTATION ENGINEERING II. 4 credits. (3-1)

430:401-402. STEEL DESIGN I AND II. 3 credits each quarter.

430:403-404. REINFORCED CONCRETE DESIGN I AND II. 3 credits each quarter.

430:405-406/505-506. ADVANCED MECHANICS OF MATERIALS I AND II. 4 credits each quarter.

430:411. SOIL MECHANICS. 4 credits. (3-1)

430:412. FOUNDATIONS. 4 credits. (3-1)

430:418/518. ENGINEERING GEOPHYSICS. 3 credits. (2-1)
Prerequisites, 411 and 537:101. 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.

430:425. 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, 332. 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, 411. 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. Simplicity of model studies, theoretical aspects of hydraulic structures, river engineering, coastal hydraulics, stream channel mechanisms.

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; eigen-value 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)

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.

GRADUATE COURSES

430:601-602. THEORY OF ELASTICITY I AND II. 3 credits each quarter. (3-0)

430:603-604. THEORY OF PLASTICITY I & II. 3 credits each quarter. (3-0)
Prerequisite, 601. State of stress and strain; theories of strength; plastic stress-strain relations; problems in plastic flow; strain hardening problems; bending of plates; extremum principles; special topics and 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.

430:606. SHELL STRUCTURE. 3 credits. (3-0)

430:608-609. ADVANCED THEORY OF STRUCTURES I AND II. 3 credits each quarter. (3-0)

430:611. ADVANCED SOIL MECHANICS I. 3 credits. (3-0)
Prerequisite, 412. 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-strengthening interaction theory and applications to foundation 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.

430:617. 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.

430:620. Sanitary Engineering Problems. 3 credits.
Prerequisite, 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.

430:621-623. Industrial Waste Treatment I, II and III. 3 credits each quarter.
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)

430:642. Multiphase Flow. 3 credits. (3-0)

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.

430:645. 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.

430:646-647. Theory of Waves I & II. 3 credits each quarter. (3-0)

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; elast-plastic deformations; minimum-weight design; grids and arches.

430:652. 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.

430:653-654. Elastic Stability I & II. 3 credits each quarter. (3-0)
Prerequisite, 506. Buckling of beam-columns, bars and frames; torsional buckling; inelastic buckling; energy approach and energy methods; buckling of rings, curved bars and arches; buckling of thin plates and shells; applications; special problems.

430:655. Prestressed Concrete. 3 credits. (3-0)

430:657-658. Dynamics of Structures I and II. 3 credits each quarter. (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. Mem-

430:659. DYNAMICS OF PLATES AND SHELLS. 3 credits.
(3-0)
Prerequisites, 460:630, 606. Vibration of membranes, plates and shells with various boundary conditions. Dynamic response of plates and shells subjected to external dynamic forces. Special problems.

430:660. 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.

430:661-662. ADVANCED ENGINEERING MATERIALS I AND II. 3 credits each quarter. (3-0)
Prerequisite, permission. The behavior of solid materials used by engineers. Principles which explain, describe, and define such behavior.

430:681. SITE PLANNING AND LAND DEVELOPMENT. 3 credits. (3-0)
Prerequisite, permission. A case study of site planning using systems analysis; feasibility for development or re-development; the restraints imposed by political, urban and regional relationships.

430:682. 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.

430:685. TRAFFIC CONTROL ENGINEERING. 3 credits. (3-0)
Prerequisite, permission. Information retrieval and analysis of human and vehicular characteristics; the roadway element; system control and optimization of highways and intersections; planning and design of new traffic facilities including ways and terminals.

430:691. SPECIAL PROBLEMS I. 3 credits.
Prerequisite, graduate standing and permission. Supervised research or directed individual study in the student's major field. Topic selected by the student, subject to approval by advisor.

430:692. SPECIAL PROBLEMS II. 3 credits.
Prerequisite, 691 and permission. Continuation of 691. Individual research should lead to final report of publishable quality.

430:699. MASTER'S THESIS. 1-9 credits.
Prerequisite, permission. Research and thesis on some suitable topic in civil engineering as approved by the department. Defense of thesis in final examination.

430:781. LAND USE MODELS. 3 credits.
Prerequisite, permission. An introduction into land use models.

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 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, 345:224. Fundamentals of circuit analysis including loop and nodal methods, phasor techniques, resonance phenomena, and polyphase circuits.

440:234. CIRCUITS II. 3 credits. (3-0)

440:321. PHYSICAL ELECTRONICS I. 3 credits. (3-0)

440:331. CIRCUIT FUNDAMENTALS. 3 credits. (3-0)
Prerequisites, 345:225, 365:203, or 103, 445:160. A course in circuit analysis for non-EE majors including loop and modal 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,
ohmeters, 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 measure­
ments.

440:342. Electrical Measurements III. 4 credits.
(3-0)
Prerequisite, 341. Analysis and characteristics of tem­
perature and displacement transducers.

440:345. Illumination. 3 credits. (3-0)
Fundamentals of illumination and principles under­
lying specifications and designs for adequate electrical
lighting.

440:351. Electromagnetic Fields I. 3 credits. (3-0)
Prerequisite, 345:225. 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 electro­
magnetic fields with applications including particle dy­
namics 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, accelerat­
ing 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 fre­
hency applications. Networks for transmission. Lab­
oratory.

440:365. Electronics I. 4 credits. (3-1)
Prerequisite, 234. Physics of electron devices. Semi­
conductors, 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. Applica­
tions including amplifiers, oscillators, timing circuits, and
industrial electronic equipment.

(3-0)
Prerequisite, 336, 353. Introduction to servomech­
anisms and feedback principles. Modeling and response
of feedback control systems. Stability analysis of linear
systems.

(2-1)
Prerequisite, 371. Synthesis and compensation tech­
niques for linear control systems. Analysis and design
of discrete-data systems. Introduction to non-linear con­
trol 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.

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 Engi­
neering. 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.

(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 I. 3 credits. (3-0)
Prerequisite, 341. Analysis, interpretation, and smooth­
ing of engineering data through application of statistical
methods. Use of probability papers.
440:453/533. 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)

440:458/558. MICROWAVES II. 3 credits. (3-0)
Prerequisite, 457/557. Microwave components. Techniques of microwave measurements. Microwave systems.

440:459/559. MICROWAVE LABORATORY. 1 credit. (0-1)
Corequisite, 458/558. Laboratory to accompany 458/558.

440:461/561. COMPUTER CIRCUITRY I. 3 credits. (3-0)
Prerequisite, 366. Analysis of computer circuits. Introduction to the use of Boolean Algebra and mapping techniques in analyzing switching circuits.

440:462/562. COMPUTER CIRCUITRY II. 3 credits. (3-0)
Prerequisite, 387 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. COMPUTER CIRCUITRY III. 3 credits (3-0).
Prerequisite, 462/562. Applications of logic circuits in the modern digital electronic computer and in digital communication systems. Computer organization and control, input-output devices and interface standards, advanced topics in computers.

440:473/573. 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)

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

440:602. NETWORK ANALYSIS AND SYNTHESIS. 3 credits. (3-0)
Prerequisite, 438/538. Study of filter circuits. Synthesis techniques such as Foster and Cauer.

440:604. CONTROL SYSTEM THEORY. 3 credits. (3-0)

440:605. NON-LINEAR CONTROL THEORY. 3 credits. (3-0)
Prerequisite, 604. Techniques for the determination of stability for non-linear systems such as describing function analysis, the second method of Liapunov, and Popov frequency locus techniques.

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.

440:612. SYSTEMS ANALYSIS. 3 credits. (3-0)
Prerequisite, 345:225. Application of operations research methods and optimization approach to engineering problems. Linear and dynamic programming, queuing, and Monte Carlo techniques.

440:613. OPTIMAL AND ADAPTIVE CONTROL THEORY. 3 credits. (3-0)
Prerequisite, 473/573. The design of control systems to minimize scalar performance indices. Introduction to Pontryagin's Maximum Principle.

440:614. RANDOM PROCESS ANALYSIS. 3 credits. (3-0)
Prerequisite, 613. Analysis and design of control systems with stochastically defined input. Introduction to estimation filters.
440:621. PROTECTIVE RELAYING. 3 credits. (3-0)
Prerequisite, 481 or permission. The principles and application of relays as applied to the protection of power systems.

440:630. LINEAR CIRCUIT ANALYSIS. 3 credits. (3-0)
Prerequisite, 438/538. Use of pole-zero and matrix methods in circuit analysis.

440:654. ADVANCED ELECTROMAGNETIC FIELDS. 3 credits. (3-0)
Prerequisite, 453/553. Application of Maxwell’s equations continued. Propagation equations and antenna analysis.

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)

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.

440:794. 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, 345:221 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.)

445:220. ANALOG COMPUTERS. 3 credits. (2-1)
Prerequisite, 440:233 or 331; corequisite, 445:225. 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 345:225. The efficient use of the modern digital computer to the solution of linear and non-linear problems encountered in Science and Engineering. Solutions for roots of equations, and the use of the computer in interpolation, numerical differentiation and integration, matrix multiplication and inversion, and the calculation of determinants. The proper use of the Sub-Routine, Common, and Equivalence statements, over lay techniques, etc.

445:360. COMPUTER SCIENCE III. 3 credits. (3-1)
Prerequisites, 260 and 345:224. 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

445:660. COMPUTER APPLICATION I. 3 credits. (3-0)
Prerequisites, 345:225 and 160. 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.

460:310. FLUID MECHANICS. 3 credits. (3-0)

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, 345:225. Displacements, velocities, accelerations and introduction to forces in plane motion mechanisms. Introduction to design of gears, gear trains and cams.

460:325. VIBRATIONS. 3 credits. (3-0)
Prerequisites, 430:303, 345:225. Undamped, damped, and forced vibrations for systems having a single degree of freedom.

460:330. DYNAMICS OF MACHINERY. 4 credits. (3-1)

460:335. ANALYSIS OF MECHANICAL COMPONENTS.
4 credits. (3-1)
Prerequisite, 430:303. Materials and design stresses. Theories of failure for static, dynamic, and thermal loads. Application to analysis and design of components.

460:360. ENGINEERING ANALYSIS I. 3 credits. (3-0)
Prerequisite, 345:225. 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.

460:410. 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.

460:412/512. PRINCIPLES OF NUCLEAR ENGINEERING I. 3 credits. (3-0)
Prerequisite, permission. Basic principles of nuclear engineering. Review of nuclear physics with application to nuclear engineering.

460:415. ENERGY CONVERSION. 3 credits. (3-0)

460:422/522. EXPERIMENTAL STRESS ANALYSIS I.
3 credits. (3-0)
Prerequisites, 460, 430:303. 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.

460:425/525. ENGINEERING ACOUSTICS. 3 credits.
Prerequisite, 400:325. Energy of vibration, analysis by Fourier’s Theorem, phase and mechanical impedance concepts, wave propagation and reflection, plane waves, spherical waves and radiation impedance.
460:430/530. Engineering Dynamics I. 3 credits. (3-0)
Engineering applications of: systems of particles, work, energy, Lagrangian mechanics, rigid body kinetics, the inertia tensor.

460:440. Automatic Controls I. 3 credits. (3-0)

460:441. Automatic Controls II. 3 credits. (3-0)

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.

460:460. Mechanical Design I. 4 credits. (3-1)
Prerequisite, 335. 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.

460:495. 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.
Prerequisite, 310, 302. Fluid flow as affected by thermodynamic considerations. Study of shock and shock areas. Application of dynamic fluid flow.

460:605. Jet Propulsion Principles. 3 credits. (3-0)
Prerequisite, 310, 302. Fundamentals of propulsion systems. Analysis of ramjet, turbojet, rockets, and thrust augmentation.

460:608. Thermodynamics I. 3 credits.

460:610. Dynamics of Viscous Flow I. 3 credits. (3-0)
Prerequisite, 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.

460:612. Principles of Nuclear Engineering II. 3 credits. (3-0)
Prerequisite, 412. Study of theory, design and operation of nuclear reactors, including shielding calculations, instrumentation, health physics, fuel cycles and use of radioactive isotopes.

460:615. Conductive Heat Transfer. 3 credits. (3-0)

460:617. Radiative Heat Transfer. 3 credits. (3-0)

460:620. Experimental Stress Analysis II. 3 credits. (3-0)
Prerequisite, 422. Dynamic strain measurement and design of transducers using electrical resistance strain gages.

460:620. Experimental Stress Analysis III. 3 credits. (3-0)
Prerequisite, 422. Reflective photoelasticity. Moiré 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 laws affecting the stress-strain relationships.

460:623. Applied Stress Analysis I. 3 credits. (3-0)
Prerequisite, 622. Elastic analysis of stress, strain 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)

460:630. Mechanical Vibrations I. 3 credits. (3-0)
Prerequisite, 345:225. 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 Manupertuis oscillatory motion, phase space, and the Hamilton-Jacobi equation.

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, 430:303 or permission. Study of the principles of the design of elastomeric products, emphasizing analytical treatments of the elastic behavior and mechanisms of failure of resilient mountings, springs, seals, bearings, and tires.

460:695. SPECIAL PROBLEMS IN MECHANICAL ENGINEERING. 1-6 credits.
Prerequisite, permission of department head. For qualified candidates for graduate degree. Supervised research in student's major field of training or experience. Credit dependent upon nature and extent of project as determined by supervisor and department head. May be repeated for a maximum of 6 credits.

460:699. MASTER'S THESIS. 1-9 credits.
Prerequisite, permission. Research and thesis on some suitable topic in mechanical engineering. May be repeated for a maximum of 9 credits.

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 a continuum and in a rarefied atmosphere.

460:716. CONVECTIVE HEAT TRANSFER I. 3 credits.

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 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, hyperelasticity, and electroelasticity.

460:730. MECHANICAL VIBRATIONS II. 3 credits.
Prerequisite, 630 or equivalent. Laplace transform and Fourier series analysis of engineering problems. Analysis of two-degree-of-freedom systems, multimass lumped systems, and distributed mass systems.

460:731. RANDOM VIBRATIONS. 3 credits.
Prerequisites, 630 or equivalent. Stationary random processes and their transmission through linear time-invariant systems. Interaction of random vibration with three mechanisms of failure.

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 a Ph.D. dissertation by a Ph.D. candidate.
The College of Education

510: GENERAL AND FOUNDATION EDUCATION

510:156. EDUCATION IN AMERICAN SOCIETY. 3 credits.
Nature and purposes of education in American society including description of its distinctive features and analysis of factors determining its character.

510:350. 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.

510:360. NURSERY SCHOOL LABORATORY. 4 credits. (2-4)
Prerequisite, 740:265. Concentrated study and experience in nursery school programming under direction of supervising teachers.

510:400. STUDENT PARTICIPATION. 1 credit.
Systematic observation and participation in the classroom.

510:401. PROBLEMS IN EDUCATION. 5 credits.
Prerequisite, Senior status in Education. Involves the senior student in a critical approach to the more general problems of education as a scholarly discipline, as a social undertaking, and as a profession. This course, which crosses divisional boundaries, assists the preservice teacher to evaluate educational practice in the light of philosophy of education.

510:402. STUDENT TEACHING. 6-9-12 credits.
Corequisite, 403, prerequisite, 530:313 or equivalent. Students teaching under supervision of directing teacher and University supervisor.

510:403. SEMINAR IN STUDENT TEACHING. 3 credits.
Corequisite, 402.

510:405. INDEPENDENT STUDY. 1-4 credits.
Designed for students who have demonstrated high academic achievement and who wish to do special work in education.

510:410/510. 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.

510:690-691-692. INTERNSHIP TEACHING AND SEMINAR. 4 credits each quarter.
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.

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
APPR EC IAT I ON. 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 GRAD E S. 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 instru­
cimental 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). Obser­
vation 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 a study of
methods of presenting science material.

520:335. THE TEACHING OF READING. 5 credits.
Prerequisite, 565:157. Reading program for the ele­
mentary school, together with modern methods of teach­
reading at the various levels.

520:336. 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, read­
ing, 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 measure­
ment 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
applications of mathematical models. Procedures for the
development of important mathematical 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 elemen­
tary 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 school 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

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. 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 Instruction. 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 Instruction. 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 Instruction. 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, material, class organization and procedures for developing reading improvement programs for high school and college students.

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.

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, 570:901. 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 curriculum building and procedures in teaching.

530:801. OCCUPATIONAL EMPLOYMENT EXPERIENCE. 3-6 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.

540:419/510. 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.

540:420/520. LABORATORY TEACHING TECHNIQUES IN TECHNICAL EDUCATION. 3 credits.
Selection, organization, and presentation of laboratory subject matter pertaining to teaching postsecondary technical education. Emphasis is placed on special methods of developing manipulative skills.

540:421/521. CLASSROOM TEACHING IN TECHNICAL EDUCATION. 3 credits.
Selection, organization, and presentation of classroom subject matter pertaining to teaching postsecondary technical education. Special teaching methods and techniques will be emphasized through practice and theory.

540:430/530. OCCUPATIONAL ANALYSIS. 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. VOCATIONAL HOME ECONOMICS. 3 credits.
Prerequisite, 530:351. Organization and function of Vocational Home Economics programs in comprehensive secondary schools and joint vocational schools.

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.

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.
Prerequisites, 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 quarter.
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. Lectures on theories of play, child development and supervision responsibilities with classroom teachers in the program of Physical Education. Laboratories give an opportunity for analysis and teaching games for the various age groups. For majors in Physical Education.

555-335. MOVEMENT EXPERIENCES FOR ELEMENTARY CHILDREN. 3 credits. (2-2)
The nature of basic movement education, tumbling and gymnastics for the elementary child.

555:338. 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; common communicable and non-communicable diseases; methods of organization; study of source materials available.

555:438/536. 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.

555:805. 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.

555:806. 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 quarter.
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 quarter.
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.

557:301. 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 BASEBALL COACHING. 2 credits.
Theory, techniques and practice related to the different systems of coaching baseball. One hour lecture, two hours laboratory.

557:303. THEORY AND TECHNIQUES OF BASKETBALL COACHING. 2 credits.
Theory, techniques, and practice related to the different systems of coaching basketball. One hour lecture, two hours laboratory.

557:304. 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.

557:305. THEORY AND TECHNIQUES OF WRESTLING COACHING. 2 credits.
Coaching philosophy, theory, techniques, and prac-
tics 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 quarter.
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 quarter.
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

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

560:602. 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.

560:605. 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.

Foundation of guidance in the elementary school. Guidance services in the elementary school and the evaluation and counseling in the elementary school.

560:607. Patterns of Career Development. 3 credits.
Prerequisite, 608. Traces career development from early childhood through retirement and provides fundamental knowledge necessary in elementary and secondary counseling in the area of careers.

560:608. Techniques of Guidance. 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.

560:609. Information Services in Guidance. 3 credits.
Sources, organization and uses of occupational information, principles, practices and techniques of group instruction and individual guidance in studying, evaluating and choosing an occupation.

560:610. The Counseling Interview—Approaches, Procedures and Evaluations. 3 credits.
Prerequisite, 608, 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 615).

560:612. 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.

560:614. Evaluation and Diagnosis of Learning Problems. 4 credits.
Study and measurement of factors leading to learning problems with some attention to remedial procedures.

560:615. Practicum in Counseling. 5 credits.
Prerequisite, 608. Supervised counseling experience with individuals and small groups.

560:626. 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.

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 FIELD RESEARCH. 3 credits each quarter.
Prerequisites, 560:713, 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 quarter.
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.

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.

570: SCHOOL ADMINISTRATION

GRADUATE COURSES
570:601. PRINCIPLES OF EDUCATIONAL ADMINISTRATION. 5 credits.
Theory and practices of educational administration in state and county systems, cities and rural districts. School law, organizing, administration, finance, pupil accounting, planning and completion of school buildings.

570:602. 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.

570:603. PRINCIPLES OF SCHOOL FINANCE. 3 credits.
Prerequisite, 601. Study of financial operations of school systems including tax and other income, expenditures and budgeting.

570:604. SCHOOL AND COMMUNITY RELATIONS. 3 credits.
Principles and practices in maintaining cooperative relationships between the schools and the public.

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.

570:720. Evaluating Educational Institutions. 3 credits.
Laboratory course in which the evaluation of educational institutions will be made by use of up-to-date techniques and criteria.

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.

580:430. 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. 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.

580:460. 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.

580:461. Principles of Teaching Exceptional Children. 4 credits.
Basic principles underlying the instruction of exceptional children—slow learners, gifted, physically handicapped, etc.

580:462. 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.

580:463. Arts and Crafts for the Slow Learner. 3 credits.
Arts and crafts especially suited to the unique characteristics of slow learners.

580:464. 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.

580:465. 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.

580:466. 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.


580:468. 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.

580:469. Practices in Educating Children with Learning Disorders. 3 credits.
Prerequisite, 461. A study of the multiple learning characteristics and the special education procedures ad-
vocated and practiced with children whose educational disability stems from learning and/or behavioral disorders.

580:470-479/570-579. Educational Institutes and Foundation Programs. 3-4 credits each quarter.

Special courses designed as in-service up-grading programs in various fields, frequently provided with the support of national foundations.

580:480/590. 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.


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.


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.

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.

Prerequisite, 520:335 or 580:680 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.


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.


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.


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.

Prerequisite, 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.

Prerequisite, 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.

580:729. 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.

580:760-761-762. Internship in School Psychology. 3 credits each quarter.

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.

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. 5 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 services.

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.

585:260. 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

590:903. 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 covariance, factor analysis and introduction to nonparametric statistics.

590:891. 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 quarter.
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 quarter.
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 quarter.
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 post-baccalaureate 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 quarter.
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. Accounting 430 is a prerequisite for 431.

620:440/540. AUDITING. 5 credits.
Prerequisite, 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 credits of course work at the Master's level. 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 COLLECTION. 3 credits.
Nature and fundamentals of credit, 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-Business Finance. A study of the major financial institutions in the U.S. economy. The course emphasizes the dynamics of the financial inter-mediation 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 may be achieved is studied. Analysis of securities and portfolio management for the individual is stressed.

640:371. BUSINESS FINANCE. 5 credits.
Prerequisites, 620-222 and 335-247. 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 use of 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.
Prerequisite, 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

640:833. MANAGEMENT OF FINANCIAL INSTITUTIONS. 5 credits.
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.

640:845. INVESTMENT ANALYSIS. 5 credits.
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.

640:850. 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.
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, 660:625. 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.

640:688. SEMINAR IN FINANCE. 5 credits.
Prerequisite, 27 graduate credits in Business. Research projects, group reports and discussions.

650: MANAGEMENT

650:363. PRODUCTION ORGANIZATION. 3 credits.
Prerequisite, sophomore standing. Principles and techniques of organization as they relate to effective production and operations management.

650:361. 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.

650:362. 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.

650:363. 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. 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. 3 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.
Prerequisite, 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.
Prerequisite, 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.

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.
Prerequisite, 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.
Prerequisite, 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

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.

Prerequisite, 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.

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.

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 hours of graduate level credit. 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 sys-
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.

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.
tems, communications, job satisfactions 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 hours of course work at the Master's level. 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 topics.
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 I. 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 quarter.
Desirable that 145 precede this course. An introduction to painting, understanding and appreciation through application 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 quarter.
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.
Prerequisites, 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 metal smithing 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, 51 hours* including 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.
Prerequisite, 51 hours including 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 acrylcs and mixed media.

710:350. ADVANCED SCULPTURE. 5 credits.
Prerequisites, 51 hours including 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, 51 hours including 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, 51 hours including 254 and 335 (or concurrent). Personal aesthetic solutions in ceramic medium.

710:358. ADVANCED DESIGN—INTERIOR DESIGN. 5 credits.
Prerequisite, 51 hours including 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 evidences of Shelter and furnishings.

710:362. ADVANCED DESIGN—WEAVING. 5 credits.
Prerequisites, 51 hours including 258. 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, 51 hours including 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.**
Prerequisites, 51 hours including 246 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, 51 hours including 256. Studio specialization in enameling design and craftsmanship beyond the introductory phase.

710:375. **Creative Photography. 3 credits.**
Prerequisite, 51 hours. 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, 51 hours including 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, 51 hours including 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, 51 hours including 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 quarter.**
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 patterns. Construction and fitting of garments. Line, color and design in relation to selection of material and pattern.

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 dietary 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.

740:147. Home Economics Survey. 2 credits.
Survey of history and development of home economics with emphasis on current opportunities available in the field.

740:158. Home 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 or minors.

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.

740:245. 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 in 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. 3 credits.
The relationship of effective utilization of family resources to family well-being. Identity of potential of family consumption with special emphasis on financial concerns of low-income families. Criteria for effective decisions in selected areas of family needs and purchases.

Fine and Applied Arts Courses
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 design 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.

740:401/501. 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, clothing construction background. 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. Household Equipment. 4 credits.
Selection, use and care of modern household equipment.

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 non-residency 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.

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.
Prerequisite, 305, Advanced Clothing. The designing of original garments through drapery of flat material on a form. Construction of form to correspond with individual measurements.

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 and senior standing. A course designed to further knowledge of traditional and contemporary interiors with emphasis upon individual application to specific learning situations. Various furniture refinishing and custom-making techniques are discussed.
740:460. ORGANIZATION AND SUPERVISION OF CHILD CARE CENTERS. 3 credits.
Prerequisite, permission of Instructor. Theory and principles for establishing and operating centers for young children.

750: MUSIC*

* Six 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.
Designed for students with no previous keyboard experience to learn rudimentary keyboard technique 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.
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 quarter.
Sequential. 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 quarter.
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. (Freshmen and Sophomores). 0 credit. 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.

Prerequisite, 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 quarter.
Sequential; prerequisite, 153. 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 quarter.
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.
Prerequisite, 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 comments 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.


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 pre-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 drills, show planning (including sources for themes, etc.) script writing and special visual effects. Any problems a marching band director might expect to encounter while working with his band or planning shows will be discussed. Students will be required to originate a complete half-time show each week (continuity sheet only, no charts etc.). By the end of the quarter each student will be required to write a complete half-time show including script, charts, a drill, a picture formation, an entrance routine to the field, an exit from the field, a full script sheet and a prop sheet.

750:306. MARCHING BAND ARRANGING. 2 credits.
Prerequisites, 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.

Sequential; prerequisites, 153 and 156. Development of music from ancient to modern times; scores, recordings and live performance as illustrative material.

750:354. WOODWIND INSTRUMENT TECHNIQUES. 2 credits.
Prerequisite, 153. Playing of woodwind instruments. Basic techniques for clarinet, flute, oboe and bassoon are presented and practiced.

750:355. BRASS INSTRUMENT TECHNIQUES. 2 credits.
Prerequisite, 153. Playing of brass instruments. Basic techniques for trumpet, French horn, trombone, and tuba are presented and practiced.

750:356. 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.

750:357. STUDENT RECITAL. (Juniors and Seniors). 0 credit.
See 157 for description.

750:360. CHORAL TECHNIQUES. 3 credits.
Prerequisites, 153, 361. Techniques employed in choral conducting, securing attacks, releases, dynamic and tempo changes, voice classification; methods of securing correct intonation; analysis of choral literature; developing and maintaining a choral organization.

750:361. CONDUCTING. 3 credits.
Prerequisite, 153. Technique and practice in conducting, including beat patterns, fermatas, tempo change, attacks and releases, score reading through the use of small and large ensembles with reference to public school music.

750:451/551. 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 adults.

750:462/562. REPertoire and Pedagogy: Organ, 4 credits.
Prerequisite, permission of the instructor. A survey of organ literature with representative works from the fourteenth century to the present, including discussion of characteristic forms, historical significance, and general musical worth. The music will also be examined to illustrate principles and methods of teaching applied at various levels of organ study, as well as performance practices and problems. Some supervised teaching.

750:463/563. REPertoire and Pedagogy: String Instruments, 4 credits.
Prerequisite, permission of the instructor. A study in depth of the four bowed string instruments, dealing with their teaching, and the close relationships they share. Despite the obvious difference in physical application of the cello and bass from the violin and viola, methods of bowing, sound production and coloring are closely related. Application of the four instruments to solo, chamber, and orchestral playing.

750:464/564. REPertoire and Pedagogy: Wind and Percussion Instruments, 4 credits.
Prerequisite, permission of the instructor. A survey of wind and percussion instrument literature with representative works from the total repertory for each instrument. Music will be examined to illustrate principles and methods of teaching applied at various levels of study as well as performance practices and problems.

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 master-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 compositional 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 20 centuries; study in depth of specific examples, from recordings, scores, and live performance; continuation and synthesis of approaches normal to study of music history and music theory; selected readings related to each student's particular fields of interest; project papers.

750:608. Seminar in Music of the Western Hemisphere, 3 credits.
Prerequisite, permission of the instructor. A study of the different influences which have moulded the music of nations, geographical regions and ethnic groups of the Western Hemisphere. Designed to gain through musical insights a better understanding of the peoples of the New World and of their cultures as well as specific knowledge of the stylistic elements of their musical art. Use of phonograph recordings; study of musical examples; research in areas of specific interest to the individual student.

750:609. Techniques of 20th Century Composition, 4 credits.
Prerequisite, permission of the instructor. Study of the principal styles of 20th century music by means of background reading concerning the formation, development, and significance of each style, the foremost composers and their compositions, listening to recordings or live performances, class discussion, analysis of the musical procedures and techniques involved, and finally, original composition. Emphasis on the creative approach. At the close of the course, the student will have produced ten or twelve compositions illustrating the leading types of contemporary music.

Prerequisite, permission of the instructor. A study of the basic philosophical, historical, sociological and psychological concepts around which public school music programs function.
750:612 and 530:612. PRACTICES AND TRENDS IN MUSIC EDUCATION. 4 credits.

Prerequisite, permission of the instructor. An in-depth exploration of current and innovative practices and trends in music education, the dissemination of the findings of research in music education as they are related to prevailing situations and problems in the public school music programs.

750:613. MUSIC IN THE URBAN COMMUNITY. 4 credits.  
urban affairs. Development of an awareness of the 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 unique nature of the urban community and of the techniques, methods and materials necessary for the successful teaching and supervision of music in that environment. Required observations and part-time assisting in Inner-City school music programs.

750:648. 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 student 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.
### 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.

### 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.

### 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.

### CHAMBER ORCHESTRA
1 credit. (2 hours a week) (May repeat 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.

### MEN’S GLEE CLUB
1 credit. (2 hours a week) (May repeat for credit.)
Prerequisite, permission of instructor. An 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.

### WOMEN’S GLEE CLUB
1 credit. (2 hours a week) (May repeat 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.

### KEYBOARD ENSEMBLE
1 credit. (2 hours a week) (May repeat 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.

### 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 an applied music jury on each instrument which he studies privately for credit. The non-music major studying applied music will appear before a jury at the discretion of his private teacher.

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.

### Percussion
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.
752:136-236-336-436 536. 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.
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.

770:353. 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.

770:457/557. PRINCIPLES OF AUDIOMETRY. 3 credits.

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.

770:620. 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.
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.

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### 780: Speech and Theatre Arts

2 credits each quarter.
(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. 1 credit.
(May be repeated for a total of 4 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 4 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.

#### 780:129. Stage Movement. 2 credits.
A course in effective movement in stage performance.

#### 780:131. Public Speaking. 3 credits.
Training in types of public address; performance and individual criticism.

#### 780:132. Ethical Persuasion. 3 credits.
Moral responsibility of the speaker; motivational forces in persuasive discourse.
780:133. ORAL INTERPRETATION I. 4 credits.
Oral interpretation from the printed page with special emphasis on factual prose and prose fiction.

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.

780:143. PARLIAMENTARY PROCEDURE. 2 credits.
Current practices in parliamentary procedure.

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.

780:222. BALLET TECHNIQUE II. 1 credit.
(May be repeated for a total of 4 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.

780:234. ORAL INTERPRETATION II. 4 credits.
Prerequisite, 133. Oral interpretation from the printed page, with special emphasis on poetry and drama, Reader’s Theatre.

780:245. ARGUMENTATION. 3 credits.
Theory of argument, analysis of logical processes.

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.

780:265. 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.

780:281. INTRODUCTION TO RADIO AND TELEVISION. 4 credits.
Prerequisite, 133 or permission. Radio and television 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. 1 credit.
(May be repeated for a total of 4 credits.)
Prerequisite, permission of Instructor 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.

780:361. 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. SCENE DESIGN. 4 credits.
Prerequisite, permission. Principles of design as applied to dramatic production.

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 conventions, 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.
The role of mass media as they relate to modern communication theory. Special projects in research.

780:392. Contemporary Speeches. 3 credits.
A survey and critical review of speakers, their speeches, and audience reactions on significant issues since WW II.

780:444/544. 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 relevancy 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.

780:463. 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.

(May be repeated for a total of 6 credits.)
Prerequisite, permission of the instructor. Individual or group projects, relative to a University Theatre production, in any of the following areas: costume, lighting, scene design and construction, acting, directing, make-up, children’s theatre or theatre management.

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.

780:458/558. 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, 132 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.

780:490/590. Speech Criticism. 4 credits.
Study of the goals and philosophy of rhetorical evaluation. Available for graduate credit only with approval of Head of Department.

780:497. Speech Seminar. 4 credits.
An overview of the field of Speech Communication and theatre arts.

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.

780:640. 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.

780:661. 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.

780:662-663-664-665. Theatre Seminars. 3 credits each quarter.
(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 quarter.
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.

780:684. STUDIES IN COMMUNICATION RESEARCH. 3 credits.
A study of the dimensions of the field of communication: information analysis, social interaction and semantic analysis.

780:690. 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 quarter.
Rhetorical 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.

780:694. 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

820:261. NURSING IN A SOCIAL ORDER. 4 credits.
Prerequisite, by permission. This course includes a survey of the major historical, philosophical, and sociological factors which have affected nursing.

820:271-272. GENERAL NURSING. 8 credits each quarter. 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 quarter.
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. MATERIAL AND CHILD NURSING. 7 credits each quarter.
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 childbearing. 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 community aspects of psychiatry are explored with special attention given to behavioral theories, personality difficulties and clinical application in the care of disturbed patients.

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.
Prerequisite, 261. 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.

920:606. CONTRACTS II. 4 credits.

920:614. PROPERTY I. 3 credits.
Possession. Means by which title may be obtained. Fixtures. Emblements.

920:615. LEGAL RESEARCH AND WRITING. 1 credit.
Integration of methods of research and skill in legal problem solving, with communicative skills in the preparation of legal memoranda and briefs.

920:616. APPELLATE ADVOCACY. 1 credit.
Prerequisite, 615. Research and writing of a brief and presentation of an oral argument on the basis of assigned research materials, to develop skills in writing and argumentation.

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 Torts I.

920:619. AGENCY. 3 credits.

920:622. ADMINISTRATIVE PROCESS. 4 credits.
Prerequisite, 688. Traditional politico-legal theories of separation of powers and the administrative process; procedure for rule-making and adjudication; conclusiveness of administrative determination.

920:625. PROPERTY II. 4 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, social and 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 Legal Profession I.

920:631. COMMERCIAL TRANSACTIONS I. 4 credits.

920:632. COMMERCIAL TRANSACTIONS II. 3 credits.
Prerequisite, 631. Continuation of Commercial Transactions I.

920:633. EVIDENCE I. 3 credits.

920:634. EVIDENCE II. 3 credits.
Prerequisite, 633. Continuation of Evidence I.

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. 3 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.

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.

920:653. MUNICIPAL CORPORATIONS. 3 credits.

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 to 5 credits. May be repeated.
- Prerequisite, 615. With permission of the Dean, special problems, projects, or research may be selected 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, 674 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.

920:665. SEMINAR IN LAND USE PLANNING. 3 credits.
- Prerequisite, 626. Examination of the assumptions, doctrines, and implications of city planning law enabling 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.

920:669. WORLD LAW. 4 credits.
- Nature and substance of the law governing relationships of states with other states.

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. BUSINESS ASSOCIATIONS I. 3 credits.
- Prerequisites, 605 and 619. An introduction to the law relating to the conduct of the business enterprise, including agency relationships, partnerships, other unincorporated business associations, and corporations. Em-
phasis is on the control, management, financing, and governmental regulation of corporations, whether publicly owned or closely held.

920:672. BUSINESS ASSOCIATIONS II. 3 credits.
Prerequisite, 671. Continuance of Business Associations I with emphasis on managers' benefits and hazards, asset distribution to shareholders, dissolution and reorganization.

920:673. 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. 5 credits.
Prerequisite, 673. Continuation of Trusts and Estates I.

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, 669. 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.

920:680. INSURANCE LAW. 4 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.

920:681. 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 Conflict of Laws I.

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 Constitutional Law I.

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 monopoly and mergers, questions of evidence in price-fixing and boycotts under the Sherman Act, resale restrictions and ties, economics in mergers under the Celler-Kefauver 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 Remedies I.

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 to Staff or 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.
VII.
University Directory

Board of Trustees

JULY 1970

Mr. L. M. Buckingham .................... 474 North Portage Path, Akron, Ohio 44303
(Term expires 1973)

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. Arthur Kelly ............................ 24 South Portage Path, Akron, Ohio 44313
(Term expires 1971)

Mr. Joseph M. Leyden ...................... 345 Greenwood Avenue, Akron, Ohio 44320
(Term expires 1975)

Mr. Ben Maidenburg ......................... 2846 Wyndam Road, Akron, Ohio 44303
(Term expires 1977)

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)

Mr. Joseph Thomas ......................... 2427 Covington Road, Akron, Ohio 44313
(Term expires 1974)
## Administrative Officers and Assistants

### GENERAL ADMINISTRATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norman P. Auburn, B.A.</td>
<td>President of the University</td>
</tr>
<tr>
<td>Michael J. Rzasa, Ph.D.</td>
<td>Vice President for Academic Affairs</td>
</tr>
<tr>
<td>R. Wayne Duff, LL.B.</td>
<td>Vice President for Business and Finance</td>
</tr>
<tr>
<td>Ian R. MacGregor, Ph.D.</td>
<td>Vice President for Planning</td>
</tr>
<tr>
<td>Richard L. Hansford, M.A.Ed.</td>
<td>Vice President and Dean of Student Services</td>
</tr>
<tr>
<td>Charles V. Blair, M.A.</td>
<td>Dean of Administration</td>
</tr>
<tr>
<td>Charles F. Foston, Ph.D.</td>
<td>Director of Institutional Research</td>
</tr>
<tr>
<td>Carl L. Hall, B.S.</td>
<td>Treasurer</td>
</tr>
<tr>
<td>Henry Nettling, B.S.B.A.</td>
<td>Controller</td>
</tr>
<tr>
<td>George W. Ball, B.A.</td>
<td>Director of University Relations</td>
</tr>
</tbody>
</table>

### ACADEMIC ADMINISTRATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael J. Rzasa, Ph.D.</td>
<td>Vice President for Academic Affairs</td>
</tr>
<tr>
<td>Gordon A. Hagerman, B.A.</td>
<td>Assistant to the Vice President for Academic Affairs</td>
</tr>
<tr>
<td>Charles V. Blair, M.A.</td>
<td>Dean of Administration</td>
</tr>
<tr>
<td>Alexander L. Adams, B.S.</td>
<td>Assistant to the Dean of Administration</td>
</tr>
<tr>
<td>Edwin L. Lively, Ph.D.</td>
<td>Dean of Graduate Studies and Research</td>
</tr>
<tr>
<td>Robert A. Oetjen, Ph.D.</td>
<td>Dean of the Buchtel College of Arts and Sciences</td>
</tr>
<tr>
<td>Paul S. Wingard, Ph.D.</td>
<td>Associate Dean of the Buchtel College of Arts and Sciences</td>
</tr>
<tr>
<td>Coleman J. Major, Ph.D.</td>
<td>Dean of the College of Engineering</td>
</tr>
<tr>
<td>Donald R. Burrowingbridge, M.S.</td>
<td>Director of the Cooperative Program</td>
</tr>
<tr>
<td>H. Kenneth Barker, Ph.D.</td>
<td>Dean of the College of Education and Dean of International Programs</td>
</tr>
<tr>
<td>John S. Watt, Ph.D.</td>
<td>Associate Dean of the College of Education</td>
</tr>
<tr>
<td>C. A. Carrino, Ph.D.</td>
<td>Assistant to the Dean of the College of Education</td>
</tr>
<tr>
<td>James W. Dunlap, Ph.D.</td>
<td>Acting Dean of the College of Business Administration</td>
</tr>
<tr>
<td>Ray H. Sandefur, Ph.D.</td>
<td>Dean of the College of Fine and Applied Arts</td>
</tr>
<tr>
<td>Estelle B. Naes, Ph.D.</td>
<td>Dean of the College of Nursing</td>
</tr>
<tr>
<td>Stanley A. Samad, J.S.D.</td>
<td>Dean of the School of Law</td>
</tr>
<tr>
<td>John P. Finan, J.D.</td>
<td>Assistant Dean of the School of Law</td>
</tr>
<tr>
<td>Thomas Sumner, Ph.D.</td>
<td>Dean of the General College</td>
</tr>
<tr>
<td>Timothy J. Enright, B.S.B.A.</td>
<td>Assistant to the Dean of the General College</td>
</tr>
<tr>
<td>W. M. Petry, M.S.E.</td>
<td>Dean of the Community and Technical College</td>
</tr>
<tr>
<td>Robert C. Weyrick, M.S.</td>
<td>Assistant Dean of the Community and Technical College</td>
</tr>
<tr>
<td>W. A. Rogers, Ed.D.</td>
<td>Dean of the Summer Sessions and Off-Campus Academic Programs</td>
</tr>
<tr>
<td>John G. Hedrick, M.A.</td>
<td>Dean of the Evening College</td>
</tr>
<tr>
<td>Cecil L. Dobbins, B.B.A.</td>
<td>Assistant Dean of the Evening College</td>
</tr>
<tr>
<td>Frank V. Kelly, M.S.</td>
<td>Assistant Dean of the Evening College</td>
</tr>
<tr>
<td>H. Paul Schrank, Jr., M.S.</td>
<td>University Librarian</td>
</tr>
<tr>
<td>Pauline Franks, B.S.L.S.</td>
<td>Associate University Librarian</td>
</tr>
<tr>
<td>Dorothy Mackenzie, B.L.S.</td>
<td>Director of University Archives, and Rare Books Librarian</td>
</tr>
<tr>
<td>Stuart M. Terrass, M.A.</td>
<td>Assistant to the Director of Institutional Research</td>
</tr>
<tr>
<td>Michael J. Pantaleano, M.B.A.</td>
<td>Assistant to the Director of Institutional Research</td>
</tr>
</tbody>
</table>

### PLANNING ADMINISTRATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ian R. MacGregor, Ph.D.</td>
<td>Vice President for Planning</td>
</tr>
<tr>
<td>Rudolph J. Tichy, B.S.</td>
<td>University Architect</td>
</tr>
<tr>
<td>Donald L. Bowles, B.S.I.M.</td>
<td>Assistant to the Vice President for Planning</td>
</tr>
<tr>
<td>Wade B. Hatch, B.S.C.E.</td>
<td>Physical Facilities Analyst</td>
</tr>
<tr>
<td>Guy J. Caudill</td>
<td>Assistant to the University Architect</td>
</tr>
</tbody>
</table>

### DEVELOPMENT ADMINISTRATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horace D. Harby, B.S.</td>
<td>Assistant to the President for Development</td>
</tr>
<tr>
<td>W. Richard Wright, B.A.</td>
<td>Special Assistant for Development</td>
</tr>
<tr>
<td>James P. Banks, B.A.</td>
<td>Director of Development</td>
</tr>
</tbody>
</table>
UNIVERSITY RELATIONS AND ALUMNI RELATIONS

George W. Ball, B.A. ........................................... Director of University Relations
John M. Denison ........................................... Assistant Director of University Relations
William S. Cramer, 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

R. 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
Mrs. Kathryn Vegso, M.S.Ed. ...................... Director of Women's Activities and Adviser of Women
Richard K. Bonnell, B.A. .......................... Adviser of Men
Irvin W. Brandel, M.A. ............................... Adviser of Men
Ronald P. Brown, M.S.Ed. ......................... Coordinator of Developmental Services and Adviser of Men
Daw Lee Buie, M.S. .................................. Adviser of Men
Richard A. Calkins, B.A. .......................... Foreign Student Adviser
Carolyn J. Fleming, M.S. .............................. Adviser of Women
John E. Grimm, M.Ed. .................................. Adviser of Men
Robert D. Hahn, M.S.Ed. .......................... Adviser of Men
Phyllis Y. Harper, M.Ed. .......................... Adviser of Women
Robert T. Lawry, M.A. ............................... Adviser of Men
Ted A. Mallo, M.S.Ed. .................................. Adviser of Men
Mrs. Roberta Martin, M.S. ....................... Adviser of Men
Stephen D. Miller, M.A. .......................... Adviser of Men
Lorraine Painter Hockwalt, M.S.Ed. .......... Adviser of Women
Mrs. W. Ann Rivera, M.A.Ed. .................. Adviser of Women
Diane Simonti, M.A.Ed. .......................... Adviser of Women
William Skeegan, M.Ed. .......................... Adviser of Men
Frederick J. Sturm, M.A. .......................... Adviser of Women
Susan M. Waller, M.S. ............................... Adviser of Women
Robert C. Berry, B.S.B.A. ......................... Director of Placement
William C. Lamont, M.S. .......................... Assistant Director of Placement

Thomas O. Brown, Ph.D. .......................... Director of Testing and Counseling Bureau
Roy D. Chiles, M.S. .................................. Counselor, 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
Mrs. Phyllis Paul, M.A. .......................... Counselor, Testing and Counseling Bureau
Francis J. Werner, M.A. .......................... Counselor, Testing and Counseling Bureau

Jay R. Hershey, M.Ed. .......................... Director of Residence Halls
Sharon K. Jacobs, M.S. .......................... Associate Director of Residence Halls
Gabriel N. Repassy, M.A. ........................ Assistant Director of Residence Halls
Robert W. Larson, B.S.B.A. ....................... Director of Student Financial Aids
Dennis J. Montrella, B.S.Ed. ...................... Assistant Director of Student Financial Aids
Richard C. Rainsback, M.A.Ed. ............... Assistant Director of Student Financial Aids
Donald E. Sabatino, M.A.Ed. .................. Director of the Gardner Student Center
Frank J. Ciampoli, B.A. .......................... Assistant Director of the Gardner Student Center
Tom A. Goosby, B.A. .............................. Assistant Director of the Gardner Student Center
Vincent A. Rich, B.S. .............................. Assistant Director of the Gardner Student Center
Edward J. Riegler, M.A. .......................... Assistant Director of the Gardner Student Center
Charles T. Salem, M.A. .................................. Director of Admissions
John W. Owen, B.A. .................................. Associate Director of Admissions
Marjorie M. Capotosto, B.S. ...................... Assistant Director of Admissions
Walter Lee Evege, Jr., B.S. ...................... Assistant Director of Admissions
Alfred E. Hockwalt, M.B.A. ...................... Assistant Director of Admissions

SPECIAL SERVICES
Howard R. Baldwin, M.Ed. ...................... Registrar
R. Thomas Ost, B.A. .................................. Assistant Registrar
Jerry L. Rhodeback, B.A. ...................... Assistant Registrar
Edward M. Solinski, M.S. ...................... Director of the Computer Center
William Mavrides, M.A. ...................... Director of Instructional Media
C. Robert Blankenship, M.A.Ed ................... Director of Audio-Visual Services
Robert C. Marnit ............................... Supervisor of Instructional Television
Elmer N. Reighard, Jr., B.A. ........ Production Manager of Instructional Television

SPECIAL UNIVERSITY AGENCIES
Maurice Morton, Ph.D. ...................... Director of the Institute of Polymer Science
Alan N. Gent, Ph.D. ...................... Assistant Director of the IPS
Howard Stephen, Ph.D. ...................... Executive Officer in the Institute of Polymer Science
George J. Mauer, Ph.D. ...................... Director of the Center for Urban Studies
H. Kenneth Barker, Ph.D. .................. Dean of the Center for International Programs
Allen G. Noble, Ph.D. ...................... Director of International Studies
Warren F. Kuehl, Ph.D. ...................... Director of the Center for Peace Studies
Lascelles F. Anderson, M.A. .................. Director of Afro-American Studies
John Wesley Wilson, B.S. ................... Associate Director of Afro-American Studies
Charles V. Blair, M.A. ...................... Director of the Institute for Civic Education
Mrs. Mary E. Chesrown, B.A. ........... Assistant Director of the Institute for Civic Education
Cecil L. Dobbins, B.B.A ...................... Head of the Department of Special Programs
Warren F. Kuehl, Ph.D. ...................... Associate Director of the Archives of the History of American Psychology
Marion McPherson, Ph.D. .................. Associate Director of the Archives of the History of American Psychology
Peter J. Hampton, Ph.D. ..................... Director of Developmental Programs
Charles V. Blair, M.A. ...................... University Equal Employment Opportunity Officer
Richard Neal, B.S. ...................... Deputy Equal Employment Opportunity Officer
Elizabeth J. Hittle, Ed.D ..................... Director of the Speech and Hearing Center

RESEARCH ADMINISTRATION
University Research Council
Edwin L. Lively, Ph.D. .................. Dean of Graduate Studies and Research
Maurice Morton, Ph.D. .................. Director of Institute of Polymer Science
Coleman J. Major, Ph.D. .............. Director of Institute of Science and Engineering Research
H. Kenneth Barker, Ph.D. .............. Director of Institute of Civic and Educational Research
James W. Dunlap, Ph.D. .............. Acting Director of Institute of Business and Economic Research
Institute of Polymer Science
Maurice Morton, Ph.D. .................. Director
Alan N. Gent, Ph.D. .................. Assistant Director
Center for Urban Studies
George J. Mauer, Ph.D. .................. Director
Edward W. Hanten, Ph.D. .............. Associate Director
William S. Hendon, Ph.D. .............. Associate Director
Hugh F. Coyle, Jr., M.A. .............. Assistant Director
University Emeritus Faculty

PAUL ACQUARONE, Professor Emeritus of Botany and Geology (1931)
B.S., Pennsylvania State College; Ph.D., Johns Hopkins University, 1929.

DAVID E. ANDERSON, Associate Professor Emeritus of Engineering Materials (1923)
B.A., Augustana College; M.S., University of Chicago, 1923.

IRENE C. BEAN, Professor Emeritus of Home Economics (1944)
B.S., Illinois Wesleyan University, M.A., Texas State College for Women, 1937.

HELEN BECKEN, Associate Professor Emeritus of Primary Education (1949)

CHARLES 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.

RENA NANCY CABLE, Associate Professor Emeritus of Art (1927)
B.F., M.Ed., The University of Akron, 1931.

ANGELA BELLE GHALFANT, Assistant Professor Emeritus of French (1947)
B.A., Ohio State University; M.A., Middlebury College, 1934.

Hjalmer W. Distad, Professor Emeritus of Education (1934)
B.S.Ed., M.A., Ph.D., University of Minnesota, 1926.

HOWARD M. DOUTT, Professor Emeritus of Secretarial Science (February 1926)
B.A., The University of Akron; M.A., University of Chicago, 1934.

CHARLES DUFFY, Distinguished Professor Emeritus of English (1944)
Ph.B., University of Wisconsin; M.A., University of Michigan; Ph.D., Cornell University, 1934.

EMANUEL INTERNATIONALOSCHIA, Professor Emeritus of Secretarial Science (1929)
B.E., The University of Akron; M.S.Ed., Syracuse University, 1935.

VAUGHN W. FLOUTZ, Professor Emeritus of Chemistry (1941)
B.A., Olivet College; M.A., Ph.D., University of Colorado, 1932.

ÖMER R. FOUTS, Associate Professor Emeritus of Physics (1926)
B.A., Wittenberg University; M.A., The Ohio State University, 1925.

DONFRED H. GARDNER, Vice President and Dean of Administration Emeritus (1924)

FRED S. GRIFFIN, Professor Emeritus of Mechanical Engineering (1921)
M.E., The Ohio State University, 1911; D.Eng., The University of Akron, 1968. P.E., Ohio.

OSBAIN GRUBER, Assistant Professor Emeritus of Business Administration (1946)
B.A., University of Minnesota; M.B.A., Northwestern University, 1928.

EMILE GRUNBERG, Professor Emeritus of Economics (1946) (1956)
A.M., M.A., Ph.D., University of Frankfurt, 1930.

E. K. HAMLEN, Associate Professor Emeritus of Coordination (March 1946)
M.E., The University of Akron, 1928; P.E., Ohio.

LESLIE 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.

IRENE HORNIG, Assistant Professor Emeritus of Biology (1946)
St. John's Hospital School of Nursing, R.N., 1928; B.S.N., Western Reserve University, 1934.

DONATO INTERNOCCIA, Professor Emeritus of Modern Languages (1938)
B.A., Broadview College; M.A., Ph.D., Northwestern University, 1938.

ROBERT T. ITPNER, Professor Emeritus of Modern Languages (1950)
B.A., Ph.D., University of Illinois, 1937.

ALFRED H. JOHNSON, Associate Professor Emeritus of Education (1956)
B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.

DAVID KING, Associate Professor Emeritus of Political Science (1927)
B.A., Maryville College; M.A., University of Chicago, 1925.

WALTER C. KRAATZ, Professor Emeritus of Biology (1924)
B.A., University of Wisconsin; M.A., Ph.D., The Ohio State University, 1923; D.Sc., The University of Akron, 1966.

R. D. LANDON, Professor Emeritus of Civil Engineering (February 1946)
C.E., M.S., University of Cincinnati, 1927; P.E., Ohio.

WARREN 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, 1939.
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.
GENE 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.
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)
CHARLES RUGER, Professor Emeritus of Sociology (1949)
B.A., M.A., University of Michigan; Ph.D., University of Kansas, 1935.
FREDERICK S. SEPTON, 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., Ph.D., State University of Iowa, 1927.
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)
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; DSc., The University of Akron, 1958.
MRS. FLORENCE N. WHITNEY, Associate Professor Emeritus of English (1936)
B.A., Dakota Wesleyan University; M.A., Columbia University, 1919.
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 or The University of Akron; unless otherwise stated, service began in the month of September.
University Faculty and Administration*

Full-Time

NORMAN P. AUBURN, President of the University and Professor of Political Science (1951)

IRVING ACHORN, Associate Professor of Art (1965)
B.S., M.A., Kent State University, 1956.

ALEXANDER L. ADAMS, Assistant to Dean of Administration, Lecturer in Physical Education (June 1970)

HOBBIT W. ADAMS, Associate Professor of Accounting (1969)

RONNIE G. ADAMS, Assistant Professor in the Community and Technical College (1969)
B.C.E., Cleveland State University; M.S.C.E., Lehigh University, 1963.

ROBERT ADMAN, Assistant Professor of Law (1969)
B.A., The Ohio State University; J.D., University of Michigan, 1966.

JOHN 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.

MRS. ANN G. ALLAN, Assistant Professor of Bibliography and Assistant Librarian for Technical Services (January, 1968)

MRS. VIRGINIA ALLANSON, Instructor in Bibliography, Subject Librarian, Science-Technology (October 1968)
B.S., Purdue University; M.L.S., Kent State University, 1967.

ROBERT D. AMSPOKER, Assistant Professor of Management (1970)
B.S., M.S., The Ohio State University, 1965.

LASCELLES F. ANDERSON, Assistant Professor of Economics and Director of Afro-American Studies (1966)
B.A., Howard University; M.A., New York School for Social Research.

ROBERT E. ANDREYKA, Assistant Professor of Education (1969)

ALEXIS M. ANIKEEFF, Professor of Psychology (1967)
B.A., M.A., University of Michigan; Ph.D., Purdue University, 1949.

JOHN ARENDT, Materials Testing Engineer in Civil Engineering (February 1967)
B.S.E., Fenn College, 1944.

WALTER E. ARMS, Assistant Professor of Education (1968)
B.S., Northwest Missouri State College; M.Ed., University of South Dakota; Ph.D., Indiana University, 1968.

WILLIAM J. ARN, Assistant Professor of Education (1967)
B.S., Ohio Northern; M.S., Bowling Green State University; Ph.D., Kent State University, 1967.

MRS. HELEN ARNETT, Associate Professor of Bibliography and Education Librarian (1953)
B.A., The University of Akron; B.S.L.S., Western Reserve University; M.A., San Jose State College (California); Ph.D., Western Reserve University, 1965.

GLENN 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.

MRS. 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.

JOHN BACHMANN, Professor of Chemistry (February 1961)
B.Ch.E., Ph.D., University of Minnesota, 1939.

MRS. GERTRUDE BADGER, Assistant Professor of Education (1965)
B.S.Ed., B.A., The Ohio State University; M.Ed., Kent State University, 1960.

EVELYN BAER, Associate Professor of Speech (1966)
B.A., the University of Chicago; M.A., The University of Akron, 1948.
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)

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.D., The 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., Penn State University, 1968.

H. KENNETH BARKER, Dean of the College of Education, Dean of International Programs and Professor of Education (1966)
B.A., M.A., University of Louisville; Ph.D., University of Michigan, 1959.

MRS. ANITRA BARKELY, Instructor in Speech (March 1969)

MRS. ANNA P. BARNUM, Instructor in Community and Technical College (1970)
A.B. Middlebury College; M.A. University of Vermont, 1969.

DAVID G. BARR, Assistant Professor of Education (1967)
B.S., M.A.M., Kent State University, 1966.

CHARLES M. BARRISI, Associate Professor of Sociology (1966)

MRS. MARIAN E. BAUER, Assistant Professor of Nursing (1969)
B.A., Maryville College; M.A., Western Reserve University, 1941. R.N.

DONALD E. BECKER, Assistant Professor of Management (1959)

JOHN D. BEE, Assistant Professor of Speech (1969)
B.A., Ohio University; M.A., University of Wisconsin, 1967.

CLARE BEDILLION, Instructor in the Community and Technical College (1968)
B.A., The Woman's College of Georgia; M.A., New York University, 1944.

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, 1969.

WILLIAM BEILDING, Editor, University News Service (1969)
B.S., University of Oregon, 1958.

JAMES D. BELL, Instructor in Community and Technical College (1970)
B.S., Kent State University, 1969.

MRS. JUTTA T. BENDREMER, Instructor in English (1967)
B.A., Hunter College; M.S., Brooklyn College, 1951.

EUGENE MOSO BENEDICT, Instructor in the Community and Technical College (January 1969)

PAUL BENNINGFIELD, Assistant Professor of Music (1969)

DONALD K. BERQUIST, Assistant Professor of Accounting (1969)
B.S.B.A., Youngstown University; M.S., The Ohio State University, 1964; C.P.A., Ohio.

ROBERT C. BERRY, Director of Placement, (August 1946)

CARL A. BEZBATCHENKO, Associate Professor of Sociology (1965)
B.A., Eastern Michigan University; M.A., University of Michigan; Ph.D., Iowa State University, 1965.

WILLIAM Beyer, Professor of Mathematics (1961)
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MICHAEL BEZBATCHENKO, Professor of Mechanical Engineering (June 1949)
B.S.E., The University of Akron; M.S., Case Institute of Technology, 1954; P.E., Ohio.

CLARK E. BIDDLE, Director of Purchasing (April 1967)
B.S.C., Ohio University, 1957.

LESTER JAMES BILEST, Instructor in History (1962)
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PAUL F. BLACK, Assistant Professor of Education (1970)
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ROBERT R. BLACK, Associate Professor of Economics (1958)
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CHARLES V. BLAIR, Dean of Administration, Assistant Professor in the Community and Technical College and Equal Employment Opportunity Officer (April 1959)

C. ROBERT BLANKENSHIP, Instructor in Education and Director of Audio-Visual Services (1952 July 1956)

BOBBY BLICK, Associate Professor of History (1964)
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LARRY C. BRADLEY, Assistant Professor of Education (1969)
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The University of Akron.

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PETER DESY, Instructor in English (1966)

ROBERT L. DIAL, Associate Professor of English (1965)
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CONSTANTIN DIMITRIU, Head of Searching and Instructor in Bibliography (1970)
Baccalaureate, Lycum in Cluj, Romania; M.A., National University of Bucarest, M.S.L.S., Case Western Reserve University, 1969.

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JOSEPH J. DONATELLI, JR., Instructor in Modern Languages and Director of Language Laboratory (1967)

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AMES
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Ingenieur of Chemistry, University of Zagreb; Ph.D., University of Massachusetts, 1968.

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THEODORE DUKE, Professor of Latin and Greek (1946)
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DAVID R. DURST, Assistant Professor of Finance (1968)
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ASHOK DUTT, Associate Professor of Geography and Associate Professor of Urban Studies (1968)
B.A., M.A., Ph.D., Patna University (India), 1961.

JOSEPH A. EDMUNDS, Associate Professor of Electrical Engineering (June 1957)

HAROLD L. EDWARDS, Assistant Professor in the Community and Technical College (1965)

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TIMOTHY J. ENRIGHT, Assistant to Dean of General College (1969)

MRS. ELIZABETH B. ERICKSON, Instructor in Economics (1969)
B.S., M.S., University of Western Australia, 1966.

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EARL L. ERTMAN, Assistant Professor of Art (1967)
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BERNARD L. ESPORITE, Instructor in Education (1970)

MRS. CHARLOTTE ESSENER, Assistant Professor of Speech (1965)

THOMAS W. EVANS, Assistant Professor of Physical Education (April 1948)
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JUDY EVERETT, Assistant to the University Artist (October 1968)

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WILLIAM H. FARLING, Assistant Professor of Education (1968)
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MICHAEL F. FARAHA, Associate Professor of Chemistry (1964)
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MRS. LEONA W. FARRIS, Assistant Professor of Home Economics (1969)
B.S., Ohio State University, 1940.

ALI FATEMI, Associate Professor of Economics (1965)
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ROBERT E. FERGUSON, Professor of Education (1965)
B.S.Ed., M.A., Kent State University; Ed.D., Western Reserve University, 1965.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
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<tbody>
<tr>
<td>Russell N.</td>
<td>Professor of Civil Engineering (1966)</td>
</tr>
<tr>
<td>Don R.</td>
<td>Professor of History (1962)</td>
</tr>
<tr>
<td>Thomas C.</td>
<td>Professor of Classics (1970)</td>
</tr>
<tr>
<td>Thomas T.</td>
<td>Professor of Sociology</td>
</tr>
<tr>
<td>John F.</td>
<td>Professor of Chemistry</td>
</tr>
<tr>
<td>Alan C.</td>
<td>Professor of Polymer Physics and Assistant Director of the Institute of Polymer Science</td>
</tr>
<tr>
<td>Edward J.</td>
<td>Professor of Music</td>
</tr>
<tr>
<td>Alice M.</td>
<td>Assistant Professor of Music</td>
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<tr>
<td>J. Frederick</td>
<td>Assistant Professor of Chemical Engineering</td>
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<tr>
<td>B.S., Urban Planning; B.S.C.E., M.S.C.E., Michigan State University; Ph.D., Eng., National Technical University (Athenaeum, Greece), 1964.</td>
<td></td>
</tr>
<tr>
<td>M.A., Harvard University, Teachers College, 1937.</td>
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<tr>
<td>B.A., Adelphi College, Ph.D., University of Chicago, 1958.</td>
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<tr>
<td>B.A., Marshall University; M.S., Miami University, 1969.</td>
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<tr>
<td>B.A., Rutgers University; M.A., University of Pennsylvania; Ph.D. Kent State University, 1970.</td>
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<tr>
<td>B.S., West Virginia Wesleyan, 1964.</td>
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<tr>
<td>B.S., Brown University; LL.B., Yale Law School, 1941.</td>
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<tr>
<td>B.S.Ed., Kent State University; B.S.L.S., Western Reserve University, 1940.</td>
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<tr>
<td>B.S., Ohio State University, 1952.</td>
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<tr>
<td>B.S., The University of Akron; B.S. (Special), Ph.D., London University (England), 1955.</td>
<td></td>
</tr>
<tr>
<td>B.S., Cleveland State University (Penn College), 1954.</td>
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</tr>
</tbody>
</table>

ERNEST D. GIGLIO, Associate Professor of Political Science (August 1970)
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PETER J. GINGO, Associate Professor of Mathematics (1969)

BERTRAM C. GIRE, Assistant Professor of Law, Assistant Law Librarian Acquisitions and Reference (1970)
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B.A., Kalamazoo College; M.A., The University of Akron, 1965

RICHARD H. HAUBE, Associate Professor of Psychology (1967)
B.A., Kenyon College; M.S., Ph.D., University of Pittsburgh, 1964.

PAUL C. HAYES, Associate Professor of Education (1967)
B.S.Ed., Wilmington College; M.A., Miami University; Ph.D., University of Ottawa (Canada), 1963.

MRS. CAROL JEAN HILER, Instructor in Home Economics (1968)
B.S., Framingham State College (Massachusetts); M.S.Ed., The Ohio State University, 1968.

JOHN M. HEARD, Assistant Professor of Music (1970)
B.M., Eastman School of Music; M.M., University of Michigan, 1957.

JOHN C. HEDRICK, Dean of the Evening College (July 1967)
B.S.Ed., Kent State University; M.A., University of Notre Dame, 1958.

MRS. JACQUELINE HEGAR, Instructor in Classics (1967)

WALTER H. HEINTZ, Associate Professor of Physics (1967)
B.S., University of Massachusetts; M.S., Ph.D., The Ohio State University, 1962.

CECIL W. HEMBREE, Assistant Professor of Education (1970)
B.S., M.S., Indiana University, 1984.
WILLIAM S. HENDON, Professor of Urban Studies, Professor of Economics and Associate Director of the Center for Urban Studies (1968)

TERRY N. HENRIKSEN, II, Assistant Professor of Physics (1970)
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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, Instructor in the Community and Technical College (1968)
B.B.E., University of Dayton; M.Ed., Pennsylvania State University, 1968; P.E., Ohio.

JAY R. HERSHEY, Director of Residence Halls (1967)

ELIZABETH J. HITTLE, Professor of Speech and Director of the Speech and Hearing Center (1961)
B.S.Ed., The University of Akron; M.A., Kent State University; Ed.D., Western Reserve University, 1963.

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WILLIAM W. HOKMAN, Assistant Professor of Mathematics (1967)
B.S.Ed., M.A., M.S., West Virginia University.

JOHN J. HOUSE, Assistant Professor of Chemistry (1965)

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 HOUSE, Assistant Professor of English (1946)
B.A., The University of Akron; M.A., Western Reserve University, 1950.

JOHN HOUSE, Assistant Professor of Chemistry (1965)
B.A., 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.

JOHN HULL, Assistant Professor of English (1946) (1954)
B.A., The University of Akron; M.A., Western Reserve University, 1953.

J. MICHAEL HUNGERMAN, Counselor, Testing and Counseling Bureau (1970)
B.A., College of Steubenville; M.Ed., Kent State University.

MRS. JULIA HULL, Assistant Professor of English (1946)
B.A., The University of Akron; M.A., Western Reserve University, 1980.

ROBERT C. HUNTER, Assistant Professor of Law and Director of Clinical Training of the School of Law (1969)

PAUL O. HUSS, Professor of Electrical Engineering (January 1941)
B.S.Ed., B.S.E., M.S.E., 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 in the Community and Technical College (1966)
Mrs. Sue S. Inman, Instructor in Modern Languages (1968)
Richard Jackoboice, Assistant Professor of Music (July 1967)
Dale L. Jackson, Professor of Biology (1961)
B.S., Ph.D., University of Durham (England), 1959.
Donald M. Jackson, Assistant Professor of Marketing (1969)
Geraldine A. Jackson, Documents Librarian
B.S., Miami University, 1956.
Jim L. Jackson, Assistant Professor of Geology (1967)
B.S., Kent State University; M.S., Western Reserve University, 1964.
Sharon Kathleen Jacobs, Associate Director of Housing (August 1968)
B.A., The University of California (Santa Barbara); M.S., Indiana University, 1968.
Allya Jacobson, Professor of Sociology (1970)
B.A., M.A., Miami University; Ph.D., The Ohio State University, 1950.
Donald M. Jenkins, Associate Professor of Business Law (1965)
Timothy C. Joche, Instructor in Community and Technical College (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, Assistant 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 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)
Miriam Ann Jollat, 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.
Morris Kalmon, Adjunct Professor of Speech (1968)
B.A., 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., The University of Akron, 1966.
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.
Jolita E. Kavalunas, Instructor in Modern Languages (1970)
Azmi Kaya, Assistant Professor of Mechanical Engineering (1970)
Don A. Keister, Distinguished Professor of English (1931)
B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.
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.
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., U.S. Naval Postgraduate School; Pennsylvania State University.
JOSEPH P. KENNEDY, Professor of Polymer Science, Professor of
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B.S., University of Budapest; M.B.A., Rutgers University; Ph.D., University of Vienna, 1954.

SALLY KENNEDY, Assistant Professor of English (1966)
B.A., Columbia College; M.A., Ph.D., University of Tennessee, 1968.

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B.S., West Chester State College; M.A., University of North Carolina, 1984.

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MAXWELL I. KLAYMAN, Professor of Marketing (1970)
B.S., University of Massachusetts; M.S., Iowa State University; M.A., Ph.D., Harvard University, 1968.

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MRS. ROSE A. KLEIDON, Instructor in Community and Technical College (1970)
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MICHAEL KLEIN, Computer Scientist in the Computer Center (1964)

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B.A., University of Idaho; M.S.L.S., Louisiana State University, 1960.

WILLIAM C. KOFFON, Associate Professor of Chemistry (1965)
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ALBERT KORIS, Associate Professor of Geography (1968)

GERALD F. KOJER, Assistant Professor of Chemistry (1969)
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JANCO F. KOVACEVICH, Assistant Professor of Education (1969)
B.S., Baylor University; M.S., The University of Akron; Ph.D., Case Western Reserve, 1970.

ROBERT KOVICH, Professor of Law (1963)
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MRS. KATHLEEN M. KRACO, Artist in the Department of Publications (1966)

KEVIN SCOTT KREJC, Instructor in Art (1968)
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PETER R. KRESSLER, Assistant Professor of International Business (1969)
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ALAN F. KREVIS, Associate Professor of Chemistry (1966)
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B.A., Rollins College; M.A., Ph.D., Northwestern University, 1954.

ERNST A. KUEHL, Assistant Professor of Mathematics (1965)

MILTON L. KULF, 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. KVAAN, Assistant Professor of Political Science (1964)

JOHN A. LAROSKI, Instructor in Physical Education (July 1966)
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)

DOROTHY LAUBACHER, Associate Professor of Home Economics (1950)
B.S., M.A., The Ohio State University, 1941.

FRED R. LEFFLER, Assistant Professor of Electrical Engineering (1970)
B.S.E.E., The University of Denver; M.S.E.E., Oregon State University, 1970.

WALTER D. LEHRMAN, Instructor in English (1956)
B.S., M.A., Columbia University, 1953.

Gerald H. Levin, Professor of English (1960)
Vanderbilt University; M.A., University of Chicago; Ph.D., University of Michigan, 1956.

JEFFREY E. LEWIS, Assistant Professor of Law (1970)

RUTH B. LEWIS, Associate Professor of Speech (1966)
B.S., Wittenberg University; M.A., Ph.D., The Ohio State University, 1961.

ALVIN H. LIEBERMAN, Instructor in Accounting (1969)

CARL LIEBERMAN, Assistant Professor of Political Science (1967)
B.A., Temple University; M.A., Ph.D., University of Pittsburgh, 1969.

MRS. MARTHA LIEBHAUS, Associate Professor of Mathematics (January 1967)

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.

BRUCE E. LIMBERG, Lecturer in Geology (1970)
B.S.E., Southern State College, 1968.

MRS. JOY S. LINDBECK, Associate Professor of Education (1967)

SHELDON B. LISS, Professor of History (1967)
B.A., The American University; M.A., Duquesne University; Ph.D., The American University, 1964.

EDWIN L. Lively, Dean of Graduate Studies and Research and Professor of Sociology (1963)

MRS. HELEN P. LIVINGSTON, Head of Serials and Instructor in Bibliography (1970)
B.A., Bishop's University; M.S., Simmons College, 1954.

MRS. KRIEMHILDE LIVINGSTON, Instructor in Modern Languages (1968)
Diploma, University of Munich; Diploma, Bavarian Interpreter School, 1947.

MRS. MARIAN LOTT, Assistant Professor of Music (1967)
DAVID J. LOUSCHER, Instructor in Political Science (1970)
B.A., Morningside College; M.A., American University; M.A., University of Wisconsin, 1968.

LLOYD B. LUEPTOW, Associate Professor of Urban Studies and Associate Professor of Sociology (1967)
B.S., M.S., Ph.D., University of Wisconsin, 1964.

JOSEPH E. LUKACH, Director of Staff Personnel, (1969)

BOB LUNDY, Assistant Professor of Art (1969)

WILLIAM D. LYON, Assistant Professor of Chemistry (1967)
B.S.Chem., University of Illinois; Ph.D., University of Wisconsin, 1967.

MRS. MARY JO MACCRACKEN, Instructor in Physical Education (1968)

MRS. ALICE MACDONALD, Instructor in English (1969)

JOHN A. MACDONALD, Professor of Music (1959)
B.M.Ed., Oberlin College; M.M., Cleveland Institute of Music, 1967.

IAN R. MACGREGOR, Vice President for Planning and Professor of Modern Languages (1961)
B.A., M.A., Ph.D., University of California at Los Angeles, 1967.

TEO MACHER, Instructor in Music (1970)
B.M., The University of Akron; M.M., Cleveland Institute of Music, 1967.

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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)
B.A., M.A., Catholic University of America; Ph.D., University of Michigan, 1964.

MRS. MARY MACDONALD, Instructor in Physical Education (1970)

MRS. BARBARA J. MACGRECOR, Instructor in Music (1970)

IAN R. MACGREGOR, Vice President for Planning and Professor of Modern Languages (1961)
B.A., M.A., Ph.D., University of California at Los Angeles, 1967.

EUGENE MANO, Associate Professor of Civil Engineering (1957)
B.Ch.E., The Ohio State University, 1948; P.E., Ohio.

GEORGE F. MANOS, Associate Professor of Civil Engineering (1957)
B.Ch.E., The Ohio State University, 1948; P.E., Ohio.

PHILIP S. MANTHEY, Section Leader, Management Science and Systems in Computer Center (November 1965)

RAYMOND J. MARAS, Professor of History (1970)
B.A., University of California at Berkeley; M.A., Catholic University of America; Ph.D., University of California at Berkeley, 1955.

THEODORE MARRE, Instructor in Mathematics (1969)

RICHARD C. MARSHALL, Associate Professor of Law (1959)
LL.B., Akron Law School, 1954; Case Western Reserve University.

ROBERT C. MARTIN, Supervisor of Instructional Television (1967)
Temple University.

MICHAEL D. MARTINOVICH, Instructor in 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.

PRITHWI R. MATTHUR, Instructor in Economics (1969)
B.S., Rajanah University; M.Econ., North Carolina State University, 1967.

JEAN ELLIOTT MATTHEWS, Editor in the University News Service (January 1969)
B.A., Miami University (Ohio), 1968.
GEORGE J. MAUER, Director of Center for Urban Studies, Associate Professor of Urban Studies and Associate Professor of Political Science (July 1970)
B.A., Oklahoma State University; M.P.A., Kansas University; Ph.D., Oklahoma University, 1964.

WILLIAM MAVRIDES, Assistant Professor of Education and Director of Instructional Media (July 1960)

THOMAS H. MAXWELL, Assistant Professor of Education (1969)

JOSEPH T. MAYHAN, Assistant Professor of Electrical Engineering (1969)
B.S.E.E., Purdue University; M.S.E.E., Ph.D., Ohio State University, 1967.

MRS. ALICE MAYOR, Instructor in Chemistry (1967)
B.S., Eastern Michigan University; M.S., Purdue University, 1947.

WILLIAM McCUTCHEON, Assistant Professor of History (1968)
B.S., M.A., Queens University (Canada); Ph.D., The University of Pennsylvania, 1968.

ALLAN J. McINTYRE, Associate Professor of Modern Languages (1969)
B.A., Williams College; M.A., Columbia University; Ph.D., University of Pennsylvania.

DONALD McINTYRE, Professor of Chemistry, Professor of Polymer Science and Research Associate in the Institute of Polymer Science (1968)
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., 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, 1953; University of Pennsylvania.

MAHON W. McPHERSON, Assistant 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, Assistant Professor of Education (1967)
B.S., West Chester State College (Pennsylvania); M.A., University of Pennsylvania; Ph.D., The Ohio State University, 1966.

EUGENE MEDEVDEFF, Visiting Associate Professor of Management (1970)
B.S., U.S. Maritime Academy; M.A., The University of Akron; Ph.D., Purdue University, 1964.

EBERHARD 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.

JOHN A. MENDIOLA, Assistant Professor of Speech (1968)
B.A., Hiram College; M.A., The Ohio State University, 1955.

J. P. MERCER, Assistant Professor in the Community and Technical College (1965)
B.A., Ohio University; M.A., Western Reserve University, 1958.

ROBERT 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)

DONALD J. METZGER, Assistant Professor of Sociology (1968)
Akron, 1968.

B.A., Youngstown University; Ph.D., University of Pittsburgh, 1968.

DENNIS MEYER, Instructor in Art (1969)

PETER D. MILETTA, Assistant Professor of Mathematics (1970)
B.A., University of Bridgeport; M.A., Ph.D., Dartmouth College, 1970.

ARTHUR B. MILLER, Associate Professor of Speech (1970)

WILLIAM I. MILLER, Instructor in Modern Languages (1970)
ALOYSIUS E. MISKO, Professor of Secretarial Science (1962)
B.S., Central Michigan University; M.S., Ed.D., University of Michigan, 1962.

JOHN B. MONTRELLA, Assistant Professor in the Community and Technical College (1966)
B.A., College of Wooster; M.A., Rutgers University, 1963.

DENNIS J. MONTRELLA, Assistant Director of Student Financial Aids (1969)
A. of Arts, Trinidad State Junior College; B.S., Kent State University, 1967.

KATHLEEN M. MOORE, Instructor in Elementary Art (1970)
B.S., M.S., Illinois State University, 1968.

MAURICE MORTON, 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.

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., Ohio State University, 1949.

ROBERT J. MRAVETZ, Assistant Professor of Physical Education (1970)

JOHN MULHAIN, Assistant Professor of Geography (1966)

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.

JOSEPH C. MULLIN, Instructor in 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 MUSKAT, Associate Professor of History (1962)

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)

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 NASI, Assistant Professor of Geography (1967)

RICHARD NEAL, Deputy Equal Employment Opportunity Officer (March 1970)

DANIEL NELSON, Associate Professor of History (1970)
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HENRY NETTLING, Controller (February 1964)

WILLIAM A. NEUMANN, Associate Professor of Art (1970)

SAMUEL C. NEWMAN, Professor of Sociology (1951)
B.A., University of Pittsburgh; M.A., Oberlin College; Ph.D., Ohio State University, 1939.

ALLEN C. 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, 1964.

SUSAN M. NOEL, Instructor in Community and Technical College (1970)
B.A., Clarke College; M.S., University of Southwestern Louisiana, 1970.

MRS. GAY L. NOYES, Assistant Professor of Physical Education (1958) (1967)
B.S., Michigan State University; M.A., Kent State University, 1964.

RICHARD F. NOYES, 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., Kent State University; Ph.D., The Ohio State University, 1969.

DOROTHY M. NUNN, Associate Professor of Biology (1967)

OLIVER OCAK, Associate Professor of Education (January 1961)
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SARAH M. ORLOFF, Associate Professor of Education (1963)
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B.S.M.E., University of Missouri; M.S.M.E., Case Institute of Technology, 1951; P.E., Ohio.

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R. R. PLASKIN, Adjunct Professor of Anatomy in the Department of Biology (1967)
The University of Akron, 1930; M.A., The Ohio State University, 1930; M.D., The Ohio State University, 1934; University of Pennsylvania, 1946 (Chief of Surgery, Children's Hospital of Akron).

ARTHUR R. POLOK, 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, Instructor in Sociology (1970)
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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. Foston, 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. Foyts, 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, Assistant Professor of Economics (1967)
B.A., Athens Graduate School of Economics and Business Science (Greece); M.A., Ph.D., The 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.

George E. Proch, Instructor in Marketing (1966)

Gerald F. Pyle, Instructor in Geography (1970)
B.A., Kent State University; M.A., University of Chicago, 1968.

Malcolm R. Railey, Associate Professor of Electrical Engineering (1970)
B.S.E.E., M.S.E.E., Ph.D.E.E., the University of Texas 1970. P.E., Texas

Richard C. Railsback, Assistant Director of Student Financial Aids (July 1966)

John H. Ramey, Associate Professor of Sociology (1969)
B.A., M.A., Ohio State University, 1950.

George E. Raymond, Director of Radio and Television Information (August 1961)

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 N. Reichard, Jr., Production Manager of Instructional Television (June 1967)

Howard Reinmuth, Jr., Associate Professor of History (1966)
B.A., M.A., Ph.D., University of Minnesota, 1958; The University of Akron.

Gabriel N. Repasy, Assistant Director of Residence Halls (July 1970)

Jerry L. Rhoeback, 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 Student Center (1969)

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., Idaho College; M.A., Georgetown University; Ph.D., New York University, 1961.

Eugene F. Riebling, Associate Professor of Chemistry and of Polymer Science and Research Associate in Institute for 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)

Mabel Riedinger, Distinguished Professor 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, 1955.

Edward J. Riegler, Assistant Director of the Student Center (July 1968)

Mrs. Wyndel Ann Rivera, Adviser of Women (1969)
B.S., Wilberforce University; M.Ed., Kent State University, 1967.

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 Professor of Polymer Science and Research Associate in the Institute of Polymer Science (1966)
B.S.Ch.E., Washington University; M.S.Ch.E., Ph.D.Ch.E., State University of Iowa, 1962.

David J. Robinson, Instructor in Community and Technical College (1970)
B.S.E.E., The University of Akron; M.S.E., Case Institute of Technology, 1967.

Louis D. Rodabaugh, Associate Professor of Mathematics (1964)
B.A., Miami University; M.A., Ph.D., The Ohio State University, 1938.

Mrs. Linda C. Rodda, Instructor in the Community and Technical College (1967)

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)

Mrs. Margaret F. Rogler, Assistant Professor of Marketing (1948)
B.S., University of Nebraska; M.S., University of Denver, 1944.

William Root, Associate Professor of Education and Director of Teacher Placement (1968)
B.A., M.A., Ph.D., The Ohio State University, 1958.

Henry Rosenquist, Associate Professor of Psychology (1965)
B.S., M.A., Columbia University; Ph.D., Tulane University, 1964.

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.

Mrs. Nancy Hunter Rossi, Instructor in Home Economics (1968)
B.A., M.S., University of Tennessee, 1965.

Marion Albert Rubel, Assistant Professor of Education (1970)
B.A., M.A., University of Northern Iowa; Ph.D., Iowa State University, 1959.

Max M. Rule, Assistant Professor in the Community and Technical College (1965)

Helen Ryan, Instructor in Modern Languages (1968)
B.A., Ohio Wesleyan University; M.A., Middlebury College, 1967.

B.S., M.A., Kent State University, 1961.

Michael J. Rzasa, Vice President for Academic Affairs and Professor of Chemical Engineering (February 1964)
B.E., Yale University; MS., Ph.D., University of Michigan, 1947. P.E., Ohio, Oklahoma.

Donald E. Sabatino, Director of Student Center (1963)

Arjan T. Sadhwani, Assistant Professor of Accounting (1970)

Charles T. Salem, Director of Admissions and Instructor in the Community and Technical College (1968)

Stanley A. Samad, Dean of the School of Law and Professor of Law (1959)
B.A., J.D., University of Cincinnati; L.L.M., Case Western Reserve University, 1959; L.L.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)

Raymond E. Sanders, Assistant Professor of Psychology (1969)

Everett Santee, Jr., Scientific Instruments Technician (1969)
B.S., West Virginia State College, 1962.

Simek Sabirkelle, Assistant Professor of Civil Engineering (1967)
B.S., Robert College (Istanbul, Turkey); M.S., Ph.D., West Virginia, 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 (1965)
B.A., M.A.M., Ph.D., University of Delhi (India), 1958.

Blin B. Scatterday, Associate Professor in the Community and Technical College (1964)
ROBERT G. SCHMIDT, Associate Professor of Sociology (1967)

DONALD W. SCHMIDT, Assistant Professor of Education (1970)

RONALD E. SCHNEIDER, Associate Professor of Physics (1962)
B.S., The University of Akron; M.S., John Carroll University, 1958; Ph.D., Case Institute of Technology, 1964.

H. PAUL SCHANK, 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.

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B.S., Bowling Green State University, 1956.

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LAWRENCE SEXON, Instructor in Speech (1969)
B.S., M.A., Ph.D., Indiana University, 1969.

KENNETH F. SMITH, 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.

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 Women (July 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.

WILLIAM SKEEGAN, Adviser of Men (August 1968)

HOWARD K. SLAUGHTER, Associate Professor of Speech (1967)
B.A., University of California; M.A., University of Hawaii; Ph.D., University of Pittsburgh, 1966.

MARY VERNON SLUSHER, Associate Professor of Accounting (1947) (1954)
B.S., M.S., Virginia Polytechnic Institute, 1931; C.P.A., Virginia.

HENRY F. SMITH, Associate Professor of Music (1947)
HERBERT W. SMITH, JR., Professor of Modern Languages (1956)  
B.A., Brigham Young University; M.A., Ph.D., University of Wisconsin, 1956.

EDWARD M. SOLNSKI, Director of the Computer Center (November 1969)  
B.S., Cleveland State University; M.S., Case Institute of Technology, 1964.

STEPHEN SPANGEHL, Instructor in English (1969)  

MRS. NORMA L. SPENCER, Visiting Instructor in Education (1970)  

SAMUEL SPINAK, Assistant Professor of Music (1968)  
Licentiate, King's College in Sussex (England) 1929; Fellowship, Trinity College in London.

RAMON F. STEINEN, Associate Professor of Education (1969)  
B.A., M.A., Montclair State College; Ph.D., 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.

HOWARD 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.

WALLACE STERLING, Assistant Professor of Speech (1966)  

WILLIAM J. STEVENS, Associate Professor of English (1950)  
B.A., M.A., Dalhousie University (Halifax, N.S.); Ph.D., Western Reserve University, 1959.

WILLIAM STONE, Instructor in English (1966)  
B.A., Bethany College; M.A., University of Maryland, 1966.

BARBARA D. STOODT, Assistant Professor of Education (1970)  
B.S., Ohio University; M.A., Ohio State University, 1965.

WARREN P. STOUTAMIRE, Associate Professor of Biology (1966)  
B.S., Roanoke College; M.S., University of Oregon; Ph.D., Indiana University, 1954.

FREDERICK JOHN STUHM, Adviser of Men (August 1968)  

MRS. EILEEN K. STUZT, Instructor in Nursing (1969)  
Milwaukee Hospital School of Nursing; B.S., University of Wisconsin, 1955, R.N.

PHILIP STUYVESANT, Assistant Professor in Modern Languages (1966)  
B.A., Thiel College; M.A., Ph.D., Western Reserve University, 1970.

MRS. LINDA ELLISON SUGARMAN, Assistant Professor of Accounting (1970)  

RONALD C. SUCH, Assistant Professor of Mathematics (1970)  
B.B.A., John Carroll University; M.S., Western Reserve University; Ph.D., Case Western University, 1968.

MICHAEL N. SUGARMAN, Assistant Professor of Education (1970)  

MRS. JOYCE A. SULLIVAN, Associate Professor of Home Economics (January 1968)  
B.S., M.A., Kent State University, 1963; The Ohio State University.

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., Ohio State University, 1964.

LEON SWARTZBERG, Jr., Assistant Professor of Sociology (1969)  
B.A., City College of New York; M.A., Ph.D., Columbia University, 1969.

LEONARD SWEET, Associate Professor of Mathematics (1959)  
B.A.Ed., The University of Akron; M.Ed., Kent State University; Ph.D., Western Reserve University, 1970.

JAMES D. SWITZER, Instructor 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. SZOE, 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 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., Penn State University, 1962.
E. Barbara Taucci, Associate Professor of Mathematics (1967)
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)

Ronald Taylor, Associate Professor of Art (1964)

James W. Teeter, Associate Professor of Geology (1965)
B.S., M.S., McMaster University; Ph.D., Rice University, 1966.

John W. Telesca, Program Associate in the Institute for Civic Education (1961) (1966)

Stuart M. Terrass, Assistant to the Director of Institutional Research (December 1957)

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.

Douglas David Theaker, Director of Alumni Activities (January 1969)

Alan G. Thomas, Visiting Professor of Polymer Science, NSF Senior Foreign Scientist in the Institute of Polymer Science (January 1970)
M.A., Oxford University.

Lindon C. Thomas, Associate Professor of Mechanical Engineering (1967)
B.S.M.E., Tulia University; Ph.D., Kansas State University, 1967.

B.A., Kent State University, 1948.

Donald C. Thorns, Professor of Electrical Engineering (1967)
B.S.E.E., Texas A & M College; M.S.E.E., Ph.D., The University of Texas, 1958. P.E., New Mexico.

Rudolph J. Tichy, University Architect (May 1967)
B.S. in Architecture, Western Reserve University, 1943.

Eileen Tiedt, Assistant Professor of Nursing (1970)
B.S., Marquette University; M.S., Wayne State University, 1970. R.N.

Irene Till, Associate Professor of Economics (1968)
B.A., Syracuse University; M.A., Radcliffe College; Ph.D., Columbia University, 1937.

David H. Timmerman, Assistant Professor of Civil Engineering (1962) (1967)

Mrs. Arlene Toth, Instructor in English (1969)

Evelyn M. Tovey, Professor of Nursing (1950)
B.S.N., M.S.N., Western Reserve University, 1950; R.N.

Wiley Tuveett, M.D., Adjunct Professor of Anatomy (October 1967)
Chief of Surgery, Akron General Hospital.

George W. Trivoli, Associate Professor of Finance (1970)
B.S., Grove City College; M.B.A., Duquesne University; Ph.D., University of Virginia, 1970.

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.

David D. Van Fleet, Assistant Professor of Management (1970)
B.S., Ph.D., University of Tennessee, 1969.

Miss Ellumay Van Fleet, Assistant Professor in Community and Technical College (1970)
B.S., Tennessee Technological University; M.S., Ed.D., University of Tennessee, 1969.

Donald S. Vrian, Associate Professor of Speech (1934)
B.A., M.A., University of Wisconsin, 1934.

Mrs. Kathryn Vegso, Adviser of Women and Director of Women's Activities (February 1959)
B.S., University of Illinois; M.S.Ed., The University of Akron, 1963.

Dale E. Wagner, Instructor in Political Science (1969)
B.A., Drake University; M.A., American University, 1967.
EDWIN E. WAGNER, Professor of Psychology (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 Community and Technical College (1966)

DAVID S. WALKER, Assistant Professor of Law (1969)
B.A., Yale University; LL.B., University of Virginia, 1969.

SUSAN MCKEY WALLER, Adviser of Women (1969)
B.S., M.S., Indiana University, 1969.

JOSEPH M. WALTON, Assistant Professor of Education (1970)
B.S., University of Cincinnati; M.Ed., Xavier University, 1964.

JOAN E. WARNER, Assistant Professor of Secretarial Science (January 1964)
B.S., M.S.Ed., The University of Akron, 1966.

NORMAN F. WASBURN, Professor of Sociology (1960)
B.A., University of Missouri; M.A., New School of Social Research; Ph.D., Washington University, 1953.

MRS. VIRGINIA J. WATKINS, Assistant Professor in the Community and Technical College (1967)

JOHN STEWART WATT, Associate Dean of the College of Education and Professor of Education (1956)

THOMAS DEWITT WEBB, Instructor in Art (1970)

WILLIAM V. WEBB, Instructor in the Community and Technical College (1968)
B.A., University of Notre Dame; M.S., John Carroll University, 1960.

WYATT M. WEBB, Assistant Professor of Education (1967)
B.S., The University of Akron; M.S.Ed., University of Cincinnati; Ph.D., The Ohio State University, 1967.

PAUL A. WEINEN, Professor of Political Science (1968)
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 Community and Technical College (1969)

DAVID M. WELS, Associate Professor of Education (1967)
B.A., Loros College; M.Ed., Ohio University; Ph.D., The Ohio State University, 1967.

FRANCIS J. WESNER, Instructor in Psychology and Counselor in Testing and Counseling Bureau (August 1950)

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.

ROBERT J. WHEELER, Professor of Civil Engineering (1969)

MRS. DORLA WHIPPLE, Instructor in Sociology (1970)
B.A., Boston University; M.A., Kent State University, 1968.

JOHN WIANDT, Senior Accountant (July 1967)

ROBERT J. WIILEY, Associate Professor of Law (1968)
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., Kent State University, 1968.

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 (1969)
B.S., M.S., Ph.D., The Ohio State University, 1969. 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 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, 1951.

MARY E. WILSON, Instructor in English (1969)  

MARY H. WILSON, Assistant Professor of Home Economics (April 1943)  
B.S., Iowa State College, 1932.

PAUL WINGARD, Associate Dean of Buchtel College of Arts and Sciences and Professor of Geology (February 1966)  
B.A., M.S., Miami University; Ph.D., University of Illinois, 1960.

DAVID WINKLER, Research 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.

NEAL WOLFE, Lecturer in Community and Technical College (July 1966)  

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)  

MICHAEL D. WROBLEWSKI, Assistant Professor of Education (1970)  
B.S., M.A., University of Wisconsin, 1965.

ROBERT W. YOUNG, Assistant Professor of Bibliography and Subject Librarian, Science and Technology (June 1967)  

GARY YUKI, Assistant Professor of Psychology (1969)  
B.A., M.A., Occidental College; Ph. D., University of California (Berkeley), 1967.

HANS ZBINDEN, Instructor in Modern Languages (1965)  

GIORGIO ZECCHINI, Instructor in Modern Languages (1969)  
Laurea, University of Bocconi; M.A., University of Maine, 1968.

**Part-Time Faculty**  
(Credit Courses)

LOUIS W. ARES, Lecturer in Business and Office Technology  

GEORGE H. ADAMS, Lecturer in Engineering Technology  

MRS. SNEZANA AKPINAR, Lecturer in General Studies  

DONALD ALLCORN, Special Instructor in Tuba  

HOWARD ALLISON, Lecturer in Law  

FAJAR ARDALAN, Lecturer in General Studies  

MYRON J. BARDEN, Lecturer in Accounting  

JOHN BENCHER, Lecturer in History  

MRS. CAROLE BHATNAGAR, Lecturer in Speech  

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  
B.A., The University of Akron; M.S.L.S., Kent State University, 1966.

BARRIE BODDEN, Lecturer in Political Science  
B.A., Birmingham-Southern; B.D., McCormick Theological Seminary, 1955.

MRS. MARY A. BOEHNLEIN, Lecturer in Education  
B.S., St. John's College; M.A., Kent State University, 1965.

DANIEL X. BOUCHER, Lecturer in Speech  

ROBERT BOWERS, Lecturer in Engineering Technology  
B.S.M.E., The University of Akron.

LESLEY J. BOWSER, Lecturer in Finance  

PHILIP K. BREWER, Lecturer in Philosophy  
B.S., Bowling Green State University, 1967.

MERLIN C. BRUNER, Lecturer in Law  
B.S., University of Wichita; J.D., The University of Akron, 1966.

THOMAS O. BROWN, Lecturer in Education  
B.S., M.A., Ph.D., Mississippi State University, 1968.

ALAN D. BROWNING, Lecturer in Economics  
B.S.B.A., Ohio State University; M.B.A., University of Alaska, 1967.

THOMAS BURNETT, Lecturer in Civil Engineering  
B.A., Baldwin-Wallace College; B.S.C.E., Case Institute of Technology; M.S.C.E., The University of Akron, 1969.

ELEANOR F. CAMPBELL, Lecturer in English  

LAURENCE D. CARLSON, Lecturer in Marketing  
B.S.B.A., Kent State University; M.B.A., The Ohio State University, 1967.

JOHN D. CHAPMAN, Lecturer in Finance  
B.A., Yale University, 1947.

ROBERT C. CONGLETON, Lecturer in Psychology  
B.A., Butler University; M.A., Kent State University, 1968.

DANIELL. CROGHAN, Lecturer in Associate Studies  
B.S., Kent State University; M.A., The University of Akron, 1968.

JAMES COSGAREA, Lecturer in General Studies  
B.A., Mount Union College; M.A., Ohio University, 1962.

ROGER A. CRAWFORD, Lecturer in Chemistry  
B.S., University of Illinois; M.S., Oregon State University, 1959.

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JAMES CROWE, Special Instructor in Voice  

JOHN A. DAILY, Lecturer in Management  

MRS. ALICE DARR, Lecturer in Education  
B.S. in Education, Illinois State University; M.S., Southern Illinois University, 1957.

GEORGE J. DARR, Lecturer in Associate Studies  

JAMES E. DOMBO, Lecturer in the Community and Technical College  
B.S.Ed., M.E., Kent State University, 1955.

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B.S., Ohio State University; LL.B., Franklin University; J.D., Capital University, 1964.

MRS. JANE DUNLAP, Lecturer in English  
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HUGH DURKIN, Lecturer in Accounting

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B.S., University of Oklahoma; Ph.D., Texas A & M, 1959.

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B.S.Ed., Morris Harvey College; M.S.Ed., Kent State University, 1959.

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MRS. ANITA EXLINE, Special Instructor in Flute
B.A., The University of Akron, 1942.

RAYMOND L. FALCONE, Lecturer in Speech

MRS. JOANNE FARKAS, Lecturer in Education

NICKOLAS FIGETAKIS, Lecturer in Psychology
B.A., The University of Akron; M.A., Kent State University; Ph.D., Michigan State University, 1963.

GLEN E. FINCHER, Lecturer in General Studies

MRS. JUDITH A. FLASCO, Lecturer in General Studies

MRS. CAROL FLAUMENHAFT, Lecturer in History

MRS. DORIS FLEISCHER, Lecturer in General Studies

FLORENCE FLETCHER, Lecturer in Speech
B.F.A., Ohio University; M.A., Western Reserve University, 1948.

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J. WILLIAM FREEMAN, Lecturer in Law
B.S.M.E., Case Western Reserve University, 1945.

HALLECK D. FYE, Jr., Lecturer in Journalism
B.A., University of Michigan, 1940.

ALLEN M. GARMENTSFELD, Lecturer in Education
B.S., Ashland College, 1958.

ROBERT N. GANDEE, Lecturer in Physical Education

PAUL A. GILMORE, Lecturer in Mathematics
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B.A., Miami University (Ohio); J.D., Harvard University, 1948.

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MAX E. GRIFFIN, Lecturer in Speech
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College of Engineering

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College of Education
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College of Business Administration

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College of Fine and Applied Arts

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College of Nursing

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JOE W. WOOD, Supply Sergeant (September 1969)
Staff Sergeant.

JO ANN BECKER, Administrative Clerk (December 1969)
SP5.

JOHN J. QUELAN, Administrative Clerk (August 1969)
SP4.

AIR FORCE

LEO M. NEFF, Professor of Aerospace Studies (August 1968)
B.A., McKendree College, 1960. Colonel, USAF.

RICHARD E. CUTTFORTH, Assistant Professor of Aerospace Studies (September 1969).
B.S.C.E., Bradley University, 1960. Major, USAF.

NEIL R. BEARCE, Assistant Professor of Aerospace Studies (June 1968)
B.A., University of Maryland, 1963. Captain, USAF.

ROBERT E. CORNER, Assistant Professor of Aerospace Studies (June 1968)
B.A., Rutgers University, 1960. Captain, USAF.

RICHARD D. CONN, Assistant Professor of Aerospace Studies (May 1970)
B.A., Ohio State University; M.B.A., University of Utah, 1969. Captain, USAF.

ROBERT G. HESTLAND, Detachment Sergeant Major (June 1967)
Technical Sergeant, USAF.

WALTER C. THORNTON, Administrative Specialist (February 1969)
Staff Sergeant, USAF.

WILLIAM F. WATCHORN, Administrative Specialist (February 1969)
Staff Sergeant, USAF.

ROBERT A. LOWE, Administrative Specialist (October 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.

C. STAFFORD WHITTY, Consultant on Rubber Research and Professor Emeritus of Rubber Chemistry (1942)
B.A.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. PETTERS, Research Associate, Assistant Professor of Polymer Science and Assistant Professor of Chemistry (1971)
B.A., College of Wooster; Ph.D., The University of Akron, 1962.
JOHN E. FREDDERICK, 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 HARBOW, Research Associate, Professor of Polymer Science and Professor of Chemistry (October 1959)
B.S., The University of Akron; Ph.D., Yale University, 1956.
JOSEPH F. KENNEDY, Research Associate, Professor of Polymer Science and Professor of Chemistry (1970)
B.S.c., 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. IRMA ARMSTRONG, 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, 1969.
EUGENE F. RIEBLING, Research Associate, Associate Professor of Polymer Science and Associate Professor of Chemistry (1969)
B.S.c., Rutgers University; M.S.c., University of New Hampshire; Ph.D., Rutgers University, 1961.
ROBERT W. ROBERTS, Research Associate, Associate Professor of Chemical Engineering, and Associate Professor of Polymer Science (1966)
B.S.Ch.E., Washington University; M.S.Ch.E., Ph.D.Ch.E., State University of Iowa, 1962.
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, 1969.
CHARLES 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.
ICKSAM NIN, Postdoctoral Fellow (1970)
B.S., Seoul National University; M.S., Ph.D., Seoul National University (1968).
THOMAS ABOTT, Research Assistant (1969)
GEORGE H. ARMSTRONG, Research Assistant (1969)
B.S., Knoxville College; M.S., Atlanta University, 1965.
FLORINE A. BLOUN, Research Assistant (1969)
B.S., M.S., Louisiana State University, 1956.
RONALD BOCKRATH, Research Assistant (1966)
B.S., Bowling Green State University, 1966.
ROBERT C. CHANG, Research Assistant (1969)
B.S., Tunghai University (Taiwan); M.S., Oklahoma State University, 1965.
TZE CHIANG CHENG, Research Assistant (1968)
B.S., Taipei Institute of Technology (Taiwan); M.S., Virginia Polytechnic Institute, 1962.
ROBY-ROY SHARON CHIANG, Research Assistant (1969)
B.S., National Taiwan University, 1968.
DAN-SAM CHIU, Research Assistant (1969)
TOM MINC 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, Research Assistant (1970)
ROBERTO DELGON, Research Assistant (1969)
B.S., Universidad Natl. Autonoma de Mexico, 1967.
NITIN DESAI (1969)
B.Sc., St. Xavier's College (India), 1967.
LIE K. DJIAWU, Research Assistant
B.S., Chinese University; M.S., The University of Akron, 1970.
JIRI DRONNY, Research Assistant (1970)
M.Sc.Ch.E., Technical College of Chemistry (Prague), 1956.
LOUIS A. FALVO, General Tire Fellow (1967)
B.S., M.S.Ch.E., Massachusetts Institute of Technology, 1964.
EDWARD M. FERRA, Research Assistant (1968)
B.A., University of Bridgeport; M.S., University of Maryland, 1969.
KLAUS P. GOETZE, Research Assistant (1970)
B.S., University of Akron; M.S., University of Massachusetts, 1970.
SUAT H. GOV, Research Assistant (1968)
B.S., Nanyang University; M.S., The University of Akron, 1966.
DAVID P. GRUBER, Research Assistant (1970)
B.S., Ohio State University, 1965.
Dwight Keith Hoffman, Research Assistant (1969)
B.S., Valparaiso University, 1969.
John E. JOHNSTON, Research Assistant (1970)
B.S., University of Notre Dame, 1970.
WILLIAM A. JUDD, Research Assistant (1968)
B.S., Case-Western Reserve University, 1964.
Vasanth E. KAMATH, Research Assistant (1966)
HIDEKI KATO, (1969)
B.S.Ch.E., University of Parana 1967.
DALE R. KELLER, N.S.F. Fellow (1969)
B.S., Youngstown State University, 1960.
Ole Kramer, Research Assistant (1969)
Tiong H. Kuan, Research Assistant (1968)
B.S.Ch.E., De La Salle College (Philippines), M.S., The University of Akron, 1970.
Cheong-Yi Kuo, Research Assistant (1969)
B.S.Ch.E., National Taiwan University; M.S., The University of Akron, 1969.
Chen-Kun LAN, Research Assistant (1968)
B.S., National Taiwan University, 1967.
Eui-Kack Lee, Research Assistant (1968)
B.S., Yonsei University (Korea), 1965.
Ka-Ngo LEUNG, Research Assistant (1970)
B.S., Chung-Chi College, Chinese University of Hong Kong, 1968.
Michael W. Lindsay, Jr., Phillips Fellow (1969)
B.S., Seattle University, 1960.
Lyle O. Malotky, Research Fellow (1968)
Devendra V. Mehta, Research Fellow (1965)
M.S.Ch., LL.B., University of Gujarat, India; B.S., M.S.Ch.E., University of Missouri at Rolla, 1965.
Bernard H. Meyer, Research Assistant (1966)
B.S.Ch.E., University of Cincinnati, 1954.
Sharell L. MIKESELL, NDEA Fellow (1968)
B.A., Olivet Nazarene College; M.S., The Ohio State University, 1968.
Pranab K. MOOKERJEE, Research Assistant (1968)
B.S.Ch.E., Jadavpur University (Calcutta); M.S.Ch.E., Wayne State University, 1966.
Richard J. Murphy, Ethyl Fellow (1969)
B.S., National College of Rubber Technology, 1966.
Simone Moznar, Research Assistant (1969) .......
DANIEL L. Neumann, Research Assistant (1966)
B.S., Purdue University, 1966.
Michael H. QUINN, Research Assistant (1969)
B.S., Duquesne University; M.S., West Virginia University, 1967.
Srinivasan Renjachary, Research Assistant (1969)
B.S., University of Madras; B.Sc. (Tech), M.Sc. (Tech), University of Bombay, 1969.

Arthur B. Robertson, Research Assistant (1969)
B.S., Marshall College; M.S., The University of Akron, 1968.

Nicholas A. Rounds, Research Assistant (1969)
B.Ch.E., University of Cincinnati, 1966.

David B. Russell, Research Assistant (1969)
B.S., University of Michigan, 1963.

David M. Schwaber, Research Assistant (1968)
B.S., West Chester State College; M.S., Cornell University, 1966.

Charles E. Seene, Research Assistant (1970)
B.S., Lincoln University, 1970.

Floyd Shepherd, Research Assistant (1969)

Lloyd Shepherd, Research Assistant (1969)

Anthony M. Sherman, Research Assistant (1970)

Eugene L. Słagowski, Research Assistant (1968)
B.S., University of Wisconsin, 1960.

Richard R. Smith, Research Assistant (1967)

Sung Young Tark, Research Assistant (1969)
B.S., M.S., Fort Hays Kansas State College, 1969.

Timothy T. Taylor, NDEA Fellow (1969)
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.

Randi Tunc, Research Assistant (1970)
M.S.M.E., Villanova University, 1970.

Kishore Udipi, Research Assistant (1968)
B.S., B.S. (Tech), M.S. (Tech), University of Bombay, 1963.

Chao Hsiung Wang, Research Assistant
B.S., Taiwan Provincial Cheng Kung University, M.S., University of Akron, 1968.

James C. West, Research Assistant (1966)
B.S., Marietta College; M.S., The University of Akron, 1966.

Joseph Zyzonas, Research Assistant (1967)
B.S., Loyola University; M.S., St. Joseph's College, 1967.

INSTITUTE FOR CIVIL 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)

Mrs. Mary Elizabeth Chesrown, Assistant Director of the Institute for Civic Education (May 1965)


CENTER FOR URBAN STUDIES

George J. Maurer, Director of the Center for Urban Studies
B.A., Oklahoma State University; M.P.A., University of Kansas; Ph.D., University of Oklahoma, 1964.

Edward W. Hanten, Associate 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.

William S. Hendon, Associate Director of the Center for Urban Studies, Associate Professor of Economics and Associate Professor of Urban Studies (1968)
HUGH F. COYLE, JR., Assistant Director of the Center for Urban Studies (1969)
ELTON MISHA, Research Assistant in the Center for Urban Studies (1969)
B.S., North Carolina A & T College; M.S., Atlanta University, 1964.

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, 1949; Ed.D., Western Reserve University, 1963.

ELLEN BAER, Coordinator of Services and Associate Professor of Speech (1966)

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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, 1949; Ed.D., Western Reserve University, 1963.

ELLEN BAER, Coordinator of Services and Associate Professor of Speech (1966)
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 F. Auburn, B.A., D.Sc., Litt.D., L.H.D., LL.D. ......... 1951-

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 Summer, Ph.D. .................................................. 1960-1962
George Kneppe, Ph.D. ................................................... 1962-1967
Don A. Kreister, Ph.D. .................................................. 1967-1969
John Bachmann, Ph.D. (acting) ....................................... 1969-1970
Robert A. Oetjen, Ph.D. ................................................ 1970-

THE COLLEGE OF ENGINEERING

R. D. Landon, C.E., M.S. .............................................. 1946-1963
W. M. Petry, M.S.E. (acting) ........................................ 1963-1964
Michael J. Rosas, Ph.D. ............................................... 1964-1970
Coleman J. Major, Ph.D. .............................................. 1970-

THE COLLEGE OF EDUCATION

*W. J. Bankes, M.A. ...................................................... 1921-1931
*Albert I. Spanton, M.A., Litt.D. (acting) ......................... 1931-1933
*Howard R. Evans, Ph.D. .............................................. 1933-1942
Hjalmer W. Distad, Ph.D. (acting) .................................. 1942-1944
*Howard R. Evans, Ph.D. .............................................. 1944-1958
D. J. Guzzetta, Ed.D., LL.D. (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
Wilbur Earle Benson, Ph.D. ......................................... 1968-1970
James W. Dunlap, Ph.D. (acting) .................................. 1970-

THE SCHOOL OF LAW

Stanley A. Samad, J.S.D. ............................................... 1959-

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) 1955-1957
Ernest H. Cherrington, Jr., Ph.D. (Dean of the Division) ......... 1960-1967
Arthur K. Brittain, Ph.D. (Dean of Graduate Studies and Research) 1967-1968
Edwin L. Lively, Ph.D. .................................................. 1968-

THE GENERAL COLLEGE

D. J. Guzzetta, Ed.D., LL.D. ......................................... 1959-1962
Thomas Summer, 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) ................................ 1953-1956
D. J. Guzzetta, Ed.D., LL.D. (Dean) ................. 1956-1959
William A. Rogers, Ed.D. (Dean)..................... 1959-1967
Charles V. Blaig, M.A. (Dean) ........................... 1967-1970
John G. Hedrick, M.A. (Dean) ............................ 1970-

THE COMMUNITY AND TECHNICAL COLLEGE
W. M. Petry, M.S.M.E. ........................................ 1964-

THE COLLEGE OF FINE AND APPLIED ARTS
Ray H. Sandefur, Ph.D. ........................................ 1967-

THE COLLEGE OF NURSING
Estelle B. Naes, Ph.D. ........................................ 1967-
* On record June 1, 1970.
* Deceased

Current Members of
College and School Advisory Committees
1970

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THE COLLEGE OF ENGINEERING
Mr. D. F. Behney, Mr. G. L. Bruggemeier, Mr. E. F. Dismeyer, 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, William R. Rohlin, 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 B. Fair, Mr. Ralph Gillman, Mr. Charles Hazlett, Mr. Robert Hedrick, Mr. Allen E. Howland, Mrs. Donald Minnig, Mr. Howard Netlzy, Mr. Conrad Ott, Mr. W. S. Parry, Mrs. George Seeley, Mr. R. E. Wilkins, Dr. Harold Wilson.

THE COLLEGE OF BUSINESS ADMINISTRATION
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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. C. Robertson, Mrs. Sol Sick, Mrs. Guido Stempel.
THE COLLEGE OF NURSING
Sister Mary Bridget, Dr. Douglas M. Evans, Mrs. William Falor, Miss Mary Knapp, Dr. Joseph Lichty, Mr. S. H. Moutchtle, Mr. Earl Raymer, Mr. Roger Sherman, Mrs. Lillie Mae Steadman, Mr. Dave Towell, Judge William Victor, Dr. J. T. Villani, Mr. Jason Wade, Dr. Evangeline Witzeman.

THE SCHOOL OF LAW
The University of Akron School of Law Committee of the Akron Bar Association serves as the Advisory Committee to the College of Law. Members are Mr. Allen B. Diefenbach, Chairman; Mr. Hollis Allan, Mr. Bruce W. Bierree, Mr. Lisle M. Buckingham, Mr. Paul K. Christofor, Mr. Raymond Elliott, Mr. W. Howard Fort, Mr. John Guldin, Mr. Oscar A. Hunsicker, Jr., Mr. Robert W. Laundrie, Mr. John J. Lynett, Mr. C. Blake McDowell, Sr., Judge Donald B. McFallen, Mr. Louis L. Manes, Mr. Robert H. Maxson, Jr., Judge Theodore R. Price, Mr. Bernard L. Rosen, Mr. Charles Sacks, Mr. David A. Thomas, Mr. Joseph Thomas, Mr. David H. Wilson, Ex-Officio; Mr. Andrew Michaels, Mr. George D. Quillin and Mr. John Ulman.

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., Judge Donald B. McFallen, Mr. Louis L. Manes, Mr. Robert H. Maxson, Jr., Judge Theodore R. Price, Mr. Bernard L. Rosen, Mr. Charles Sacks, Mr. David A. Thomas, Mr. Joseph Thomas, Mr. David H. Wilson, Ex-Officio; Mr. Andrew Michaels, Mr. George D. Quillin and Mr. John Ulman.

THE EVENING COLLEGE
Mr. Stanton H. Brightman, Mr. Ray Campbell, Mr. Chester Conner, Mr. Robert Crane, Mr. Ralph L. Hanna, Mr. Philip C. Karam, Mrs. George Leonard, Mr. Kenneth Nichols, Mrs. Fred Nimmer, Mrs. Z. C. Oseland, Jr., Judge 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. Freisberg, Mr. Howard S. Kane, Mr. Robert Kidney, Mr. G. J. Lambillotte, Mr. D. Bruce Mansfield, Mr. P. W. Perdriau, Mr. N. B. Peterson, Mr. F. B. Pyle, Mr. Bruce M. Robertson, Mr. Clark Sutherland, Mr. H. H. Wiedenmann.

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Donald E. Dominic, M.Ed. ....................................... Assistant Superintendent
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OFFICERS OF OTHER COOPERATING SCHOOLS
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Harold E. Wilson, Ph.D. ........................................ Superintendent of Schools, Cuyahoga Falls
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Eugene J. Miller ................................................... Local Superintendent, Revere
Paul Fadrett ...................................................... Local Superintendent, Boston-Northampton
John Halchin, M.Ed. ............................................... Local Superintendent, Copley
John R. Nicholas ................................................. Local Superintendent, Coventry
Robert Stabile .................................................... Local Superintendent, East Franklin
James T. Tays, M.A. ............................................... Local Superintendent, Green
William Cunningham .............................................. Local Superintendent, Hudson
Jack R. Cordier, M.Ed. ........................................... Local Superintendent, Mogadore
William J. Boliantz, M.Ed. ...................................... Local Superintendent, Nondia Hills
R. C. Schott, M.A. ................................................ Local Superintendent, Norton
Charles L. Rieger, M.A. ........................................ Local Superintendent, Springfield
William S. Mercer, M.A. ........................................ Local Superintendent, Twinsburg
SUPERVISING TEACHERS
Summer and Fall, 1969, and Winter and Spring, 1979


THE ALUMNI ASSOCIATION

An individual who has received a degree from this institution or has completed 32 credit hours 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 1967-1970 year, President William F. Ruhlin '45 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—attracted 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 1969 $91,000 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; Tucson—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’Neill; 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. Atweil; 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. “Gris” Eckert; Kansas—J. Neal Burke.

   Officers of the Alumni Council for 1969-70 are: President—William R. Ruhlin ’48; First Vice President—Mrs. William R. Palmer ’40; Second Vice President—Daniel B. Quillin ’51; Recording Secretary—Mrs. Frank A. Wahl ’60; 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, 1970) Martin O. Chapman ’47; Harvey L. Davis ’37; Barry Hofer ’69; Eugene B. Hollander ’49; Mrs. William A. Palmer ’40; Daniel B. Quillin ’51; Marion S. Richardson ’17; Mrs. Frank A. Wahl ’50; (term expires June, 1971) Mrs. William P. Bray, Jr. ’42; William G. Detwiler ’47; John L. Feudner, Jr. ’34; Mark Figetakis ’55; 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; Michael M. Krino ’38; Donald R. Lindsay ’35; Ray K. Schieb, Jr. ’47; Norman Smith ’28.

   Allen M. Boyer ’42 is Director of Alumni Relations and Director of the Akron U Fund. Douglas D. Theaker ’69 is Director of Alumni Activities.

DIRECTORY OF STUDENT ORGANIZATIONS

GROUPS FOR THE PERFORMING ARTS

Dance Institute
Forensic Union
University Marching Band
University Orchestra
University Singers
University Theatre Guild

PERSONAL INTEREST

Arab Students Organization
Black United Students
Campus Americans for Democratic Action
Chess Club
Collegiate Forum
Ethnocentric Dancers
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

Amateur Radio Club
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
Collegiate Nursing Students
Economics Association
Finance Club
Future Secretaries of America
Geology Club
Home Economics Club
Institute of Electronic and Electrical Engineers
Johnson Club
Philosophy Club
Politics Club
Polymer Graduate Student Association
Psychology Club
Slavic Studies Club
Sociology Club
Student Art League
Student National Education Association
Student Nurses Association
Women in Music

PROFESSIONAL FRATERNITIES

Alpha Chi Sigma—Chemistry
Beta Alpha Psi—Accounting
Delta Sigma Pi—Commerce and 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 Thetas—History
Phi Eta Sigma—Freshman Scholarship
Phi Sigma—Biological Sciences
Pi Delta Phi—French
Pi Omega Psi—Business Education
Pi Sigma Alpha—Political Science
Psi Chi—Psychology
Sigma Delta Pi—Spanish
Society of Physics Students—Physics
(Tau Kappa Phi—Home Economics—L)

OTHER HONOR SOCIETIES

Beta Gamma Sigma—Commerce
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
Christian Science
Eastern Orthodox Fellowship
The Hillel (B’nai B’rith Foundation)
Intervarsity Christian Fellowship
Kappa Phi Club
Lutheran Students Association
Muslim Student Association
Newman Club
GOVERNING ORGANIZATIONS
Associated Women Students
Graduate Student Council
Interfraternity Council
Junior Class
Panhellenic Council

Residence Hall Government Association
Senior Class
Student Center Program Board
Student Council

ATHLETIC ORGANIZATIONS AND INTRAMURAL ATHLETICS
Women’s Recreation Association
Intramural Sports

INDEPENDENT SOCIAL ORGANIZATION
Independent Students Association

SOCIAL FRATERNITIES

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<td>1913</td>
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<td>1932</td>
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<td>Lambda Chi Alpha</td>
<td>1909</td>
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<td>Phi Delta Theta</td>
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<td>Phi Kappa Tau</td>
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<td>Pi Kappa Epsilon</td>
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<td>Sigma Pi</td>
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<td>Phi Kappa Psi</td>
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<tr>
<td>Delta Tau Delta (colony)</td>
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<td>Alpha Gamma Delta</td>
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<td>Delta Zeta</td>
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UNIVERSITY CALENDAR 1970-71

FALL QUARTER, 1970

September 28, Monday
November 25, Wednesday, 4 p.m.
November 26, Thursday
November 30, Monday, 8 a.m.
December 5, Saturday
December 7-12, Monday-Saturday
December 9, Wednesday, 5 p.m.
December 12, Saturday
December 13, Sunday
December 24, Thursday
December 25, Friday
December 31, Thursday
January 1, 1971, Friday

Day and Evening Classes Begin
Thanksgiving Day Holiday Begins
Thanksgiving Day
Classes Resume
Final Instructional Day
Final Examination Period
Grades for December Degree Candidates Due
End of Fall Quarter
Commencement
Christmas Holiday
Christmas Day
New Year’s Holiday
New Year’s Day

WINTER QUARTER, 1971

January 4, Monday
January 14, Thursday
March 13, Saturday
March 15-20, Monday-Saturday
March 17, Wednesday, 5 p.m.
March 20, Saturday
March 21, Sunday

Day and Evening Classes Begin
Founders Day Convocation
Final Instructional Day
Final Examination Period
Grades for March Degree Candidates Due
End of Winter Quarter
Commencement

SPRING QUARTER, 1971

March 29, Monday
April
May
May 29, Saturday, 4 p.m.
May 30, Sunday
May 31, Monday
June 1, Tuesday, 8 a.m.
June 5, Saturday
June 7-12, Monday-Saturday
June 9, Wednesday, 5 p.m.

June 12, Saturday
June 13, Sunday

Day and Evening Classes Begin
Honors Convocation
May Day
Memorial Day Holiday Begins
Memorial Day
Memorial Day Holiday
Classes Resume
Final Instructional Day
Final Examination Period
Grades for June Degree Candidates Due
End of Spring Quarter
Commencement

SUMMER SESSION I, 1971

June 21, Monday
July 2, Friday, 11 p.m.
July 4, Sunday
July 5, Monday
July 6, Tuesday, 7 a.m.
July 23, Thursday
July 23, Friday

June 24, Monday
August 26, Thursday
August 27, Friday

Day and Evening Classes Begin
Independence Day Holiday Begins
Independence Day
Independence Day Holiday
Classes Resume
Final Instructional Day
Final Examination Day and End of First Session

SUMMER SESSION II, 1971

August 30, Monday
September 3, Friday, 11 p.m.
September 6, Monday
September 7, Tuesday, 7 a.m.
September 20, Monday
September 21, Tuesday

Day and Evening Classes Begin
Labor Day Holiday Begins
Labor Day
Classes Resume
Final Instructional Day
Final Examination Day and End of Second Session

POST SESSION, 1971

August 30, Monday
September 3, Friday, 11 p.m.
September 6, Monday
September 7, Tuesday, 7 a.m.
September 20, Monday
September 21, Tuesday

Day and Evening Classes Begin
Labor Day Holiday Begins
Labor Day
Classes Resume
Final Instructional Day
Final Examination Day and End of Post Session
THE UNIVERSITY OF AKRON

1971-1972 Tentative Quarter Calendar

FALL QUARTER 1971

September 27, Monday
October
November 24, Wednesday, 4 p.m.
November 25, Thursday
November 26, Monday, 8 a.m.
December 4, Saturday
December 6-11, Monday-Saturday
December 8, Wednesday
December 11, Saturday
December 12, Sunday
December 30-31, Thursday-Friday
January 1, Saturday

Day and Evening Classes Begin
President's Convocation
Thanksgiving Day Holiday Begins
Thanksgiving Day Holiday
Classes Resume
Final Instructional Day
Final Examination Period
Grades for December Degree Candidates Due
End of Fall Quarter
Commencement
Christmas Day Holiday Begins
Christmas Day Holiday
New Year's Day Holiday Begins
New Year's Day Holiday

WINTER QUARTER 1972

January 3, Monday
January
March 11, Saturday
March 13-18, Monday-Saturday
March 27, Monday
April
May
May 29, Monday, 11 p.m.
May 30, Tuesday
May 31, Wednesday, 8 a.m.
June 3, Saturday
June 5-10, Monday-Saturday
June 7, Wednesday
June 10, Saturday
June 11, Sunday

Day and Evening Classes Begin
Founder's Day Convocation
Final Instructional Day
Final Examination Period
End of Winter Quarter

SPRING QUARTER 1972

March 27, Monday
April
May
May 29, Monday, 11 p.m.
May 30, Tuesday
May 31, Wednesday, 8 a.m.
June 3, Saturday
June 5-10, Monday-Saturday
June 7, Wednesday
June 10, Saturday
June 11, Sunday

Day and Evening Classes Begin
Honors' Convocation
May Day
Memorial Day Holiday Begins
Memorial Day Holiday
Classes Resume
Final Instructional Day
Final Examination Period
Grades for June Degree Candidates Due
End of Spring Quarter
Commencement

SUMMER SESSION I, 1972

June 19, Monday
July 3, Monday, 11 p.m.
July 4, Tuesday
July 5, Wednesday, 7 a.m.
July 20, Thursday
July 21, Friday

Day and Evening Classes Begin
Independence Day Holiday Begins
Independence Day Holiday
Classes Resume
Final Instructional Day
Final Examination Day and End of First Session

SUMMER SESSION II, 1972

July 24, Monday
August 24, Thursday
August 25, Friday

Day and Evening Classes Begin
Final Instructional Day
Final Examination Day, End of Second Session

POST SESSION, 1972

August 29, Tuesday
September 1, Friday, 11 p.m.
September 4, Monday
September 5, Tuesday
September 19, Tuesday
September 19, Wednesday

Day and Evening Classes Begin
Labor Day Holiday Begins
Labor Day Holiday
Classes Resume
Final Instructional Day
Final Examination Day and End of Post Session