THE

YOUNGSTOWN UNIVERSITY

BULLETIN

CATALOG

ISSUE

1965-1966

EVERY ENTERING STUDENT IS ENTITLED TO ONE COPY OF THIS BULLETIN. HE SHOULD RETAIN IT UNTIL HE GRADUATES, SINCE IT IS A GUIDE TO GRADUATION REQUIREMENTS WHICH LATER CHANGES NORMALLY WILL NOT SUPERSEDE.

THE YOUNGSTOWN UNIVERSITY BULLETIN

CATALOG
ISSUE

VOLUME XXXIV FEBRUARY, 1965 NUMBER 1

Second class postage at Youngstown, Ohio. Published in February, March, April, May, and December at 410 Wick Avenue, Youngstown, Ohio 44503. Change of address notices and undeliverable copies should be mailed to the address above.

THE

YOUNGSTOWN UNIVERSITY

BULLETIN

CATALOG

ISSUE

1965-1966

EFFECTIVE SEPTEMBER 1, 1965

YOUNGSTOWN, OHIO

CONTENTS

Accreditation 4

The Academic Calendar 5

General Information 7

- Objectives 7
- Historical Sketch 7
- General Program 8
- Buildings and Facilities 10
- Services and Opportunities 16
- Student Activities 21
- Awards and Prizes 28
- Scholarships and Loans .. 33

General Requirements and Regulations 41

- Admission 41
- General Requirements for Graduation 43
- General Regulations 49
- Fees and Expenses 58
- Course Numbering System and Abbreviations 64

The College of Arts and Sciences 65

- Organization and Degrees 65
- Courses of Instruction and Curriculums 70

The School of Business Administration 147

- Organization and Degrees 147
- Courses of Instruction and Curriculums 150

The School of Education 170

- Organization and Degrees 170
- Courses of Instruction and Curriculums 173

The William Rayen School of Engineering 184

- Organization and Degrees 184
- Courses of Instruction and Curriculums 189

The Dana School of Music 204

- Organization and Degrees 204
- Courses of Instruction and Curriculums 213

Board of Trustees 238

The Administrative Staff 240

Committees of the Faculty and Staff 243

The Watson Foundation Distinguished Professors 244

The Faculty 245

Index 271

ACCREDITATION

The Youngstown University is accredited by the North Central Association of Colleges and Secondary schools: it is accredited by the Department of Education of the State of Ohio as a teacher training institution: and it is on the approved list of the American Medical Association. The William Rayen School of Engineering has the approval of the Engineers' Council for Professional Development for its day and evening curriculums in civil, electrical, and mechanical engineering: and the Dana School of Music of Youngstown University is a member of the National Association of Schools of Music.

The University is a member of the American Council on Education, the Association of American Colleges, and the Association of Urban Universities.

Youngtown University grants the degrees of Bachelor of Arts (A. B.), Bachelor of Engineering (B. E.), Bachelor of Music (Mus. B.), Bachelor of Science (B. S.), Bachelor of Science in Business Administration (B. S. in B. A.), and Bachelor of Science in Education (B. S. in Ed.).

THE ACADEMIC CALENDAR, 1965 - 1966

1965

First Semester

September 9, 10, 11, Thursday, Friday, Saturday	Freshman Days
September 13, 14, Monday, Tuesday	Registration
September 16, Thursday, 8:00 a.m., EDT	Classes begin
November 24, Wednesday, 10 p.m., EST	Thanksgiving vacation begins
November 29, Monday, 8:00 a.m., EST	Thanksgiving vacation ends
December 18, Saturday, 1:40 p.m., EST	Christmas vacation begins

1966

January 3, Monday, 8:00 a.m., EST	Christmas vacation ends
January 17, Monday, 8:00 a.m., EST	Final examinations begin
January 22, Saturday, 1:40 p.m., EST	Final examinations end
January 29, Saturday	Semester ends

Second Semester

January 24, 25, Monday, Tuesday	Orientation
January 28, 29, 30, Wednesday, Thursday, Friday	Registration
January 31, Monday, 8:00 a.m., EST	Classes begin
April 6, Wednesday, 10:00 p.m., EST	Easter vacation begins
April 11, Monday, 8:00 a.m., EST	Easter vacation ends
May 3, Tuesday, 2:00 p.m., EDT	Honors Day
May 16, Monday, 8:00 a.m., EDT	Senior examinations begin
May 21, Saturday, 1:40 p.m., EDT	Senior examinations end
May 23, Monday, 8:00 a.m., EDT	Final examinations begin
May 28, Saturday, 1:40 p.m., EDT	Final examinations end
May 29, Sunday, 7:30 p.m., EDT	Baccalaureate Service
May 31, Tuesday, 7:30 p.m., EDT	Spring Commencement
June 2, Thursday	Semester ends

Summer Session

June 10, 11, Friday, Saturday	Registration
June 13, Monday, 8:00 a.m., EDT	First term of summer session begins
July 4, Monday	Independence Day vacation
July 15, Friday, 10:00 p.m., EDT	First term of summer session ends
July 18, Monday, 8:00 a.m., EDT	Second term of summer session begins
August 19, Friday, 10:00 p.m., EDT	Second term of summer session ends
August 20, Saturday, 10:30 a.m., EDT	Summer Commencement

General Information

OBJECTIVES

It is the aim of Youngstown University to make higher education available to all qualified high school graduates, and especially to those in the communities near the University. High school graduates with superior records are admitted without restriction; those with less satisfactory records may be admitted on condition that they carry a reduced academic schedule. The University recognizes that such a broad admission policy carries with it the obligation to provide academic disciplines of established collegiate standards.

The University seeks to develop in the student the qualities of intellectual and emotional maturity necessary to produce graduates who are economically self-sufficient, socially valuable, and culturally and spiritually mature. As an independent, public, non-sectarian institution the University is free to adopt educational policies which are conducive to the presentation of the varied social, political, economic, religious, and cultural ideas relevant to an understanding of contemporary existence.

The University seeks to serve its community and the nation by being continually alert to the needs of a dynamic society and by providing curriculums to meet those needs without sacrificing the values of a long tradition of liberal education. It strives to do this at the lowest cost to the student compatible with established educational standards and offers class schedules which facilitate self-financed education.

HISTORICAL SKETCH

The Youngstown University had its beginning in 1908 with the establishment of the School of Law of the Youngstown Association School, sponsored by the Young Men's Christian Association. In 1920 the State of Ohio empowered the school to grant the degree of Bachelor of Laws; in the same year the school offered a four-year course in business administration. In 1921 the school changed its name to The Youngstown Institute of Technology, and for the first time liberal arts classes were offered in the evening. In 1927 the College of Arts and Sciences, offering daytime classes for the first time, was started. In 1928 the Institute changed its name to The Youngstown College and in 1930 the college conferred the degree of Bachelor of Arts for the first time.

Dana's Musical Institute, founded in nearby Warren in 1869, became the Dana School of Music of the college in 1941. In 1946, the engineering department, organized several years before, became the William Rayen School of Engineering; two

years later the business administration department became the School of Business Administration: and in 1960, the department of education became the School of Education.

In 1944 the trustees of the Young Men's Christian Association transferred control of the institution to the members of the Corporation of Youngstown College, and in 1955 the corporation was re-chartered as The Youngstown University.

During its earlier years the institution had a number of homes. Starting in the old Central Y. M. C. A. building, it occupied various sites on Wick Avenue until the completion of the present Main Building in 1931. Additional buildings have been constructed and nearby properties converted to University use, so that today the campus extends through much of an area four blocks long and three blocks wide. In 1952 and 1953 the Library and the adjoining John Tod Hall were built; in 1959 the Science Building was completed; and in 1962 Central Hall Annex, housing a dining room and the Bookstore, was built.

THE GENERAL PROGRAM OF THE UNIVERSITY

Youngstown University is a coeducational, non-sectarian, and non-profit organization; it is open to anyone of good character with the proper academic qualifications. Efforts are made to give all necessary guidance and assistance to war veterans.

The University has five main units that offer courses of study leading to degrees:

The College of Arts and Sciences
The School of Business Administration
The School of Education
The William Rayen School of Engineering
The Dana School of Music

Courses in most subjects are offered in both day and evening classes, with no difference in credit toward degrees, and at all hours from 8 a. m. to 10 p. m. Monday through Friday and from 8 a. m. to 1:40 p. m. on Saturday. The main academic year is from September to June, in two seventeen-week semesters. The summer session extends from June to August, in two five-week terms. Courses are so arranged that a student may begin his studies in September, February, or June.

The College of Arts and Sciences

The College of Arts and Sciences aims to provide a liberal education and to prepare students for graduate and professional study. In co-operation with the School of Education it prepares teachers for secondary schools, and some of its other curriculums qualify the student to enter several technical or pro-

fessional fields upon graduation. It provides the arts and sciences courses in the curriculums of the School of Business Administration, Education, Engineering, and Music, including the science courses in the engineering curriculum.

Courses taken primarily in the College of Arts and Sciences lead to one of three degrees: Bachelor of Arts, Bachelor of Science, or Bachelor of Science in Education. The major subject may be art, biology, chemistry, classical studies, dramatics, earth science, economics, education (teacher training), English, food and nutrition (dietetics), French, geography, German, health education and physical education (or either separately), history, home economics, Italian, Latin, mathematics, metallurgy, music, philosophy, physics, political science, psychology, Russian, religion, sociology, Spanish, or speech, or a combination of sciences, social studies, or the humanities. Courses are also offered in astronomy, the Bible, communication (written and oral expression), natural science, geology, Greek, Hebrew, journalism, military science, and nursing.

The School of Business Administration

The School of Business Administration offers courses leading to the degree of Bachelor of Science in Business Administration, with the major in either public or private accounting, advertising, commercial art, general business, management, retail or industrial merchandising, public administration, public relations, traffic and transportation management, or secretarial studies. A two-year curriculum leading to the title of Associate in Business Administration, with a major in almost any of these subjects, is also offered.

The *Secretarial School* also offers a two-year curriculum leading to the title of Associate in Business Administration, and provides the courses for the first two years of study toward the degree of Bachelor of Science in Business Administration with a major in secretarial studies.

The School of Education

The School of Education offers courses leading either to the Bachelor of Arts degree with the major in education or to the Bachelor of Science in Education degree. It also co-operates with the College of Arts and Sciences in providing the professional courses for the degree of Bachelor of Arts with the major in the teaching field, with the School of Business Administration in the preparation of teachers of commercial subjects, and with the Dana School of Music for the Bachelor of Music degree with the major in public school music. The departments of the school are general education, elementary education, secondary education, and special education.

The William Rayen School of Engineering

The William Rayen School of Engineering offers complete courses in six main branches of its field, all leading to the degree

of Bachelor of Engineering: chemical, civil, electrical, industrial, mechanical, and metallurgical engineering.

The Dana School of Music

The Dana School of Music offers complete courses preparing for public school music teaching, sacred music, musical composition, private teaching, and concert performances. Private instruction is available in voice and in all standard instruments. Professional courses lead to the degree of Bachelor of Music, with the major in voice, an instrument, theory and composition, sacred music, or music education; the non-professional student may elect to study for the degree of Bachelor of Arts, with the major in the history and literature of music.

A *Technical Institute,* offering courses not designed to lead to a degree, has been in operation with the co-operation of industrial firms of the Mahoning and Shenango valleys. The program has been conducted on a restricted basis, but present plans are for its expansion into a two-year curriculum leading to a certificate or title.

BUILDINGS AND OTHER FACILITIES

(A map of the campus is printed on the inside of the back cover of this catalog.)

The central group of buildings lies north and west of the junction of Wick and Lincoln Avenues and houses most of the College of Arts and Sciences, the School of Education, and the School of Business Administration. The principal buildings of the Dana School of Music are on Wick Avenue a block north of the main campus, and the William Rayen School of Engineering building is on Wick Avenue about a block to the south. On Wick Avenue, opposite the Dana School of Music, are *Pollock House,* used in part by the College of Arts and Sciences, and *Ford Hall,* which houses the Secretarial School.

The Central Campus

The most prominent of the central group is the *Main Building,* a limestone structure of conventional Tudor style on the northwest corner of Wick and Lincoln Avenues. Built in 1931, it was enlarged in 1949 by the addition of the C. J. Strouss Memorial Auditorium. Besides the University administrative offices and the auditorium, it contains classrooms, and departmental offices of the College of Arts and Sciences and of the School of Education.

The buildings close to the Main Building supplement the classroom, laboratory, and office space of the three schools in the central area and augment the facilities of the music school. Immediately northeast of the Main Building is *East Hall*; to the northwest is the *Women's Physical Education Building*; north of the latter is *West Hall;* and northwest of that is the School of Business Administration office building, facing Bryson Street. North of the Main Building, between West Hall and East Hall,

stands *Central Hall*, a large frame structure, on the first floor of which is a cafeteria, and on the second floor of which are the Health Center and music facilities, including an auditorium.

East of Central Hall, and connected to it, is *Central Hall Annex*, housing an additional dining room and a central receiving room and storage rooms on its upper floor, and the Bookstore on its lower floor. The building is of pink brick with stone trim, in keeping with the Library and Science Buildings.

C. J. Strouss Memorial Auditorium

C. J. Strouss Memorial Auditorium was built in honor of C. J. Strouss, late president of the Strouss-Hirshberg Company and long a devoted friend and trustee of Youngstown University. The hall is an enlargement of a much smaller unit originally contained in the Main Building, of which the newer structure forms a wing. The auditorium seats 800 people, 150 of them in a balcony, and with its large stage provides facilities for concerts, operas, plays, lectures, and assembles.

The Library Building

This building, of pink brick with stone trim, lies along Bryson Street near Spring Street, but has its main entrance at its southeast corner, facing the central campus. For it and the adjoining John Tod Hall, over a million dollars was given by Mahoning Valley firms and individuals, the Association of the Friends of Youngstown University Library, and students and faculty.

In addition to furnishing centralized and completely modern library facilities, with space for over 250,000 volumes, seats for 600 readers, and microfilm and microcard reading facilities, the building contains faculty offices, conference rooms, and a small auditorium designed and equipped for the use of motion picture films, slides, and records. Also provided are individual study carrels, sound-proofed typing booths, a women's lounge, and the Frank Purnell Room, a general smoking and browsing room. Eight typewriters (in the Purnell Room), the gift of the 1954 graduating class, and four Marchant calculators are available to users of the library. The library possesses a collection of long-playing records, from which students and faculty members may select music, plays, or poetry.

John Tod Hall

John Tod Hall, a wing at the north end of the library building, contains nine classrooms and the men's athletic offices. It is named for the late John Tod, a friend of the University and a leading Youngstown philanthropist.

The Science Building

The Science Building, housing the science departments and laboratories of the College of Arts and Sciences and the chemical engineering laboratories of William Rayen School of Engineering, lies to the south of the Library on Bryson Street, with its main entrance facing the campus. It is a four-story pink brick building of functional architecture. It was built at a cost of $1,400,000 provided by Mahoning Valley industries and individuals and was furnished with laboratory equipment valued at $250,000. It contains two atomic laboratories and a reactor room with equipment supplied by the Atomic Energy Commission.

Ford Hall

Ford Hall, at 547 Wick Avenue, was given to the University in 1951 by Judge and Mrs. John W. Ford and Judge Ford's sister, Mrs. Benjamin Agler. It had been the Ford family home. Its grounds, together with those of Pollock House and the Dana School of Music, form the University's north campus. Ford Hall houses the Secretarial School.

Pollock House

Pollock House, at 603 Wick Avenue, across from the Dana School of Music, provides a pleasant and commodious setting for dinners, teas, and other social gatherings. It was given to the University in 1950 by its former owners, Mr. and Mrs. William B. Pollock II. Its two upper floors are used for class rooms and the offices of the military science department, but the spacious parlors, dining room, and kitchen are available to campus groups for specific events.

Clingan-Waddell Hall

The acquisition, renovation, equipment, and maintenance of this building, formerly the Y. M. C. A. Youth Center, was made possible in 1953 through the generosity of Mrs. Jacob D. Waddell and Mr. John R. T. Clingan of Niles, Ohio. Situated on Rayen Avenue just east of Wick Avenue, it houses the mathematics and home economics departments of the College of Arts and Sciences. The basement is used by the metallurgical engineering department of the William Rayen School of Engineering.

Rayen Building

Rayen Building, on the northwest side of Wick Avenue southwest of Rayen Avenue, is the former home of the Rayen School, the first secondary school in Youngstown, founded and long maintained with private funds but eventually incorporated into the city's school system. After Rayen School had moved

to larger headquarters, the building was made available to Youngstown University and now houses the William Rayen School of Engineering.

The Student Center and the Campus Development Plan

The first building to be constructed as part of the University's Campus Development Plan will be a Student Center. The Center will include a dining room, coffee shop, lounges, and classrooms. The first floor of its dormitory wing will house student offices and meeting rooms. A gift of $300,000 has been made to the Center by the William H. and Mattie M. Kilcawley Foundation, to which gifts from industry and from alumni and student funds have been added.

Libraries

The holdings of the University library total about 135,000 volumes, and are increased by about 5,000 each year. The periodical list includes over 900 titles.

The Dana School of Music library contains a working collection of scores and recordings, together with record-playing equipment: but the major music holdings, including such sets as the complete works of Bach, Beethoven, Brahms, and Mozart, are in the University library's main collection.

The Friends of Youngstown University Library, organized in 1938 by the Youngstown Branch of the American Association of University Women, has contributed through its annual drives about $215,000 for books and equipment and for the present building.

Loan Privileges. Students may take books out for at least two weeks at a time. Faculty members may retain them for a semester, subject to recall if needed. Library privileges are extended to alumni, and to members of The Friends of Youngstown University Library, upon application.

The main building of the Public Library of Youngstown and Mahoning County, with 196,000 books and 475 periodicals, is on Wick Avenue at Rayen Avenue, close to all parts of the University campus.

Laboratories

Biology, chemistry, geology, and physics laboratories are in the Science Building: the language laboratory is in the Main Building. The engineering laboratories, in the Rayen Building and Clingan-Waddell Hall, are described in the William Rayen School of Engineering section.

The *biology* laboratories are equipped for individual performance of standard exercises in all basic courses and in the more advanced phases of embryology, histology, and anatomy. For the study of local flora and fauna, Mill Creek Park provides an excellent natural area of over three square miles and also a museum.

The *chemistry* laboratories have individual equipment for standard experiments in general, biological, and physical chemistry, qualitative and quantitative analysis, organic preparations, and organic analysis. Special equipment affords means for extensive work in instrument analysis.

The *geology* laboratory is equipped to familiarize the student with common rocks, minerals, and fossils. Aerial photographs and topographic and geologic maps are utilized in the study of landforms and geologic structures of various localities.

The *language* laboratory is equipped with a console and thirty booths, each containing a tape deck. Three programs may be sent out simultaneously to the booths from the console's two tape decks and record player. Responses may be monitored and recorded at the console. Students may borrow tapes from the tape library to play at the booths for listen, listen-respond, or listen-record-playback practice. Tapes containing drill material co-ordinated with the text books are available, as well as other drill and cultural material.

The *general physics* laboratories are fully equipped for college-level experiments. The equipment consists of a few pieces of many types of apparatus rather than of many pieces of a few types. Such a distribution makes possible a year-to-year flexibility in the program for freshmen and sophomore physics students. The experimental work in the general physics laboratories is designed to reinforce the classroom emphasis on the concepts, ideas, and laws of physics.

The *advanced physics* laboratories, adjacent to the general physics laboratories, are reserved for the more difficult experimental work required of junior and senior physics majors. The work in these laboratories is designed to emphasize experimental techniques and precise measurement of physical quantities.

Physical Education Facilities

The Women's Physical Education Building provides offices, classrooms, a gymnasium, and showers for women's health education and physical education activities. There is a playing field behind Ford Hall and a tennis court near the same building. The University also uses the facilities of the Y. M. C. A., about four blocks away; the Y. W. C. A. swimming pool, one block away; Harrison Field, east of Wick Avenue; and the well-equipped Volney Rogers sports field in Mill Creek Park. Varsity teams use Rayen Stadium and South Field House by arrangement with the Youngstown Board of Education; Stambaugh Field, the gift of Mr. Arnold Stambaugh, for practice; municipal tennis courts; and the Logan Driving Range.

R. O. T. C. Facilities

Modern equipment for instruction in military science includes small arms, communications material, and associated training material. Additional items are procured as they become available from Army stocks. Drill periods are conducted at Harrison Field, just east of the main campus. Range facilities for firing the caliber .22 ribe are also available. For further information, see *Military Science*, in the College of Arts and Sciences section.

Parking Areas

Parking facilities for students include a large lot on the east side of Wick Avenue between Lincoln Avenue and Spring Street; a lot on Spring Street east of Wick Avenue, behind Ford Hall; another at the southwest corner of Bryson and Spring Streets; and a large one on Scott Street, between Bryson Street and Wick Avenue. Faculty members use two lots in the central area and one north of the library. A lot at the Rayen Building serves both faculty members and students. Students are not permitted to drive into the main campus.

Neighboring Facilities

A number of community facilities have been made available for University use. Mill Creek Park is exceptionally favorable for biological study; through the social agencies of the city, sociology students may do practical social work; and Youngstown radio and television stations grant the University the use of their time and equipment. Several rooms in the Youngstown Board of Education building are used for classrooms by the William Rayen School of Engineering. Continuous or occasional use is also made of various other facilities of such agencies as the City of Youngstown, the Youngstown Board of Education, the Mahoning Chapter of the American Red Cross, the Mahoning County Tuberculosis and Health Association, the Board of Park Commissioners of the Youngstown Township Park District, the Girard Board of Education, the Public Library of Youngstown and Mahoning County, the Butler Institute of American Art, Stambaugh Auditorium, St. John's Protestant Episcopal Church, St. Joseph Roman Catholic Church, and First Presbyterian Church. Reciprocal agreements for the use of certain equipment are in effect with the Public Library.

Youngstown University is grateful to these and other agencies for their generosity and helpfulness in meeting a community need. The spirit of co-operation thus manifested is a healthful one and engenders a favorable atmosphere in which to carry forward the program of the University.

SERVICES AND OPPORTUNITIES

The Bookstore

The Youngstown University Bookstore, on the lower floor of Central Hall Annex, sells textbooks and other required supplies. Other stores in the Youngstown area do not stock most University textbooks and are not authorized to issue books or materials on Veterans Administration book orders except for certain items. On the other hand, the Bookstore does not attempt to compete with other stores in the area and carries only a few items beyond those prescribed for courses. It does, however, stock in limited quantities a wide selection of standard works in inexpensive editions, because of their value as collateral reading. The Bookstore will order any book on specific request and a suitable down payment.

Cultural Opportunities

Youngstown University students have unusual opportunities for hearing a wide range of the best in music. Besides programs by the faculty, students, and organizations of the Dana School of Music, there are concerts by the Youngstown Philharmonic Orchestra, concerts sponsored by the Monday Musical Club, and recitals under the auspices of the American Guild of Organists. These activities bring to Youngstown some of the world's greatest musical artists.

In the field of drama, students may enjoy not only University plays but also the productions of the Playhouse, an excellent amateur organization, in whose plays members of the University community frequently participate.

Creative talent also finds opportunity on the air, with University programs broadcast from three television and three radio stations in the city. Three radio stations in nearby communities also invite students to participate in their programs.

Student art work is exhibited throughout the year in the University library, with exhibits changing bimonthly, thus enabling all interested students to participate.

Immediately adjacent to the University is the Butler Institute of American Art, a building of great architectural beauty, which contains valuable permanent collections of paintings and other art treasures and has frequent temporary exhibits of high importance.

Another civic building not far from the campus is Stambaugh Auditorium, which houses one of the great organs of the country and provides ample facilities for lectures, dances, musical programs, and other functions, including the University commencement exercises. The main hall, noted for its acoustic excellence, seats 2,600 people. Many visiting artists have expressed their appreciation of this beautiful auditorium.

Religious Opportunities

The Young Men's Christian Association, the Young Women's Christian Association, and many churches are within easy walking distance of the University. Three chaplains have full-time offices on the campus, one supported by the Roman Catholic Diocese of Youngstown, one by the Council of Churches of Youngstown and Vicinity, and one by the Orthodox Catholic Churches of the community. There are active student religious organizations, whose activities include student-led services, regular radio broadcasts, and participation in the annual Religious Emphasis Week.

Chapel and Assembly

Chapel services are held at St. Joseph Church for Roman Catholic students and at St. John's Protestant Episcopal Church for Protestant students. Both churches are close to the campus.

University assemblies take place in the C. J. Strouss Memorial Auditorium.

Social Opportunities

Youngstown University students are offered frequent social opportunities. Through the dances and receptions sponsored by Student Council, fraternities, and other campus groups, and through the other activities of these organizations and of the various special-interest clubs, opportunity is afforded to meet faculty members and fellow-students and to develop pleasant associations and friendships. Pollock House and the Frank Purnell Room of the library afford attractive settings for social hours, and the cafeteria in Central Hall and the Snack Bar in West Hall provide a casual atmosphere for relaxation. In addition, activities at the Y. M. C. A., the Y. W. C. A., and at various churches are open to all who are interested, and women students living at Buechner Hall may participate in activities there.

Counseling and Guidance

Students who have personal problems or feel the need of advice or counsel may avail themselves freely of the time and services of the Dean of Women, the Dean of Men, the Protestant, the Orthodox Catholic, and Roman Catholic chaplains, the Veterans' Education Officer, and the psychometrist. These counselors assist students who desire help in preparing for the future, in studying effectively, or in creating satisfying lives. Aids used for guidance include vocational and interest tests administered by the University Testing Office.

Guidance and Testing Program

The University maintains a guidance and testing program, in charge of a trained psychometrist. It includes the general intelligence examinations administered to entering students who request them and tests in personality, mechanical comprehension, and special aptitudes which may be taken at any time by appointment.

Other tests may be taken, such as the Chartered Life Underwriters examinations taken by students of certain courses in business organization. The fees for such tests are not paid to or through the University business office: the student interested may inquire at the office of the Dean of the University for details. The Testing Office is in Room 211, Main Building.

Health Service

To promote and maintain good health, the University requires that each applicant entering as a full-time student provide the University with the results of a physical examination recorded on the *Youngstown University Physical Examination Form*, which will be given to the student when he applies for admission to the University. The applicant must take the form to a physician of his choice, be examined at his own expense, and return the form, completed by the physician, to the registrar. No student who is required to take the examination will be fully admitted until the registrar has received the completed form.

Every student receives at least two semester hours of instruction in health education, as part of the general University requirement in health education and physical education.

The *Health Center* is on the second floor of Central Hall. A registered nurse is on duty from 8 a.m. to 8:30 p.m. Monday through Friday and at other times by special arrangement: she can always be located through the University switchboard operator. The University provides emergency care: continued treatment, if necessary, is paid for by the student. Any injury occurring on campus should be reported to the Health Center within twenty-four hours.

Group insurance to cover hospital and/or surgical care is available to all students at the time of registration, at a semi-annual fee payable in advance. The plans are voluntary, community-sponsored, and non-profit, with no occupational restrictions. Membership may be retained after leaving the University. Students interested may inquire at the Registrar's Office.

The University is a member of the Ohio Student Health Association and the American Student Health Association.

Physical Education Program

A program of physical education is offered to meet the needs, interests, and abilities of students. The program includes the required physical activity courses, intramural and recreational sports, and intercollegiate athletics.

The intramural and recreational program offers archery, badminton, basketball, bowling, fencing, field hockey, golf, handball, softball, tennis, table tennis, and volley ball. Other activities may be added as facilities become available and as required to meet student interests. Students are encouraged to choose activities from which they are likely to derive healthful pleasure in later life.

Intercollegiate Athletics

Men's intercollegiate athletics are conducted at Youngstown University to enlist the interest of the entire student body in healthful amateur sport. Participation is open to any male member of the student body who qualifies under the regulations of the Athletic Policy of Youngstown University. Intercollegiate competition is provided in football, basketball, tennis, track and field, and golf.

The University is a member of the National Collegiate Athletic Association (N. C. A. A.).

Rifle Team

The Youngstown University Rifle Team, coached by the R. O. T. C. detachment, is a member of the Lake Erie Intercollegiate Rifle Conference and the National Rifle Association.

Placement Service

With the co-operation of the Ohio State Employment Service, the University maintains a full-time Placement Office, the services of which are free to undergraduates, graduating students, and alumni for either permanent employment, including teaching positions, or part-time work. It is on the campus at 39 West Spring Street.

Music students and alumni of the Dana School of Music should also note the placement information in the School of Music section.

Self-Help

The central location of the University makes it possible for many students to earn part or all of their expenses by working in nearby stores and industrial plants. The Placement Office assists students seeking such employment.

However, if the student plans to do such work while enrolled in classes, and especially if it is full-time work, he is advised to carry only a part-time college program, since the University accepts no substitute for satisfactory academic achievement. He should understand that for each semester hour of credit, at least three hours of academic endeavor are expected weekly (see *General Regulations*), so that a 16-hour class schedule should take at least 48 hours a week for study and class sessions.

Office of the Dean of Women

The Dean of Women is responsible for the welfare of the women students of the University. Her office is Room 210 of the Main Building.

A major duty of the Dean of Women is to assist the University staff and student officers of all student groups in problems of administration and program, especially the social program. She supervises the social sororities, as well. Scheduling of all student events by the Co-ordination and Calendar Committee is centered in this office.

Information on housing for women students is available in this office.

Office of the Dean of Men

The Dean of Men has joint responsibility with the Dean of Women for the supervision of students, with special responsibility for men students. He supervises the fraternities and assists the Registrar in the selection of students.

His office is in Room 110 of the Main Building.

Information on housing for men students is available in this office.

Student Housing and Dining Facilities

The University has no dormitories, but men students desiring off-campus housing should apply to the Dean of Men's Office, Main 110, and women students should apply to the Dean of Women's Office, Main 210. Women students not living at home must have housing arrangements approved by this office.

Dormitory accommodations for women students are available in Beuchner Hall or in the Young Women's Christian Association. Beuchner Hall, a privately operated residence hall for women, is at 620 Bryson Street, and the Y. W. C. A. is at 25 West Rayen Avenue. Application may be made to the Resident Manager at either address.

The cafeteria in Central Hall and the Snack Bar in West Hall serve meals and light lunches at reasonable prices. The cafeteria is open from 7:30 a. m. to 9:00 p. m., Monday

through Thursday, and from 7:30 a. m. to 6:00 p. m. on Friday. The Snack Bar is open from 7:30 a.m. to 3:30 p.m., Monday through Friday. Neither is open on Saturday and Sunday. Food service for banquets is available by special arrangement.

Lockers

The University provides lockers for full-time students, without charge beyond a small sum to cover clerical costs. For this handling charge and the necessary deposit, see Fees and Expenses. Two students are assigned to each locker. At the end of each term, or earlier if the student withdraws from the University, all personal effects must be removed from every locker. The University assumes no responsibility for personal property left in a locker at any time.

Alumni Office

An up-to-date record of the more than 9,100 graduates is maintained by the Alumni Office. As far as possible, the graduate's record shows his place of employment, the type of work he is doing, and the advanced degrees he has earned, in addition to other information.

The Alumni Association

The Youngstown University Alumni Association is the official organization of the institution's alumni. Membership in it is extended to all graduates of Youngstown University and its predecessors and to all former students who were in attendance for two school years.

For the Alumni Association of the Dana School of Music, see the Dana School of Music section.

STUDENT ACTIVITIES

The University encourages student participation in extracurricular activities. However, since the student's scholastic standing is always of first importance, participation in extracurricular activities is limited to students whose grade averages are as high as their class rankings require, as stated under General Regulations. A student on academic or social probation may not take part in such activities. Also, participation is not permitted to any student on disciplinary probation.

Every student organization, whether social, professional, or general, must be chartered by Student Council and must have at least one faculty adviser, appointed by and responsible to the President of the University. Student organizations are required to comply with University rules and regulations.

Honor Point System

The Honor Point System recognizes achievement in extracurricular activities and scholarship. Each year five graduates having the most points receive YU pins (see *Awards and Prizes*).

In evaluating academic achievement for this purpose, each credit hour with an A grade is worth 1 point and each hour of B is worth ½ point. The point schedule for extracurricular activities is available at the office of the Dean of the University in Main 110. Extracurricular points are counted only up to the number matched by earned academic points, and academic points only up to the number matched by earned extracurricular points.

Student Council

The student body of Youngstown University is represented in all affairs pertaining to it by Student Council, which operates under constitutional powers granted by the college administration. The council is composed of representatives from six undergraduate units (the College of Arts and Sciences, the Schools of Business Administration, Education, Engineering, and Music, and the Secretarial School) in proportion to the enrollment in each. All meetings of the council are open to all students, and any matter may be brought before a meeting by requesting beforehand that it be included in the agenda for the meeting.

Student Council, together with the Executive Committee of the University Faculty, exercises the power to charter all student organizations, to conduct student elections, to hear appeals from groups or individuals, to establish necessary disciplinary regulations, to appoint student members of joint faculty-student committees, and to supervise programs financed from its operating budget.

The financial support for activities sponsored by Student Council is the Student Activity Fund, which represents a percentage of the tuition fees*. The Fund is administered by the Faculty-Student Relations Committee, composed of three faculty members and three members of the council's finance committee. This faculty-student committee determines financial policies and approves the semester budgets, which are made up by the council treasurer and recommended to the committee by the council.

Of the Student Activity Fund, approximately 20% of the annual income is held as a standing reserve and an amount equal to 10% of the income of the preceding semester is set aside for minor varsity sports. Annual consignments are made to the cumulative reserves for the Student Center Fund and for band uniform replacement. The remainder is allocated through the operating budget.

Operating-budget allocation funds for student art shows, debates, dramatic productions, intramural sports, the *Jambar*, the *Neon*, and *The Penguin Review*, music organizations open to all students, and student radio programs, are administered

*The Student Activity Fund is established on a basis of $4.50 a semester for each full-time student.

by the groups to whom they are allotted. Student Council itself administers the funds allocated for council expenses, the *Student Handbook*, student all-University social functions, Deans' Loan Funds, Cinema 16, cheerleaders, Honors Day, special projects, and matters connected with membership in the National Student Association.

Student Publications

All student publications of the University are under the supervision of the Faculty-Student Committee on Publications.

The *Student Handbook* is published each fall by Student Council to inform new students about University activities and traditions.

The *Neon*, the University yearbook, and the *Jambar*, a weekly newspaper, are both published by student staffs, whose principal members may be nominated by the outgoing editors but must be approved by Student Council and the Faculty-Student Committee on Publications. The *Neon* and *Jambar* are supported by the *Neon* fund, by the Student Activity Fund, and by advertising.

Both projects give students experience in editorial work and news writing and in advertising, financing, and other phases of business management. Thus they serve as laboratories for journalism classes, with credit in limited amounts given for work on the publications. Student Council has authorized scholarships of $250 each semester for the editor of the *Neon* and $125 for its associate editor; and $250 for the editor-in-chief of the *Jambar* and $95 for each of its two managing editors.

The *Jambar* is a member of the Ohio College Newspaper Association and the Associated Collegiate Press. The Associated Collegiate Press, in its All-American newspaper critical service for 1963-1964, awarded the *Jambar* a First Class Honor Rating on content, style, makeup, typography, sports writing, and general quality. At the annual convention of the Ohio College Newspaper Association the *Jambar* was awarded third prize in general excellence and in public service, second prize in photography, third prize in news photography, and honorable mention in sports photography.

The Penguin Review, subsidized by Student Council, is a semi-annual journal published by students of the University for the encouragement of creative writing. It prints short stories, poetry, and essays written by students, alumni, and faculty members. Student Council has authorized scholarships of $100 each semester for the editor of *The Penguin Review* and $50 each semester for its business manager.

Dramatics

All students at the University are invited to participate in the production of plays. During the academic year at least two major productions are given, with special emphasis on the classics. Last year Fry's *The Lady's Not for Burning* and Shakespeare's *Romeo and Juliet* were presented. Other recent productions were Ustinov's *Romanoff and Juliet*, Shaw's *Androcles and the Lion*, and Shakespeare's *Twelfth Night*. All productions are under the supervision of the University Theatre and are financially supported by Student Council. Admission is charged the general public; University students are admitted by Identification Card.

The University Theatre also produces a series of three one-act plays each season known as Family Plays, whose purpose is to increase our understanding of social problems. The Family Plays series is supported with federal funds by the Ohio State Department of Mental Health and Correction. Fifty to sixty performances of these plays are given each year before clubs and civic organizations. They are performed on request through the University Theatre office.

The University Theatre is a member of Alpha Psi Omega, the National Dramatics Fraternity. Membership in the local chapter is by points earned from participation in various dramatics activities and is usually not open to students until their junior or senior year.

The University Theatre is also a member of the American Educational Theatre Association, and the American National Theatre and Academy.

Musical Organizations

Several campus musical organizations are open to all students of the University. For these, see the Dana School of Music section.

Art Exhibits

At the invitation of the Butler Institute of American Art, the Art Club has for many years sponsored an annual exhibition of the work of Youngstown University art students. The work is displayed at the Institute for about a month in the early spring, with awards from various donors, including a $50 purchase prize given annually by Student Council to the winner in any medium. Both students and alumni frequently exhibit work at the Institute's Autumn Annual and other showings; and the department periodically exhibits students' work in the departmental gallery.

Radio and Television Programs

A weekly program of news and music is presented over Radio Station WFMJ.

In addition to this program and those of the Religion in Life Fellowship and the Newman Club, students of the University from time to time conduct other programs of music, drama, news, and other entertainment on all Youngstown radio stations. Most programs are planned, written, produced, and announced entirely by students. Several series of television programs have been presented, with others planned for later dates.

UNIVERSITY-RECOGNIZED ORGANIZATIONS

Youngstown University has 72 student organizations established on its campus. They are chartered by Student Council and supervised by faculty advisers.

Honorary Societies

Alpha Mu is a local honorary advertising, merchandising, and public relations fraternity.

Alpha Psi Omega is a national honorary fraternity for students of dramatics.

Alpha Tau Gamma is a local honorary accounting fraternity.

The Clarence P. Gould Society, named for the emeritus chairman of the Department of History, is a local honorary group designed to recognize and encourage outstanding academic achievement in the College of Arts and Sciences. Membership in the Gould Society is confined to graduating students (with the exception noted below), who are elected on the following bases:

1. The student shall be a candidate for and shall have fulfilled all the requirements for the Bachelor of Arts or the Bachelor of Science degree with a major in one of the three divisions of the College of Arts and Sciences.

2. He shall be in the upper ten per cent of his class at graduation and shall have a cumulative point average of at least 3.50, based on all his academic college work.

3. He shall have better than a C average in the required courses in each of the three divisions of the College of Arts and Sciences. (A lower average in any division may be raised, for this purpose, by taking additional courses in that division.)

4. The student shall be elected by a faculty committee after consideration of his character and his complete academic record. At the discretion of this committee, a student may be elected during the semester preceding the completion of his work.

Kappa Delta Pi is an honorary society in education. Membership is by invitation and is restricted to junior, senior, and post-graduate students who plan to teach and whose grades place them in the upper quintile of the University.

Omicron Lambda is a local honorary society for biology majors. Several field trips a year are a part of its instructional program.

Sigma Kappa Phi is a national honorary business administration fraternity, Gamma chapter of which was established on this campus in 1925. It is the oldest national organization at Youngstown University.

Sigma Tau is a national honorary fraternity for engineering students.

The University Hill Chapter of the Future Secretaries Association is an honorary organization for secretarial majors. It is sponsored by the National Secretaries Association.

The Youngstown University Honor Guard is an honor society limited to students enrolled in advanced military science courses. It believes in developing good social conduct, the necessity of building character, maintaining leadership, encouraging scholarship, and the promotion of service to country.

Professional Organizations

Composers, Authors, and Artists of America is a national organization to promote creative work in literature, art, and music among its members.

Gamma Tau Alpha is a national organization for students in medical technology.

The National Society of Pershing Rifles is an honorary society for the promotion and development of interest and proficiency in the basic course of the R. O. T. C. program. Company P, 1st Regiment, is established at Youngstown University.

The National Society of Scabbard and Blade is an honorary military science organization. Membership is by invitation and is restricted to cadets enrolled in the advanced R. O. T. C. course. The society, believing that military service is an obligation of citizenship, has as its purposes the development of the essential qualities that make for good and efficient officers and the dissemination of intelligent information concerning the military requirements of our country. Company B, 15th Regiment, is established at Youngstown University.

Phi Epsilon is a local fraternity for chemistry students.

Phi Mu Alpha Sinfonia Fraternity of America is a national professional music fraternity. Delta Eta chapter of which is at the Dana School of Music.

Sigma Alpha Iota International Professional Music Fraternity for Women, Alpha Nu chapter, is open to students of the Dana School of Music.

The Student Chapter of the American Institute of Electrical Engineers is a technical society affiliated with the national A. I. E. E.

The Youngstown University Chapter of the American Chemical Society, Student Affiliates, is made up of students interested in any phase of chemistry.

The Youngstown University Chapter of the American Society of Civil Engineers encourages the development of a professional consciousness and individual ideas through an association with active leaders in civil engineering.

The Youngstown University Chapter of the American Society for Mechanical Engineers has as its purpose the dissemination of knowledge of mechanical engineering and the furtherance of the professional development of the student members.

The Youngstown University Chapter of the American Society for Metals, Student Affiliates, is open to students interested in the manufacture and treatment of metals.

The Youngstown University Society of Industrial Engineers aims to foster a high degree of integrity among the future members of the industrial engineering profession.

The Youngstown University Society of Student Civil Engineers has been organized to encourage the development of a professional consciousness and to promote friendly contacts with professional engineers.

The Youngstown University Student Chapter of the Ohio Society of Professional Engineers is open to all engineering students in good standing, except freshmen. The society's aim is the preservation of ethical and professional standards in its field.

Religious Organizations

Newman Club
Orthodox Christian Fellowship
Religion-in-Life Fellowship

Governmental Organizations

Student Council
Dean's Council, the William Rayen School of Engineering
Inter-Fraternity Council
Pan-Hellenic Council

Social Fraternities

Alpha Phi Delta
Delta Sigma Phi
Kappa Alpha Psi
Phi Sigma Kappa
Sigma Alpha Epsilon
Sigma Phi Epsilon
Sigma Tau Gamma
Tau Kappa Epsilon
Theta Chi
Theta Xi
Zeta Beta Tau
Zeta Phi*

Social Sororities

Alpha Iota†
Alpha Epsilon Phi
Alpha Kappa Alpha
Alpha Omicron Pi
Delta Chi Epsilon†*
Phi Mu
Sigma Sigma Sigma
Tau Kappa Nu†*
Zeta Tau Alpha

Service Organizations

Alpha Phi Omega‡
Circle K‡
Gamma Sigma Sigma§

Other Student Organizations

AHEPA
American Institute of Physics
Art Club
Los Buenos Vecinos
Classical Society
Debating Society
Economics Association
International Students Association
Little Sisters of Minerva
Physical Education Majors' Club
Rifle Club
Social Science Club
Student Education Association
Wilma Brown Home Economics Club
Youngstown University Mathematics Club
Youngstown University English Society
Youngstown University Nurses' Association
Youngstown University Society of Individualists

*Local ‡Men only †Secretarial School §Women only

Inter-Fraternity Council and Pan-Hellenic Council

Inter-Fraternity Council is made up of one representative and one alternate from each active all-University social fraternity. The Council governs the relations of such fraternities among themselves and with other groups. It has two faculty advisers, appointed by the president of the University.

Pan-Hellenic Council is made up of two representatives from each active all-University social sorority and has a faculty adviser appointed by the president of the University. The Council supervises the relations of such sororities among themselves and with other groups.

AWARDS AND PRIZES

Winners of the following awards are announced each year at the commencements:

The YU Pins. Youngstown University annually awards five pins to those graduating students who have the largest number of honor points in scholastic and extra-curricular activities. The pin is gold, in the form of a Y superimposed on a U.

The Youngstown Vindicator Awards. Four cash awards are made annually as follows:

To the best all-around student, on the basis of academic achievement and extracurricular activity through four years of college: $200.

To the student ranking first in the humanities, on the basis of four years of study: $100.

To the student ranking first in English, on the basis of four years of study: $100.

To the student ranking first in the social science sequence courses: $100.

The Anne Purnell Award. Mrs. Frank Purnell presents an award of $100 to the woman in the graduating class with the best academic record.

The Henry A. Roemer Awards for Men. Five awards of $100 each are made annually as follows: for scholarship in chemistry; for scholarship in mechanical engineering; for scholarship in metallurgical engineering; for scholarship and for leadership and sportsmanship in athletics; and to the outstanding scholar in the graduating class. The award is named for its donor, Henry A. Roemer, Chairman of the Board of the Sharon Steel Corporation.

The Distinguished Military Graduate Honor Award. Each year the President of Youngstown University designates distinguished military graduates from the recommended distinguished students in military science who have maintained required standards in the R. O. T. C. and in the University during their senior year.

The winners of the following awards are announced at the Honors Day exercise, or at the end of the academic year:

The Order of AHEPA, Lincoln Chapter, Prize in Greek. The Lincoln Chapter of the Order of AHEPA offers an award for the best student in elementary ancient Greek. The winner must have earned at least B in the course. In the absence of a deserving recipient, the prize may be awarded for excellence in advanced Greek.

The Alpha Tau Gamma Fraternity Award. The Alpha Tau Gamma honorary accounting fraternity gives an annual award to the member of the fraternity who has contributed the most to the university through a combination of academic proficiency and extracurricular activities.

The American Chemical Society Student Affiliates Award. The Youngstown University Chapter of Student Affiliates of the American Chemical Society annually presents a copy of Van Nostrand's *Chemists' Dictionary* or another suitable book to a graduating senior. The recipient must be an active member of the Chapter, must have the highest cumulative point average in chemistry and chemical engineering courses numbered 200 or higher, and must have been a full-time student at Youngstown University for at least three consecutive years.

The American Institute of Chemists Award. A medal and an Associate Membership in the American Institute of Chemists, for a period of a year, is awarded to a senior chemistry student outstanding in scholarship, leadership, and character.

The American Institute of Electrical Engineers, Sharon Section, Award in Electrical Engineering. The American Institute of Electrical Engineers, Sharon Section, grants an annual award to the outstanding graduate in electrical engineering.

The American Institute of Industrial Engineers Award in Industrial Engineering. The American Institute of Industrial Engineers gives an award to the graduating industrial engineering student of Youngstown University having the highest scholastic record. This is known as the "A.I.I.E. Award" and is presented at the May meeting of the Youngstown Chapter of the American Institute of Industrial Engineers.

The American Production and Inventory Control Society Award. The American Production and Inventory Control Society annually awards a bookshelf of books on production and inventory control to the graduating senior in the School of Business Administration majoring in management and with the highest point average in management.

The American Society of Civil Engineers, Youngstown Branch, Award in Civil Engineering. The American Society of Civil Engineers, Youngstown Branch, grants an annual award to the outstanding graduate in civil engineering.

The American Society of Mechanical Engineers, Youngstown Section, Awards in Mechanical Engineering. The American Society of Mechanical Engineers, Youngstown Section, grants an annual award to the outstanding graduate in mechanical engineering.

The Art Club Award. The Art Club of Youngstown University offers a prize of $25 in any medium at the annual Youngstown University Art Exhibition.

The Bronze Medal. The Bronze Medal of the American Association of Teachers of Spanish and Portuguese is given to the best student in two or more years of Spanish by Los Buenos Vecinos, the Youngstown University Spanish club.

Los Buenos Vecinos Art Award. Los Buenos Vecinos, the Youngstown University Spanish club, gives a prize of $10 for the best drawing shown at the annual Youngstown University Art Exhibition.

The Frieda F. Chapman Award. The William Holmes McGuffey Chapter of the National Student Education Association annually presents an award to a senior who gives evidence of becoming an outstanding elementary school teacher.

The Chemical Rubber Company Award in Chemistry. The Chemical Rubber Company provides an award for superior achievement in freshman chemistry.

The Chi Omega Alumnae Award. The Youngstown Chapter of the Chi Omega Alumnae gives an annual cash award to the highest-ranking woman student majoring in the social sciences.

The City Office and Art Company Awards. The City Office and Art Company gives three $10 purchase awards for outstanding works shown at the annual Youngstown University Art Exhibition.

The Classical Society Latin Prize. The Classical Society of Youngstown University offers a prize for the best work in the Intermediate Latin course.

The Clothes Tree Art Award. The Clothes Tree, Inc., annually awards a prize for meritorious work in any art medium.

The Louis A. Deesz Memorial Award. The Mahoning Valley Chapter of the Ohio Society of Professional and Registered Engineers, Tri-County Section, gives an annual award to the graduating engineering student outstanding in academic achievement and personality over a period of five academic years. The award is made in honor of the memory of Louis A. Deesz, the first dean of the William Rayen School of Engineering.

The Victor George Art Award. The Victor George Beauty School gives an annual award for meritorious work in any art medium.

The Inter-Fraternity Council Scholarship Award. The Inter-Fraternity Council annually awards a plaque to the fraternity with the highest aggregate point index, based on the academic work of the previous fall semester. The award is presented at the Greek Sing at Stambaugh Auditorium.

The McKelvey Award in Retail Merchandising. The G. M. McKelvey Company gives an annual award to the graduate in retail merchandising with the highest point average in all courses taken by the student, with consideration given to his achievements in any merchandising firm. Candidates are recommended by the faculty of the Department of Merchandising; final choice is made by the Chairman of the Department of Merchandising and the Dean of the School of Business Administration.

The National Association of Accountants Award. The National Association of Accountants gives an award each year to the graduating senior with the highest point average in accounting.

The Omicron Lambda Honorary Biology Fraternity Award for Scholarship. Omicron Lambda Fraternity gives an annual cash award to the outstanding sophomore biology student.

The Pan-Hellenic Council Award. A silver tray is awarded yearly by Pan-Hellenic Council to the sorority that has the highest aggregate point index, based on the academic work of the previous fall and spring semesters. The award is presented at the Greek Sing held at Stambaugh Auditorium.

The Roberts Deliberating Club Award in Social Sciences. The Roberts Deliberating Club of Youngstown annually awards $100 to the graduating student ranking highest in the social sciences.

The Scudder Award. The Phi Epsilon Fraternity annually presents an award to the outstanding senior who has majored in chemistry or chemical engineering. The award is named for Dr. Eugene Dodd Scudder, Chairman of the Department of Chemistry.

The Sigma Kappa Phi Fraternity Scholastic Award. Sigma Kappa Phi Fraternity awards a certificate and an emblem each year to the member of the graduating class with the highest point average in all business administration subjects and who has majored in accounting and fulfilled the requirements for a degree or title in business administration. The recipient must have completed at least 60 semester hours at Youngstown University.

The Sigma Tau Fraternity Engineering Award. The Sigma Tau honorary engineering fraternity annually presents an award to the freshman in the engineering school whose record is most outstanding.

The Student Council Purchase Prize. Youngstown University Student Council offers a purchase prize of $50 to the winner in any medium at the annual Youngstown University Art Exhibition.

The George M. Wilcox Award. The William Holmes McGuffey Chapter of the National Student Education Association annually presents an award to a senior who gives evidence of becoming an outstanding high school teacher.

The Yo-Tub Men's Fraternity Prize. The Yo-Tub Men's Fraternity gives an annual award of $200 to a deserving son or daughter of an employee of the Youngstown Sheet and Tube Company.

The Youngstown University English Society Creative Writing Award. The Youngstown University English Society gives a yearly award for the best prose selection and the best poetry selection in the annual volume of *The Penguin Review.*

The following awards are given to students enrolled in the R. O. T. C. program and are announced at the Honors Day exercise or at the end of the academic year:

The Armed Forces Communications and Electronics Association Award. The Armed Forces Communications and Electronics Association Award is

presented annually to the outstanding senior R. O. T. C. cadet majoring in electrical engineering.

The Association of the United States Army Medal. The Association of the United States Army awards a medal annually to the cadet completing the first year of the advanced course who is the most outstanding in all academic subjects (exclusive of military), in military science, and in personal qualifications, and who has completed one full year of the R. O. T. C. course at Youngstown University.

The Corps of Cadets Awards. Medals are awarded annually by the chairman of the department of military science to R. O. T. C. cadets as follows: a medal is awarded to each member of the Corps of Cadets squad most proficient in squad drill; and medals are awarded to the first-year, the second-year, and the third-year military science student who is most proficient in individual drill, school of the soldier, and personal appearance.

The Department of Army Superior Cadet Ribbon Award. This award is presented annually by the Department of the Army to the R. O. T. C. student in each academic class at Youngstown University who is judged the outstanding student in his class in military science.

The Lieutenant Colonel Eugene Lash Award. The Commanding Officer, 177th Anti-aircraft Artillery Gun Battalion, Ohio National Guard, annually awards a medal to the Youngstown University R. O T. C. cadet completing the fourth-year course in military science with the most outstanding record of excellence in military subjects. The name of the recipient is inscribed on a plaque which remains on the Youngstown University campus.

The Mahoning Chapter, Reserve Officers Association, R. O. T. C. Honor Awards. The Mahoning Chapter, Reserve Officers Association, annually awards a medal to each of two R. O. T. C. cadets, as follows: to the cadet completing the basic course who is selected for and enrolls in the advanced course and who has best exhibited during his training at Youngstown University the qualities of leadership; and to the cadet completing the advanced course who is commissioned in the Officers Reserve Corps of the Army of the United States and who has best exhibited during his training at Youngstown University the qualities of leadership. Participation in extracurricular activities of the University for which honor points are awarded, as well as performance as a cadet, is considered in making selections for these awards.

The Nathan Hale Chapter, Sons of the American Revolution Awards. The Nathan Hale Chapter, Sons of the American Revolution, annually awards a medal to each of two R. O. T. C. cadets, as follows: to the cadet who completes the basic course with the most outstanding excellence in all academic subjects (exclusive of military), in military science, and in leadership and character; and to the cadet who completes the advanced course with the most outstanding excellence in all academic subjects (exclusive of military), in military science, and in leadership and character. The names of the recipients are inscribed on a plaque presented to Youngstown University by the donor. No student may receive either award unless he has completed one full year of the R. O. T. C. course at Youngstown University.

The Professor of Military Science Award. A trophy is presented annually by the Chairman of the Department of Military Science to the fourth-year cadet whose record at the R. O. T. C. summer camp is most outstanding among the Youngstown University cadets attending.

The Reserve Officers Association of Ladies, Mahoning Chapter, Trophy. The Reserve Officers Association of Ladies, Mahoning Chapter, annually awards a trophy to the fourth-year cadet with the most outstanding record in scholarship, character, and leadership.

The Society of American Military Engineers Awards. Youngstown University annually nominates two qualified students for the following national awards given by the Society of American Military Engineers: a gold medal with key replica to ten outstanding engineering students enrolled in general military science R. O. T. C. units in the United States who are in the next-to-last year of their engineering course; and to ten outstanding students who are in the last year.

Essay Contests. From time to time various organizations sponsor essay contests among the student body. Pertinent information about them is disseminated through normal campus channels.

SCHOLARSHIPS AND LOANS

All scholarships, grants-in-aid, and loans are under the supervision of the University Faculty Committee on Scholarships. Inquiries may be addressed to the Dean of the University.

Scholarships for entering freshmen are granted on the basis of (1) the student's high school record, (2) the recommendation of his high school principal or teachers, (3) his standing in a standard college entrance test, and (4) his need. For students already enrolled, the basis is scholastic ability and need.

Grants-in-aid are awarded on the basis of (1) character, (2) need, and (3) ability to make a creditable academic record. Loans are based on a consideration of scholastic ability, character, and need. The University participates in the National Defense Student Loan program. For details consult the Dean of Men.

The American Association of University Women, Youngstown Branch, Scholarships. A scholarship grant of $200, first given in 1950, is awarded each year by the Youngstown Branch of the American Association of University Women to an upperclass woman student, on the basis of high scholarship and need.

The American Business Women's Scholarship. This scholarship, instituted in 1957, is provided by the Youngstown Chapter of the American Business Women's Association. It is awarded to a woman in the field of business administration.

The American Society for Metals Foundation Scholarship. This scholarship of $500, established in 1955, is awarded, preferably to a student who has finished his sophomore year, upon the recommendation of the chairman of the department of metallurgical engineering.

The American Society of Women Accountants. This scholarship of $100, established in 1963, is awarded to a woman majoring in accounting or secretarial accounting.

The Ward Beecher Foundation Scholarship. This scholarship of $500, established in 1964, is awarded to a worthy student, preferably to a freshman who plans to major in engineering.

The LaRue R. Boals Scholarship. This scholarship, established in 1961, provides income from $5,000 to be awarded annually to a worthy student of the Dana School of Music.

The John G. Broumas Scholarship. This scholarship of $400, established in 1964, is awarded to any worthy student of drama.

The Bucheit Scholarship. This scholarship of $500 was established in 1963 by The Joseph Bucheit and Sons Company. It is awarded annually to a student in civil engineering whose parent is employed by this company.

Los Buenos Vecinos Foreign Study Scholarship. Los Buenos Vecinos annually awards to a sophomore or junior a scholarship for six weeks of summer study in a foreign country. The scholarship covers tuition and all other expenses.

The Paul C. Bunn Loan Fund. This fund, established in 1957, is a gift of the teachers of the Youngstown Public Schools in honor of Dr. Paul C. Bunn. Upperclassmen in the School of Education are eligible to receive loans from this fund.

The Business and Professional Women's Club Scholarship. A scholarship is awarded to an upperclass woman by the Business and Professional Women's Club of Youngstown.

The CIO Local No. 1331 Scholarship. This scholarship of $500, established in 1961, is awarded to a son or daughter of a member of CIO Local No. 1331 at the Republic Steel Corporation.

The CIO Local No. 1418 Scholarship. Two $500 scholarships, established in 1962, are awarded to sons or daughters of CIO Local No. 1418 at the Youngstown Sheet & Tube Company.

The William F. Courtney Scholarships. Three $200 scholarships, established in 1959, are awarded to Catholic students who will teach in the Catholic Diocese school system.

The William H. Dana Scholarship Loan Fund. This fund was established by the Alumni Association of the Dana School of Music as a memorial to the school's founder. Information about loans may be secured from the association's secretary at the Dana School of Music.

The Benjamin T. Davis Scholarship. This scholarship was established in 1949 by Judge John W. Davis as a memorial to his brother. The stipend is $300. It is awarded annually to a male graduate of Fitch High School, Austintown, chosen on the basis of recommendations by the Superintendent of Austintown Township schools, the principal of Fitch High School, and the president of the Austintown Township Board of Education.

The Rachel Davis Scholarship. This scholarship is like the Benjamin T. Davis Scholarship except that it is a memorial to Judge Davis's sister and is for a woman graduate, chosen similarly.

The Dusi Music Scholarship. This scholarship, made possible since 1961 by the Dusi Music Company, annually provides $300 for a deserving student of the Dana School of Music.

Eastern Star Scholarship. This scholarship of $300, established in 1963, is awarded to a worthy student by Amaranth Grand Chapter of the Order of Eastern Star.

The General Motors College Scholarship. The General Motors Corporation, under its College Scholarship Plan, offers annually a four-year scholarship to an entering freshman selected on the basis of scholastic and leadership qualities and need for assistance. The scholarship covers tuition, fees and supplies, with an additional amount if need is established.

The Kathryn T. Guarnieri Memorial Scholarship. This annual scholarship, given by Elizabeth Pond Hughes, is awarded to a member of Alpha Nu Chapter of Sigma Alpha Iota International Professional Music Fraternity.

The Haig Ramage Scholarships. Income from the Haig Ramage Scholarship Fund makes possible the granting of several scholarships of $300 each for the freshman year. Selection is on the basis of scholastic and leadership qualities and need for assistance.

The Hilda George Hanna Scholarship. This scholarship, established in 1964, provides income from $5,000 to be awarded annually to a woman who is a full-time student in the Secretarial School and a member of Alpha Eta Chapter of Alpha Iota International Business Sorority.

The House of Music Scholarship. This scholarship, made possible since 1961 by The House of Music, annually provides $125 for a deserving student of the Dana School of Music.

The Anthony Ierino Scholarships. Two scholarships of $200 each are awarded annually to needy and worthy students. These scholarships were made possible by a bequest of Mr. Antonio Ierino in 1954 and are available to students of any class.

The Isaly Dairy Company Scholarships. The Isaly Dairy Company awards two scholarships of $500 each for the freshman year of study at Youngstown University, one to a man and the other to a woman. Those eligible are (1) sons, daughters, brothers, and sisters of full-time Isaly employees and (2) part-time employees who have worked for the company for at least six months. Selection is based on scholarship, leadership, character, and need. Further details are available from the company, to which application is made and which makes recommendations to the Committee on Scholarships.

The Arthur L. Jones Scholarships. These scholarships, in the amounts of $500, $300, and $200, are awarded annually to students in the School of Business Administration, with first preference given to students majoring in accounting.

The President and Mrs. Howard W. Jones Scholarship. This scholarship has been provided since 1947 by the faculty of Youngstown University in honor of President and Mrs. Jones. The funds for it are contributed annually and it pays $300 for one year to a student chosen on the basis of recommendations by Dr. and Mrs. Jones.

The Junior Civic League Scholarships. Three $250 scholarships, established in 1961, are awarded to worthy students by the Junior Civic League of Youngstown.

The Koppers Company Scholarship. This scholarship of $650 was established in 1962 by the Koppers Company of Pittsburgh. It is awarded to a deserving student, preferably an upperclassman in chemical engineering.

The Latin Culture Foundation Scholarship. An annual award of $200 is offered by the Latin Culture Foundation to an outstanding student of the Italian language and culture. Selection is made by the Committee on Scholarships on the basis of academic achievement and need.

The Lyden Oil Company Scholarships. Two scholarships of $250 each were established by the Lyden Oil Company in 1964. They are awarded to worthy entering freshmen.

The William F. Maag, Jr., Scholarship. This scholarship was established in 1947 in honor of Mr. William F. Maag, Jr. The revenue from invested capital pays $330 for one year to an upperclassman chosen annually on the basis of recommendations by Mr. Maag.

The Mahoning Valley Technical Societies Council Scholarship. A scholarship of $200, established in 1955, is awarded to a sophomore or junior engineering student whose home is in the Mahoning or Shenango Valleys.

The Marks' Music Store Scholarship. This scholarship, made possible since 1961 by Marks' Music Store, annually provides $100 for a deserving Western Pennsylvania student of the Dana School of Music.

The Ohio Masonic Lodge Scholarship. This scholarship of $400 was established in 1963 by the Grand Lodge of Masons of Ohio and is awarded to a worthy student.

The Harry and Helene Meyer Freshman Scholarship. This scholarship of $400, established in 1955, is for a freshman planning to major in business administration or economics. The recipient is selected annually on the basis of superior scholarship and financial need.

The National Office Management Association Scholarships. Five scholarships of $100 each were established in 1957 by the Youngstown Chapter of the National Office Management Association for students in the field of business administration. Students eligible for these awards must be upperclassmen having acceptable scholastic standing and needing financial assistance. Recipients are selected by the Dean of the School of Business Administration.

The Neapolitan Music Company Scholarship. This scholarship, made possible since 1962 by the Neapolitan Music Company, annually provides $350 for a deserving student of the Dana School of Music.

The Tom Pemberton Memorial Scholarships. Two four-year scholarships of $400 are awarded to graduates of Mahoning County high schools, one to a man, one to a woman, from an endowment of $12,000 contributed as a memorial to Tom Pemberton. The recipients must be in the upper two-thirds of their high school classes. The scholarships were established in 1957.

The Joseph Potochny Scholarship. This scholarship, made possible by a bequest of Mr. Joseph Potochny in 1963, is awarded to a needy and deserving student of Ukrainian background.

The Frank Purnell Scholarship. This scholarship in the amount of $300, established in 1960, is awarded on the basis of need and academic achievement.

The Herman C. Ritter Scholarship for the Violin. An endowment of $10,000 from the estate of Mrs. Juliet L. Ritter was made available in 1957, the income of which is used for a scholarship award to a student who intends to make a career of music, who shows particular aptitude and promise in the playing of the violin, and who is without sufficient means to provide himself or herself with an education and training in music.

R. O. T. C. Command Scholarships. Scholarships, available at the beginning of the second semester, are granted to fourth-year military science students in recognition of their extraordinary responsibilities in administering the Youngstown University Corps of Cadets.

The John R. Rowland English Scholarship. This scholarship, established in 1957, is awarded annually to an outstanding student majoring in English. The stipend is the income from the John R. Rowland scholarship fund of $5,000.

The Salem Community Scholarship Association Scholarship Loans. Any student living in the Salem community who has satisfactorily completed at least two years of formal education beyond high school may apply to the president of the Salem Community Scholarship Association, Salem, Ohio, for a loan to help him complete his education.

The Sharon Steel Corporation Scholarships. These scholarships were established in 1945 by the Sharon Steel Corporation, which awards them each year to sons and daughters of its full-time employees (or employees of its wholly-owned subsidiaries) who are interested in studying engineering or the physical sciences. Each scholarship provides for the recipient's tuition, fees, textbooks, and supplies at Youngstown University to the extent of $3,000 for the four or five years required by the curriculum chosen. In addition, the Sharon Steel Corporation offers each winner part-time and vacation employment during his four years at Youngstown University. The recipients are selected by the Committee on Scholarships of Youngstown University on the basis of academic achievement, on their score in the College Entrance Examination Board tests, on the recomendation of their high school principals, and on their need. Application blanks may be obtained from the office of the Secretary, Sharon Steel Corporation, Sharon, Pennsylvania.

The Paul E. Shields Scholarship Loan Fund. This fund, established in 1961, is available to mathematics and engineering students of junior or senior rank who have maintained a 3.25 average in these disciplines.

The Sigma Alpha Iota Scholarship. The local alumni chapter of Sigma Alpha Iota Professional Music Fraternity for Women offers a $200 scholarship to a member of Alpha Nu, the local undergraduate chapter of the sorority. The recipient is chosen on the basis of musical ability, academic performance, financial need, and contribution to the fraternity.

The Louis and Julia Spitzer Memorial Scholarships. These scholarships of $300, established in 1961, are awarded to assist students of the Jewish faith who are attending the University.

The Henry V. Stearns Scholarship. The Delta Eta chapter of the Phi Mu Alpha Sinfonia Fraternity of America awards an annual scholarship of $200 to a male junior or senior music student who possesses outstanding musical and scholastic ability and who is in need of financial help to complete his college training.

The Strouss-Hirshberg Music Center Scholarships. These scholarships have been made possible each year since 1947 by the Strouss-Hirshberg Music Center. They provide annually $100 for each of four students in the Dana School of Music. Applications may be sent to the Dean of the Dana School of Music, who makes recommendations to the Committee on Scholarships.

The C. J. Strouss Memorial Scholarship. This scholarship of $150 is awarded annually to an upperclassman in memory of the late C. J. Strouss. The award was established in 1954.

The Grace M. and Blanche F. Vail Scholarship. This scholarship is awarded annually to a student of excellent character and scholarship who needs financial assistance. The stipend is the income from the Vail Scholarship Fund of $4,000 established in 1954.

The Western Reserve Cat Fanciers' Scholarship. This scholarship of $250 is awarded to a pre-veterinary student whose application for admission to a school of veterinary medicine has been accepted.

The Allen Wilder Memorial Scholarship. This scholarship of $150 was established in 1963 and is awarded to a worthy student.

The Bessie Wilson Music Scholarships. The income from an endowment of $40,000 from the estate of Miss Bessie Wilson is used for scholarships awarded to music students. These scholarships were established in 1957. Applications may be sent to the Dean of the Dana School of Music, who makes recommendations to the Committee on Scholarships.

The Women's Auxiliary of the Mahoning County Medical Society Scholarship. This scholarship, established in 1959, covers tuition and fees for one year. Candidates must be residents of Mahoning County and must agree to complete the course in nursing sponsored by the Youngstown Hospital Association.

The Women's Auxiliary of the Mahoning Valley Chapter of the Ohio Society of Professional Engineers Scholarship Grant. An annual grant of

$100 is given to a deserving junior in William Rayen School of Engineering by the Women's Auxiliary of the Mahoning Valley Chapter of the Ohio Society of Professional Engineers.

The Yo-Mah-O Chapter, National Secretaries Association Scholarship. This scholarship of $600 ($300 for each of two years) is provided by the Youngstown Chapter of the National Secretaries Association (International). It is awarded to a woman interested in completing the two-year secretarial course and qualifying for the title of Associate in Business Administration.

The Youngstown Building Material and Fuel Company Scholarships. This is an annual gift of $1200 for scholarships to be allocated by the Committee on Scholarships.

The Youngstown District Purchasing Agents Association Scholarship. This scholarship, established in 1959, is awarded to a student majoring in industrial retailing.

The Youngstown Dunbrik Company, Incorporated Scholarship. This scholarship of $400 is awarded to a student in the William Rayen School of Engineering who plans to make his career in the building industry. It was established in 1955.

The Youngstown Sheet and Tube Company Scholarships. These scholarships were established in 1951 by the Youngstown Sheet and Tube Company. Of the five offered each year, three are four-year scholarships for sons of company employees and provide tuition and fees for full-time study in the College of Arts and Sciences, the School of Business Administration, the School of Education, or the William Rayen School of Engineering. The other two are for part-time study and are granted to employees on a year-to-year basis. Further details are available from the company, to which application is made and which makes recommendations to the Committee on Scholarships.

The Youngstown University Student Scholarship Fund. This fund is financed by a group of prominent business and professional men of the community for the purpose of aiding worthy students. The scholarships range in amount from $150 to $300.

Student Assistantships

Student assistantships are usually available to upperclassmen only. Applications may be made at the office of the secretary to the Recorder. In return for a weekly amount of work stipulated by the administration, the student receives full tuition and fees for a limited load plus a salary of $20 a week for the first year assignment; $22.50 a week for the second year on the same assignment; and $25 a week for the third year on the same assignment. Half-assistantships are also available.

Graduate Scholarships

Many graduate scholarships, fellowships, and assistantships are available at other institutions. A file of these is maintained in the office of the Dean of Women. Current

notices are posted on the scholarship bulletin board adjacent to that office and on departmental bulletin boards. Five of the more widely known graduate scholarships are described below.

Fulbright Scholarships. United States government scholarships for foreign study are available for graduate study abroad. Applications may be obtained from the Fulbright adviser, Prof. W. L. Miner.

Danforth Graduate Fellowships. These are available to male college seniors or recent graduates preparing to teach or do administrative work on the college level.

Marshall Scholarships. These scholarships offer two years of study at any university in the United Kingdom. Applicants must be college graduates, citizens of the United States, and under 26 years of age.

The Cecil Rhodes Scholarships. Men students of Youngstown University are eligible to apply for these scholarships. which provide for study at Oxford University in England. Scholarships are awarded each year to students selected through personal interviews by a regional committee.

The Woodrow Wilson Fellowship Awards. About a thousand of these are awarded yearly for graduate study, principally in the humanities and social sciences, to students who plan to become college teachers. Each appointee receives a liberal stipend and tuition. Candidates must be nominated by a faculty member. Further information may be obtained from the campus representative, Dean K. W. Dykema.

General Requirements and Regulations

ADMISSION

Any graduate of a first grade high school or an accredited secondary school who is in the upper two-thirds of his class may be admitted to Youngstown University as a degree-seeking student upon proper application, presentation of a satisfactory official transcript of his high school credits, evidence of his good character, and compliance with physical examination requirements (*see Health Service*, in the General Information section). The applicant is also required to take the *American College Test** or the *College Entrance Examination Board* test.

The applicant, if accepted, is admitted to the Lower Division of the University. He becomes a candidate for a degree when he has completed 48 to 64 semester hours of credit and has been admitted to the Upper Division.

An applicant who stands in the lowest third of his high school class will not be granted admission except by special action of the Dean of the University.

Application

Application is made on a form available at the Registrar's Office. It must be accompanied by a Matriculation Fee of $15.00. The application should be submitted to the Registrar. Prospective students will receive a physical examination form upon receipt of the application for admission.

Relation of High School Courses to University Graduation

The applicant for admission normally has credit for 16 units of high school study. These should include certain courses that are regarded as an important part of the student's preparation for college study. These preparatory courses are listed in the table below, where it will be seen that they are not the same for every degree offered by the University. It should be observed, moreover, that the high school courses specified for a particular degree are part of the requirements for graduation with that degree from Youngstown University.

If an applicant does not have credit for one or more of the pre-college courses specified for the degree he wants, he is not kept out of the University for that reason. He is allowed to enter with the privilege of completing the missing courses after beginning his college training, but with the understanding that

*The University is a testing center administering the American College Test at announced dates to accommodate applicants to other institutions requiring the test for entrance or advisement.

he is expected to complete them before the beginning of his junior year. (The University offers him certain means of completing them, as indicated below; but the student may use any available means acceptable to the University, such as high school night classes or private tutoring.)

Since the specified preparatory courses are not the same for all degrees, admission to the University for study toward one degree does not necessarily mean that the student is equally qualified for study toward other degrees. The student should have this in mind if he later changes the degree for which he is studying, since his high school courses may not provide the preparation specified for his new objective, even though they were adequate for the original one.

Evaluation of Advanced Placement High School Courses

Youngstown University recognizes the work taken under the Advanced Placement program and the Educational Testing Service as follows:

A student who has satisfactorily completed an Advanced Placement course in high school and has taken the Advanced Placement tests administered by the Educational Testing Service may have prerequisites for certain courses waived or college credit for certain courses granted, as his competence and achievement merit. The student's work and test scores are evaluated by a committee consisting of the chairman of the department concerned and a member of the Academic Standards Committee appointed by the Dean of the University, final approval of the committee's recommendation resting with the dean of the college or of the school involved.

G. E. D. Test Credits

Certain credits for successful results in the Armed Forces' *General Education Development Tests* may be accepted as indicating satisfactory preparation for study toward a degree, but not as a basis for granting credit for any University course.

Admission from Other Institutions

A student applying for permission to transfer from another college or university must present, preferably one month before his enrollment, two transcripts of his college records. He must present evidence of honorable dismissal from the institution last attended; he will not be accepted if he is ineligible to return to his former institution. His class standing at Youngstown University will depend on the quantity and quality of his previous credits. (For R. O. T. C. credit, see *Military Science*, in the College of Arts and Sciences section.) A transfer student with 45 or more hours of credit must file an application for admission

to the Upper Division when he applies for admission to Youngstown University.

Special Students

Occasionally a student who is not a high school graduate, but who because of maturity seems capable of college study, may be admitted as a special student. He takes courses and receives grades like the ordinary student, but his credits cannot be accepted toward a degree unless he completes the requirements for and receives his high school diploma. (See also *Auditors*, further on in this section.)

Guidance Examinations

Prospective freshmen may take general intelligence examinations for guidance purposes. Those who wish to do so should make arrangements at the Testing Office.

GENERAL REQUIREMENTS FOR GRADUATION

Catalog Governing Graduation Requirements

The requirements for graduation may be those stated in the catalog in effect at the time of the student's entrance into Youngstown University or those stated in any subsequent catalog; but the student must select *one* of the pertinent catalogs and complete the requirements as stated therein.* The student is expected to make himself fully aware of all requirements applicable to him and is responsible for completing them.

General Requirements Other than Courses

A general requirement is one that must normally be met by all students, unless exceptions are established. Most general requirements apply only to degrees; a few apply to both degrees and titles.

For any *degree* or *title*, the following three requirements must be fulfilled:

Application. An application for graduation must be filed with the Recorder. Forms for this purpose are available at the Records Office. Candidacy must be approved and the graduation fee paid on or before March 1 for Spring graduation, and on or before July 1 for Summer graduation. (See *Special Fees*, further on in this section.) If the student does not graduate at the commencement exercise for which he has filed an application, he must reactivate his application in line with the above dates when he plans to graduate.

Residence. The last 30 semester hours leading to the degree or title must be completed at Youngstown University. (In the pre-forestry, pre-law, and pre-medical curriculums, however, which allow the student to earn

*Certain exceptions apply here. In the School of Education, for instance, changes in requirements are governed by the Ohio State Department of Education.

his final credit hours *in absentia*, the last 30 hours of this final stage must be spent at Youngstown University.) Any modification of this requirement must be approved by the Dean of the University.

Grades. The point index must be not less than 2.00 (see *The Point Index and Scholastic Standing*, further on in this section) at the time candidacy is approved and at the time the degree is granted.

For a *degree*, the following requirements must also be fulfilled:

Upper Division Status. The student is not a candidate for a degree until he has been admitted to the Upper Division of the University (see *Candidacy for a Degree*, further on in this section). To achieve this, he must first have *made up any deficiency in high school units* for the desired degree. This is the student's responsibility. The preparatory units are not the same for all degrees: they are listed in the *Condensed Table of Courses Required for Graduation* and should be read carefully, together with the explanatory notes accompanying them. This is especially important if the student changes the degree for which he is studying, as his high school preparation, even though satisfactory for his original objective, may not be satisfactory for the new one. *The fact that a student has been admitted to the University to study for one degree does not mean that he is equally qualified to become a student for every other degree the University offers.*

Course Levels. At least 60 semester hours must be completed in conrses numbered 200 or higher; at least 40 of these 60 hours must be in courses numbered 300 or higher.

Major and Minors. The student must complete a major and at least one minor.

A departmental major consists of at least 30 semester hours with grades of C or better in one department.* A combined major, for which the courses are in more than one department, consists of at least 45 semester hours with grades of C or better.

A minor consists of at least 15 semester hours with grades of C or better in a department other than that of the major.

The chairman of the student's major department determines the student's course requirements for both the major and the minor or minors and sees that they are met. He may require the student to do more, but not less, than the minimums stated above. Both the major and the minor must meet his approval.

Departments may require all senior majors to take the Graduate Record Examination, and the score on the examination may be one factor in determining whether or not the student has completed the requirements for his major. (See *Special Fees*, at the end of this section.)

As soon as a student has decided on his major, he should consult the chairman of the department in which his major study will be done. While no student is compelled to declare his major before he applies for admission to the Upper Division, in some departments it is essential that the planning be done not later than the beginning of the sophomore year, or in some cases earlier, to avoid delay in graduation.

*For this purpose, the School of Education, the Dana School of Music, and the William Rayen School of Engineering are departments, and each foreign language is a department.

General Course Requirements: Basic

The following *basic* requirements are ordinarily met through particular courses designed and specified for them. They apply to all degrees.

Communication. The candidate must show satisfactory proficiency in the use and understanding of the English language. The Director of the Division of Language and Literature is the judge of this proficiency. Ordinarily he will grant a certificate to a student who has received a grade of C or higher in the final semester of his required course in communication or its equivalent.

This requirement is normally met by taking Communication 105-106-107, totaling nine semester hours. A student who has had part or all of some other "freshman English" course, either at this institution or elsewhere, should consult the Director of the Division of Language and Literature before registering at Youngstown University.

Health Education and Physical Education. Each candidate must normally have four semester hours of credit in health education and physical education. Usually this consists of two hours of health education (Health Education and Physical Education 109M, 109W or 109C [two credit hours], and four ½-credit-hour physical activity courses totaling two hours). The candidate who completes the two-year course in military science needs only two hours of Health Education and Physical Education 109M (see *Modifications for R. O. T. C. Students*, further on in this section). Other substitutions of courses or of training received in active military service to meet any part of this requirement must have the approval of the Chairman of the Department of Health Education and Physical Education.

Orientation. Every candidate must have one hour of credit for Orientation 100.

General Course Requirements: Area

In addition to the basic course-requirements, there are the following general requirements in particular *areas* of study:

Social Studies. The candidate must have 12 credit hours in the social sciences, except for the Bachelor of Engineering degree, for which the requirement is 9 hours.

Normally he must meet this requirement by taking Social Science 101 and 102 and History 201 and 202 (except for engineering students, who take only one 200-level history course). However, a transfer student with less than 64 but more than 32 credit hours acquired elsewhere may omit Social Science 101 and 102, and a transfer student with 64 or more hours acquired elsewhere may omit all four courses, provided his credits include 12 hours in the social sciences at the time he graduates.

Religion. The candidate must have completed either a three-hour course in the Department of Philosophy and Religion, or Humanities 401 or 402.

Science. There is a requirement in this area for every degree, but there is considerable variation among the several degrees in the choice of courses

CONDENSED TABLE OF COURSES REQUIRED FOR GRADUATION

INCLUDING SPECIFIED PREPARATORY UNITS

	A.B.*	B.S.*	B.S. in Ed.*	B.S. in B.A.*	B.E.*	Mus. B.*
PRE-COLLEGE[1]	(These figures mean high school units.)					
English	3	3	3	3	3	3
A foreign language[2]	2	2[3]	—	—	—	—
U. S history and civics	1	1	1	1	1	1
Algebra[4]	1 or 2[5]	1 or 2[5]	—	—	2[5]	—
Geometry[4]	1	1	—	—	1	—
Biology, chemistry, or physics[4]	1	1	—	—	1[6]	—
Any mathematics[4]	—	—	1	1[7]	—	1
Any science or additional mathematics[4]	—	—	1	1	—	—
Any science[4]	—	—	—	—	—	1
	9 or 10	9 or 10	6	6	8	6
Other subjects[8]	7 or 6	7 or 6	10	10	8[9]	10[10]
Total high school units	16	16	16	16	16	16
IN THE UNIVERSITY	(These figures mean semester hours of credit.)					
General						
Basic						
Communication	9	9	9	9	9	9
Health and Physical Education	4	4	4	4	4	4
Orientation[11]	1	1	1	1	1	1
Area						
Social Studies	12	12	12	12	9	12
Religion[12]	3	3	3	3	3	3
For the Degree[13]						
Laboratory science[14]	8	Included in the major	—	—	18	—
Science or mathematics	3		9[15]	9[15]	26	6
Foreign language[16]	6	6[3]	—	—	—	—[17]
English	3	—	3	3	3	—
Psychology	3	—	6	3	—	3[18]
Other courses[19]	73	71	78	81	85	98
Total credit hours	125	136	125	125[20]	152	136[20]

NOTES

*The full names of the degrees are as follows: A.B., Bachelor of Arts; B.S., Bachelor of Science; B.S. in Ed., Bachelor of Science in Education; B.S. in B.A., Bachelor of Science in Business Administration; B.E., Bachelor of Engineering; Mus. B., Bachelor of Music. The student working for the title of Associate in Business Administration must meet the pre-college units specified for the B.S. in B.A.; the university-level courses are specified in the School of Business Administration section.

[1]Pre-college units lacking at the time of entering the University are to be made up before the beginning of the junior year.

[2]An entrant lacking these units may make up the deficiency by taking a first-year foreign language course without University course-credit, or by any other means acceptable to the Committee on Proficiency in a Foreign Language.

[3]Foreign language study is not required for the Bachelor of Science degree if the student is a registered nurse or completes the combined major in medical technology.

[4]An entrant who lacks one or more of these units may make up the deficiency by taking the relevant high-school-level course offered by the business organization, mathematics, or physics department without University course-credit, or he may make it up in any other way acceptable to the department concerned.

[5]One unit is enough except for a major in chemistry, earth science, engineering, mathematics, or physics, for a major in pre-medical or allied sciences, or for a minor in mathematics or physics. Such fields require Mathematics 151, the prerequisite for which is two units of high school algebra and a half-unit of trigonometry.

[6]For the Bachelor of Engineering degree one unit of physics is required.

[7]Two years of algebra are required for accounting and management majors. Such majors who have only one year of high school algebra must take Business Organization 141R.

[8]It is suggested that these unspecified units include additional courses in history, foreign languages, English, laboratory sciences, and mathematics, since many specialized University curriculums leave little or no time for some of them, especially history, literature, and foreign languages.

[9]A unit of mechanical drawing and a half-unit of trigonometry or solid geometry, or both, are particularly advisable.

[10]In addition to these units the applicant is expected to have developed a certain proficiency in one or more branches of applied music. See the Dana School of Music section.

[11]Part-time students are not required to take the Orientation course until they have completed 64 semester hours.

[12]Any course in the Philosophy and Religion department, or Humanities 401 or 402. Students working toward a high school teaching certificate must take six semester hours in the Philosophy and Religion department, or three semester hours of course work in that department and three in fine arts.

[13]Requirements peculiar to a particular degree are explained more fully in the section of this catalog primarily concerned with that degree.

[14]All eight hours to be completed in *one* of the following departments: biology, chemistry, geology, or physics.

[15]Six of the nine semester hours required must be in science. The mathematics for the B. S. in B. A. degree may be Business Organization 131 or 141-142 or Merchandising 121.

[16]If this requirement is met with a language not previously studied, 12 hours are needed. No University course-credit is given for the first six hours if the student has not studied some one foreign language successfully for two years in high school. See *Proficiency in a Foreign Language* in the College of Arts and Sciences section.

[17]For voice majors 18 credit hours are required. Part of this requirement may be met by 2 units of high school study in one of the following languages: French, Italian, or German. In this case 12 hours are required (six hours in each of the two languages not previously studied).

[18]For the Bachelor of Music degree with the major in music education, the requirement is six hours.

[19]These include all courses necessary for the major, minor or minors, teaching certification (if needed), and for any other special purposes. For many fields, all the courses required or suggested are listed in the form of year-by-year curriculums in the pertinent sections of this catalog.

[20]This total is a few hours higher in some fields of specialization. (For example, the sacred music major totals 139; accounting, management, and public administration total 136 each; general business, commercial art, and traffic and transportation management total 130 each.)

allowed and in the rigor of the technical approach to the subject. The relevant details are therefore stated in the section pertaining to the particular degree.

Additional Requirements for Each Degree

A degree requirement is one which applies to all (or, in a few cases, to most) of the students seeking a particular degree. but is not necessarily a requirement for other degrees. Degree requirements will be found as follows:

Those for the degrees of *Bachelor of Arts* (A. B.), *Bachelor of Science* (B. S.), and *Bachelor of Science in Education* (B. S. in Ed.) are stated in the College of Arts and Sciences section. Those for the *Bachelor of Arts and Bachelor of Science in Education* degrees are repeated in the School of Education section.

Those for the degree of *Bachelor of Science in Business Administration* (B. S. in B. A.) are in the School of Business Administration section.

Those for the degree of *Bachelor of Engineering* (B. E.) are in the William Rayen School of Engineering section.

Those for the degree of *Bachelor of Music* (Mus. B.) are in the Dana School of Music section.

Modifications for R. O. T. C. Students

R. O. T. C. students may have certain courses waived, as follows:

a. Students completing Military Science 101-102 and 201-202 may omit two credit hours in health education and physical education *activity* courses. Such students, except those who are working toward a Bachelor of Engineering, may also omit Social Science 102 (three credit hours).

b. In addition, students completing Military Science 301-302 and 401-402 and working toward any degree except the Bachelor of Engineering may omit Psychology 201 (except as a prerequisite to other courses) and three other credit hours to be determined in consultation with their adviser. For the degrees of Bachelor of Arts, Bachelor of Science in Business Administration, and Bachelor of Science in Education, the course thus omitted may be three credit hours of science, provided that the candidate for the Bachelor of Arts takes eight credit hours of course work in *one* of the following departments: biology, chemistry, geology, or physics.

Unless specifically provided for above, no course required for the degree sought may be waived.

Requirements for a Second Baccalaureate Degree

A student who has a degree from Youngstown University and desires a second degree must earn 18 semester hours of credit in addition to the total that he had when he completed the requirements for the first degree, meet all requirements for the second degree, and complete the requirements for another major.

A student who has a degree from another institution and desires a degree from Youngstown University must complete a minimum of 30 semester hours, meet all requirements for the second degree, and complete the requirements for a new major and minor.

Curriculums to Meet Special Requirements

All states have detailed programs of courses necessary for teaching certificates: medical schools have specific requirements for pre-medical study; and many law, theological, technological, and graduate schools have more or less mandatory recommendations for those seeking admission. A prospective teacher, therefore, or anyone wishing to enter a professional, technological, or graduate school of any kind should consult the Dean of the University as early as possible. Such special needs can usually be met within the degree requirements of Youngstown University, but the proper selection of courses may have to begin in the freshman year.

Commencement Exercises

There are two graduation ceremonies each year: Spring Commencement, in May or June, at the end of the second semester of the academic year; and Summer Commencement, in August, at the end of the summer session. A student who completes the requirements for a degree or title at the end of the first semester receives his diploma in June and is present, if at all possible, at Spring Commencement as a member of the graduating class.

GENERAL REGULATIONS

Scheduling of Courses; Advisement

A student already attending the University makes out his schedule of courses for the next semester in consultation with a faculty adviser who must sign the student's schedule, even when a prescribed curriculum leaves him no actual choice of courses.

A student entering for the first time, or a former student wishing to re-enter, gets instructions for scheduling and advisement at the Registrar's Office.

The student planning his program should understand that some courses are not offered every term. Those offered in a particular semester or summer session, with their times and places, can be ascertained from the *Schedule of Classes* for that term, which is published in time for use in advisement and scheduling for the term in question. For information about future offerings, or when a particular course will be offered again, the student may consult the dean of the unit concerned, or the department chairman.

Although the University tries, through its advisement system, to insure the student's taking all the courses needed for

his degree, *the ultimate responsibility for meeting any requirement rests with the student himself.* He will do well to read the statements under *Candidacy for a Degree*, further on in this section.

The Class Hour, Semester Hour, and Semester Hour of Credit

The *class hour** is a weekly 50-minute class period and is the basic unit of instruction. The term *semester hour** signifies one class hour a week carried for one 17-week semester (or the equivalent in a summer term). A *semester hour of credit** is the amount of credit given for one semester hour successfully completed. Each semester hour of credit represents *three hours of study and instruction* every week throughout the semester.

The Time/Credit Ratio

As seen above, credit is based on a time/credit ratio of three hours a week of study and instruction to one semester hour of credit. Of these three hours, the class hour is one: the other two are the time spent by the student in preparing for the class hour, or in supplementing it. In other words, *for every class hour, two additional hours are expected to be spent outside of class* in reading, writing, thinking, solving problems, laboratory activity, or whatever the course calls for. The exact amount may vary from day to day, depending on the particular assignment, the individual student, and other factors; but assignments are normally made on this one-plus-two principle, and the student is responsible for completing them.

Thus, for example, a so-called "three-hour" course actually involves nine hours a week, consisting of at least 150 minutes of class sessions (that is, three class hours**) and six hours of study done out of class. If the course involves laboratory periods, these form a part of the weekly total of nine hours.

Accordingly, the student carrying a 16-hour schedule, for example, should count on devoting to it an average of 48 hours a week (exclusive of time spent in extra-curricular activity, commuting, eating, etc.). The slower student may find that more than 48 hours is necessary. These facts should be kept in mind especially by students planning to hold jobs while attending the University.

The Student Load

The courses taken by a student during any semester constitute the *load* that he carries for that semester. The load is measured in semester hours. The size of the load a student is

*Often called simply "hour of credit." The expression "credit hour" sometimes means "semester hour of credit" and sometimes merely "semester hour."

**In a three-hour course the class hours may take the form of three 50-minute sessions weekly, or two 80-minute sessions weekly, or (as in some laboratory courses) one or two 50-minute class sessions and one or more laboratory periods weekly which include instruction, or any other practicable form.

permitted to carry depends on the degree he is seeking (and hence on the curriculum he is following) and to some extent on his grade average, as follows:

a. A student following a business administration, engineering, or music curriculum may carry as many hours as the curriculum requires, with the approval of the dean of his school. Such approval ordinarily is given.

b. All other students are governed by the following regulations:

1. A student with a point index of 3.0 or better may carry 18 semester hours with his adviser's approval, which ordinarily is given.

2. No student may carry more than 18 semester hours, and no student whose point index is below 3.0 may carry more than 16 semester hours, unless his written request to do so is approved by his adviser and by the Committee on Academic Standards.

3. In determining a student's semester load, all courses are counted, whether they give credit toward graduation or not, except Orientation 100 and the general-requirement courses in health education and physical education.

4. Any student may, with his adviser's approval, carry a course in military science in addition to the semester load allowed him according to the preceding regulations.

The form for an overload request is available at the Registrar's Office. After grades for the preceding term are reported, a dean may reduce the schedule of any student in his unit whose record is poor.

Extra Hours' Credit

Credit for more than the stated hours may be obtained for extra work done in a course under the following restrictions:

1. Permission shall be limited to seniors.

2. A brief description of the extra work shall be supplied by the teacher.

3. Such extra work shall be done only under the supervision of a full-time teacher.

4. The extra credit shall not exceed one hour for each course or one course each semester.

5. An application form must include the signatures of the teacher and the department chairman, and receive the approval of the Dean of the University.

Auditors

A student may register for and attend any course as an auditor. An auditor is not held responsible for the regular classwork and preparation of assignments and receives no credit for the course. However, he pays the regular tuition for the course, as well as any applicable course-fees, and it is counted in his load. A student who has registered for a course for credit may not change his status to that of auditor after six weeks of a regular semester or two weeks of a summer session have elapsed.

(An auditor is not to be confused with a special student; see *Special Students*, at the beginning of this section.)

Registration

Every student registers in person for the work of each session on or before a final registration date. Only under exceptional circumstances may a student register after that date, and one who does is charged a fee. One who has begun his registration before the deadline may complete it late, but must likewise pay a fee. There is no reduction of tuition or other fees because of late entrance into courses.

No student may enter a course after the first meeting of the third week of a semester or after the seventh calendar day of a summer term.

Registration of Freshmen

The student enrolling for the first time is instructed at the Registrar's office about scheduling his courses and registering.

An entering freshman who registers in Liberal Arts and who is undecided about his major may be scheduled for Orientation 100, Communication 105, Social Science 101, a laboratory science, a foreign language, and basic courses in Health Education and Physical Education. To complete his schedule the following are possible electives: Art 113, Business Organization 111, Education 101, Geography 102, 119, History 105, 107, 201, 202, Home Economics 101, 103, Mathematics 151, Military Science 101, Philosophy 100.

Freshman Days

The Freshman Days program is held the last three days of the week preceding upper-class registration. It is designed to help the new student adapt himself to his new surroundings and activities. During the first two days entering freshmen are required to attend the Orientation 100 sessions and to complete their final registration. On the third day a Freshman Picnic is held, at which brief speeches by the administrative staff and various campus leaders are given and a picnic lunch is served.

Change of Registration

A student wishing to alter his schedule after registration must fill out a Change of Registration form, have it signed by the teacher or teachers concerned and by his adviser, and present it to the Business Office for approval and acceptance. A mark of WF (withdrawal with failing grade) is recorded for a course dropped without this procedure, since such withdrawal is not official.

Anyone changing his registration after the registration period pays a fee, unless the administration has requested the change.

Full-Time Status

A full-time student is one carrying 12 or more semester hours in courses that give credit toward graduation.

Class Rank

If the student is working for the degree of Bachelor of Arts, Bachelor of Music, Bachelor of Science, Bachelor of Science in Education, or Bachelor of Science in Business Administration, in which the number of hours required ranges from 125 to 139, he is ranked as a freshman until he has completed 32 hours, as a sophomore until he has completed 64 hours, as a junior until he has completed 96 hours, and thereafter as a senior.

If he is working for the degree of Bachelor of Engineering, in which the number of hours required is 152, he is ranked as a freshman until he has completed 38 hours, as a sophomore until he has completed 76 hours, as a junior until he has completed 114 hours, and thereafter as a senior. See also *Candidacy for a Degree*, below.

Upper and Lower Divisions

Courses numbered from 100 to 199 are designed for the freshman level; from 200 to 299, the sophomore; from 300 to 399, the junior; and from 400 to 499, the senior. The freshman and sophomore levels constitute the Lower Division, and the junior and senior levels the Upper Division. (For graduation, at least 60 semester hours must be completed in courses numbered 200 or higher; and at least 40 of these 60 hours must be courses numbered 300 or higher.)

No freshman may take an Upper Division course (except in a foreign language) without the approval of the Dean of the University. A senior taking a 100-level course will receive only two-thirds of the normal credit for it, unless the chairman of his major department and the Dean of the University waive the rule.

Candidacy for a Degree: Admission to the Upper Division

A student who wants to become a candidate for a degree from Youngstown University must file with the Records Office an application for admission to the Upper Division. This application must be filed when the student has completed 48 to 64 semester hours. A transfer student with 48 or more semester hours must file such an application when he applies for admission to Youngstown University. The student is admitted to the Upper Division upon approval of his application and completion of 64 semester hours. Until admitted to the Upper Division, no student may be given junior or senior class standing or be considered a candidate for a degree.

His application form must indicate:

1. The degree for which he is a candidate. He may thereafter change his degree objective only by filing a new application for admission to the Upper Division as a candidate for the new degree.

2. Pertinent to the degree sought, his completion of
   (a) all pre-college requirements;
   (b) the Communication and English requirements through Communication 107;
   (c) the laboratory science requirement;
   (d) a total of 48 to 64 semester hours of credit, *not including courses taken to meet any pre-college requirement.*

3. His major subject, with the signed approval thereof by the chairman of the major department. He may thereafter change his major only by formal application to the Dean of the University and with the approval of the chairmen of both the old and new major departments.

Grading System

The grade for a course completed may be A, B, C, D, or F.

Teachers assign grades on the basis of achievement in the subject matter of the course and in accordance with accepted professional standards for that subject. The grade earned by a student thus represents the quality of his work and is not based merely on competition within the class.

The grade of A represents exceptional work in which the student shows that he has firmly grasped and achieved the objectives of the course.

The grade of B indicates very good work, considerable grasp of the essentials of the course, and some insight into its finer points.

The grade of C indicates good work and a usable grasp of the essentials of the course.

The grade of D indicates a definite but not necessarily coherent knowledge of the essentials of the course.

The grade of F indicates that the student has not achieved even a minimum grasp of the essentials of the course. This grade can also result from dropping the course improperly (by unofficial withdrawal) or from cheating or dishonesty of any kind in the course.

The temporary grade of E is given to a student who has not completed a course (including the final examination) when grades are submitted. If he does not complete it within 60 days thereafter (except as noted below), the grade becomes an F unless circumstances warrant an extension of time. The teacher is notified before such an F is recorded.

If a student has been absent without explanation and it is not known whether he has dropped the course, the grade of E

may be given if, in the teacher's judgment, the part of the course missed can be practicably made up and a grade other than F is possible on its completion.

If a student has received an E in a prerequisite course and has been allowed to enter the following course, he should see that the E is removed by the end of the sixth week of the second course. Otherwise, if the E becomes a grade that does not satisfy the prerequisite, he will have to drop the course he has been allowed to enter, and will receive a WF in it for dropping it later than the sixth week.

A progressive grade (PR) is given only at the end of the first semester of certain approved hyphenated courses in which one project occupies the major work of both semesters, so that no judgment can be made at the end of the first semester. This grade is changed at the end of the second semester. It has no effect on the point average.

Other marks recorded are:

Aud, signifying that the student has attended the class as an auditor (this mark may be given only to a student who has begun a course as an auditor or who has changed his status to that of auditor before six weeks of a regular semester or two weeks of a summer session have elapsed);

WP (withdrawal with passing status), representing official withdrawal from a course before the end of the sixth week of a semester, the first week of a five-week summer course, or the second week of a ten-week summer course;

WF, meaning withdrawal with failing status.

(WP and WF are determined and recorded by the Recorder, not by the teacher.)

A student who has received a WF may petition for a WP by submitting a written form to the Dean of the University; and he may appeal to the Committee on Credits and Admissions for reconsideration of any final grade, if he feels that the grade was given without proper regard for some pertinent factor or circumstance.

The distribution of achievement, and therefore of grades, in a large unselected group of students generally follows the normal frequency curve, in which 5% to 10% are A's, 20% to 25% B's, 40% C's, 20% to 25% D's, and 5% to 10% F's. However, since it is likely that substantial variation from the normal distribution will occur in individual classes, the teacher will not use the "curve" as a standard to be imposed but only as a model against which he may compare each particular class, using his own judgment on the basis of professional standards.

Teachers may use plus and minus modifications of the grades but they are not recorded or used in calculating the point index.

Proficiency in English

The student's ability to express himself in English is not the concern of the Department of English alone, but of every member of the University faculty. Inadequate competence in this respect is to be regarded as a reason for lowering a student's grade in any course in the University.

The Point Index and Scholastic Standing

The student's scholastic standing is indicated by his point index (also called "grade average"). For determining this, every grade has a point value for each semester hour it represents, as follows: A, 4 points; B, 3 points; C, 2 points; D, 1 point; F, E, or WF, no points. For example, an A in a 3-hour course is worth 12 points; a D in a 4-hour course, 4 points; and an F or WF in any course, no points. To find the point index, the total number of points earned is divided by the number of semester hours for which final grades have been given. Thus a student who attempts 16 semester hours and earns 40 points has a point index of 2.50. The grades of Aud, PR, and WP, and grades for courses that give no credit toward graduation, are not included in the calculation of the point index. (See also *Repetition of Courses*, further on in this section.)

Grade Requirements and Probation

A student whose point index for a semester is less than 1.50 while he has fewer than 30 semester hours of credit, less than 1.75 while he has fewer than 61 hours, or less than 2.00 after he has 61 hours, will be on probation the following semester. If he does not raise his point index to the required minimum during the probationary semester, he will be readmitted for the following term only at the discretion of the Dean of the University. The student must have a cumulative point index of 2.00 to be eligible for a degree.

A student seeking the degree of Bachelor of Engineering must maintain a point index of 2.00 or higher at all times; see the section on the William Rayen School of Engineering.

A student other than a beginning freshman who receives grades of F in half, or more than half, of the total number of semester hours for which he is registered will not be readmitted for the following term.

Grade Reports

A report of his grades is sent to every student by the Recorder as soon after the close of a semester as possible. The

teacher may use other means to provide such information more quickly.

The Dean's List

The Dean's List is made up of all undergraduates who earn a quality point average of 3.2 in any given semester.

The Honor Roll

The honor roll, announced twice each year, consists of the five per cent of each class who have the highest point indexes. Class rank is determined by the definitions found under Class Rank. A student with less than 12 semester hours of credit acquired at Youngstown University is not included in the roll.

For freshmen and sophomores, the top five per cent are determined on a University-wide basis; for juniors and seniors, those included are the five per cent who stand highest among the candidates for each degree.

Honors Day

The Honors Day exercise recognizes those students who have distinguished themselves academically. The awards given at this exercise are listed under *Awards and Prizes* in the General Information section.

Graduation Honors

Graduating seniors who rank high scholastically are awarded special honors at the commencements.

Those who attain a quality point average of 3.8 are granted their degrees *summa cum laude.*

Those who attain a point average of 3.6 are granted their degrees *magna cum laude.*

Those who attain a point average of 3.3 are granted their degrees *cum laude.*

Transfer students with 60 semester hours of credit are eligible for graduation honors, but no transfer work may be included in the calculation of the point average. No transfer student admitted to the University on probation is eligible for honors.

Repetition of Courses

A student may repeat a course once. If the course repeated is prerequisite to another course, the repetition must be successfully completed before the other course is taken. No course may be repeated if the student has received credit for a more advanced course in the same subject. If a course is repeated, the repetition is treated merely as another course, along with the

first, in calculating the point index. A course repeated, however, may be counted only once for university credit.

Absence from Classes and Examinations

If a student is irregular in class attendance, the number of semester hours of credit he would otherwise earn may be reduced.

A student must have the teacher's consent in order to take any examination at a time other than the scheduled one. The teacher, if he gives such consent, may waive the Fee for Irregular Examination if such action seems warranted. If the test is to be taken at the Testing Office, the student presents there a permit signed by the teacher. Permit forms are available at the unit dean's or the Registrar's office.

Honorable Dismissal

A transcript of credits serves as a statement of honorable dismissal except when such a statement is not merited. A transcript indicates whether a student is withdrawing in good standing and shows any disciplinary action he may have incurred while attending Youngstown University. No transcript is issued to a student who has not met all his financial obligations both to the University and to recognized campus organizations.

If a separate statement of honorable dismissal is needed, the Dean of the University will furnish one, provided the student is of good character, has a satisfactory record of conduct, has no financial obligations to the University, and is withdrawing voluntarily for acceptable reasons; and provided that the student, if withdrawing during a term, follows the official procedure for a change of registration. A statement of dismissal issued with any of these conditions unmet may be expected to include an explanation of the circumstances.

FEES AND EXPENSES

All tuition and fees for any term are due at registration. No student may attend classes until he has completed his registration by paying his tuition or arranging with the business manager for its payment. (Late registration entails a penalty fee; see *Special Fees.*) If payment is by installments there is a carrying charge on the unpaid balance, and lapse of payment results in suspension from classes; see *Tuition Payment by Installments.*

No student may enroll for a new term until he has paid all his previous tuition. No student may graduate or receive a transcript of credits who has not met all his University obligations by May 1 of the year of his intended graduation or transfer, or by the previous December 1 if he intends to transfer at the end of the first semester.

The Business Office, including the Cashier's Office, is open during the following hours: 8:30-11:30 a. m., 12:30-4:30 p. m., and 6:30-8:30 p. m. Monday through Friday, and 8:30 to noon on Saturday.

Tuition

The rates in the following tables are for a single term. In determining the student's load for the assessment of regular fees for services and activities, all courses are counted except music ensemble courses for which no tuition is charged.

Any or all exceptions to the payment of fees shall be determined by the Business Manager.

For All Students in the College of Arts and Sciences, the School of Business Administration, the School of Education, and the William Rayen School of Engineering

Each Semester:

Tuition: each semester hour ..... $ 18.00

Laboratory or other special course fees:

See *Courses of Instruction* in each school, and *Special Fees* further on in this section.

For Full-time Students in the Dana School of Music*

Each semester:

Tuition (12 to 15 semester hours) $216.00

Each semester hour over 15 ..... $18.00

Applied Music Charge (basis: $68.00 for each credit hour of applied instruction) † $204.00

Each additional lesson a week $45.00

Each minor taken by class instruction $10.00

$420.00

For Part-time Students in the Dana School of Music*

Each semester:

Tuition: each semester hour ..... $ 18.00

Applied Music rates:

One half-hour private lesson a week ..... $ 68.00

*A full-time music student is one enrolled in the Dana School of Music and carrying 12 or more semester hours, inclusive of applied music but exclusive of music ensemble courses.

†The Applied Music Charge and Hours of Credit. The $68.00 is in addition to the $18.00 a credit hour tuition; but full-time students have 1, 2, or 3 credits free of tuition charges. For each credit, 17 half-hour lessons are provided. Every music curriculum includes courses in applied music that require 2 private lessons a week in the major and 1 lesson or class instruction in the minor. The semester hours of credit that may be earned in such courses are included in the 12 or more hours covered by the tuition charge. The amount of the credit depends on the degree of proficiency and amount of practice demanded by the curriculum: **voice, instrumental, or sacred music** majors may enroll for and earn 3 semester hours of credit in their applied music major; a **theory, composition, or music education** major, 2 hours. If an approved schedule has less than 3 credit hours of applied music, the $216.00 will apply, nevertheless, for 12 to 15 credit hours.

For refunds on withdrawal from applied music courses, see **Withdrawals and Refunds**, further on in this section.

In the Secretarial School

See the special brochure issued for this school. For full-time work taken for college credit, the tuition and fees are the same as for the School of Business Administration.

For the Summer Session

The tuition rate for the summer session is $18.00 a semester hour, plus any additional course and/or laboratory fees. The Schedule of Classes for the summer session is published each April.

Students who take summer courses in applied music pay tuition at the regular rate for the semester hours of credit, plus applied music charges at the rate of $68.00 a credit hour.

For Audited Courses

A person auditing a course or courses pays tuition at the regular rate of $18.00 a semester hour, plus any laboratory, regular, or other special fees that may be applicable.

In the Technical Institute

For the present, tuition for this training is paid directly to the University by the participating firms.

Special Fees

The following fees are payable by those to whom they apply. Any exception is determined by the Business Manager or as stated in the description of the fee.

Matriculation Fee. A fee of $15.00 is charged every new student, once only, to cover the cost of his initial registration. It must accompany his application for admission and is non-refundable.

Records and Reports Fee. A fee of from $2.50 to $10.00, depending on the number of semester hours carried, may be charged anyone whose work, status, or purposes are such as to involve an amount of processing, record-keeping, or other clerical expense beyond that ordinarily necessary.

Laboratory Fees and similar special course-fees, indicated in the descriptions of the courses for which they are charged, cover the cost of materials consumed or other expenses peculiar to the courses concerned.

Activity Fee. Part-time students carrying 11 hours or less may obtain Student Activity and Athletic Books upon payment of a $5.00 fee.

Late Registration Fee. A fee of $5.00 is charged any student who completes his registration after the final registration date. Late registration includes failing to appear at final registration following the completion of any kind of pre-registration.

Change of Registration Fee. A fee of $2.00 is charged anyone changing his registration, unless he does so at the request of the administration. Recommendations for waivers will be determined by the deans of the various schools or by the directors of divisions; the Dean of the University will recommend waivers for independent departments. Appeals and approvals will be subject to the supervision of the Finance Committee.

Registration Withdrawal Fee. A fee of $5.00 is charged when a student withdraws from all his courses and the terms under *Withdrawals and Refunds* (further on in this section) are waived by the Business Manager.

Reinstatement Fee. A fee of $2.00 is charged anyone readmitted to classes after a suspension.

Special Check Handling Fee. A fee of $5.00 is charged any student who pays the University with a check that is not accepted by the bank it is drawn against.

Fee for Credit by Equivalency or Examination. A tuition fee of $18.00 is charged for each hour of credit honored for graduation when such credit is given as the result of examination or equivalency evaluation without the student's having attended the regular classes for the course of instruction. Credit by examination may be granted under special circumstances to students who can demonstrate proficiency in certain subjects. The subjects in which such examinations may be given and the nature of the examinations are to be determined by the departments and divisions concerned and must be approved by the Dean of the University.

Fees for Irregular Examinations. When a student is allowed to take an examination at a time other than the scheduled one, a fee of $5.00 for a final examination or $3.00 for any other examination is charged at the discretion of the instructor, except in case of illness, when the student must present a letter from his physician.

Graduate Record Examination Fee. Three kinds of Graduate Record Examinations are administered: a general aptitude test; area tests in social science, humanities, and natural science; and advanced tests in twenty-one fields. Individual departments specify which must be taken. The fee for one is $2.50; for two, $4.50; for three, $6.00.

Graduation Fee. A fee of $20.00 is charged anyone who is to receive a degree or title. The fee, which includes cap and gown rental, announcements, and diploma, and which helps defray the general expenses attendant to the baccalaureate and commencement exercises, must be paid at the time the official application for graduation is submitted to the Recorder. No reduction in this fee may be made for graduation *in absentia* or for approved use of non-academic apparel.

This fee applies for each degree or title granted (unless honorary), except that if two degrees are to be conferred at the same commencement, the total fee is $25.00 ($5.00 plus the regular $20.00).

Transcript of Credits Fee. A fee of $1.00 is charged for each transcript.

Student Locker Deposit and Fee. A student assigned a locker deposits fifty cents at the time of assignment. At the end of the semester, or upon withdrawal from the University, he is refunded the deposit less a handling charge of ten cents. For further information on lockers, see the General Information section.

Military Equipment Deposit and Fee. Every student taking military science deposits at the beginning of the academic year the amounts shown below toward coverage of the cost of United States government property assigned him. When he returns all such property at the end of the year or upon withdrawal from the University, he is refunded the total deposit; how-

ever, if any of the property is lost or damaged, the cost of such property is deducted.

First year	$10.00	Third year	$ 4.00
Second year	10.00	Fourth year	4.00

R. O. T. C. Activity Fee. Every student registered for a course in military science is charged $3.00 each semester as a special activity fee. This fee provides funds for the annual Military Ball: awards and recognition for meritorious service to the R. O. T. C. in athletics and in extra-curricular activities: athletic events and contests: and miscellaneous matters pertinent to the function of the R. O. T. C. Cadet Corps.

Special Fees for Music Students. The following fees are stated more fully in the Dana School of Music section:

Piano Practice Fee, major	$ 5.00 a semester
Piano Practice Fee, minor	2.00 a semester
Organ Practice Fee, major	40.00 a semester
Organ Practice Fee, minor	20.00 a semester
Instrument Rental Fee: each instrument	5.00 a semester
Student Recital Fee	$15.00 for each recital
Entrance Examination Fee (paid before taking examination)	$5.00

Tuition Payment by Installments

An installment plan is available to students who accept and abide by its conditions. The conditions include an immediate down payment; adherence to the schedule of payments, as provided on the statement of charges or as adjusted by revisions following the processing of official changes of registration or approvals of extensions; and, in the event of withdrawal or suspension from classes, the understanding that the payments already made do not constitute payment in full, except as governed by the provisions shown under *Withdrawals and Refunds*, further on in this section.

The minimum down payment is $50.00 or 33⅓% of the total charges, whichever is greater, except in the instance of total charges under $50.00, in which case payment in full is due at registration. A fee is charged against the remaining balance. The balance of the tuition, including the deferred fee, must then be paid in two equal payments according to a schedule arranged by the Business Office. A refund of a portion of the deferred fee will be made by the Business Office if the installment account is paid in full before the end of the deferred period. A table of refunds is on file in the Business Office.

Because the University holds the student reponsible for his financial obligations, the statement of charges and the installment payment agreement are made out in the name of the student, not in the name of a parent or another third party. Potential scholarships are not effective until proper credentials are presented. A scholarship, grant, or assistantship may revert

to a personal obligation if a withdrawal or a violation of the regulations pertaining to the benefit should occur. Any amount of tuition and fees not covered by the benefit is payable by the student, by installments if necessary, and with the understanding that as far as the remission of the remainder of the account is concerned the benefit actually takes effect following the clearance of the student's personal obligation.

Failure to meet the terms of an installment agreement may result in suspension from class attendance, and in the event such action is taken the account is in no way changed. Following payment or approval of an extension, the student's return to classes is approved by a signed reinstatement form, provided by the Business Office, which requires the payment of a $2.00 reinstatement fee. An installment account may be denied for future terms if its conditions were not met in the current or previous term.

Withdrawals and Refunds

No student may enroll for less than a full term. If a student must withdraw from a course or from the University, he must fill out an official Change of Registration form and present it to the Registrar and Business Manager. Failure to atend class or merely notifying the teacher, the Recorder, or some other staff member is not an official notice of withdrawal.

If a student is permitted to withdraw from a course or from the University, the tuition charge for the session, based on the date of the official acceptance of the change of registration or withdrawal by the Business Office, will be as follows:

Date of Acceptance by Business Office:	*Length of Term:* Weeks Incl. 16-19	Weeks Incl. 9-11	Weeks Incl. 3-5
First week	20%	25%	50%
Second week	20%	50%	100%
During third week	40%	75%	100%
During fourth week	60%	100%	——
During fifth week	80%	——	——
Sixth week or following	100%	——	——

If a course is canceled by the University, tuition paid for it will be refunded in full or credited against another course or courses, as the student wishes. See additional policies and precedures shown below under *Exceptions*.

Applied Music. When a student withdraws from a course in applied music, where the instruction is given through private lessons, he is charged $3.50 times the number of lessons taken. For full-time music students a single semester hour of applied music is valued at $45.00.

Exceptions

A student who withdraws from the University for reasons beyond his control, such as illness, military service, or a trans-

fer or shift change imposed by his employer, may have his tuition charges revised in proportion to the number of weeks attended. He must withdraw officially and present valid evidence. The amount refunded depends on the date he last attended classes or when his status changed, whichever is more reasonable.

A student who withdraws voluntarily may have his tuition adjusted if he re-enters the University within one year, unless illness or military service extend his absence beyond a year. The adjustment is made only if the student has paid in full the tuition for the semester in which he withdrew and after the fees for the current semester have either been paid in full or the second installment made. Application for a settlement must be made to the Business Office. No adjustment is made if the student has withdrawn at the request of the University.

COURSE NUMBERING SYSTEM AND ABBREVIATIONS

It is important that the student familiarize himself with the University's course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit.

Hyphen. A hyphen between numbers (*e. g.*, 101-102) indicates that credit is not given toward graduation for the work of the first semester until the work of the second semester is completed, except when special permission is granted by the chairman of the department in which the course is given. The first semester of such a course is prerequisite to the second.

Comma. Ordinarily, a comma between numbers (*e. g.*, 105, 106) indicates that the course extends throughout the year, but that credit toward graduation is given for either semester. If the first semester of such a course is prerequisite to the second, it is so designated.

Course Numbers

Levels. Courses numbered from 100 to 199 are designed primarily for freshmen; 200 to 299, for sophomores; 300 to 399, for juniors; and 400 to 499, for seniors.

Abbreviations and Reference Marks

The abbreviation *h. c.* at the end of a course description stands for "semester hours of credit." Thus, credit for a two-semester course is indicated by the notation *3 + 3 h. c.*, meaning "three semester hours of credit each semester."

The abbreviation *n.c.* means "no credit." Thus, *2 n.c.* indicates that the course offers no semester hours of credit but that the course is regarded as two hours for load and billing purposes.

"Prereq." stands for "prerequisite." Though the prerequisite for a course is usually listed in the course description, it may be given in the general information at the beginning of each departmental section.

An asterisk or other reference mark used in a curriculum ordinarily refers to a note immediately following that curriculum. Occasionally, however, such a note may be at the foot of the page.

The College of Arts and Sciences

Karl Washburn Dykema, Dean

ORGANIZATION AND DEGREES

Organization and Program

Courses taken mainly or entirely in the College of Arts and Sciences lead to one of three degrees: Bachelor of Arts (A. B.), Bachelor of Science (B. S.), or Bachelor of Science in Education (B. S. in Ed.).* The divisions and departments of this unit are as follows:

Division of Language and Literature
- Department of Ancient Languages
- Department of English
- Department of Modern Languages
- Department of Speech and Dramatics

Division of Social Sciences
- Department of Economics
- Department of Geography
- Department of History
- Department of Philosophy and Religion
- Department of Political Science
- Department of Psychology
- Department of Sociology

Division of Science and Mathematics
- Department of Biology
- Department of Chemistry
- Department of Mathematics
- Department of Physics

Other departments
- Department of Art
- Department of Health Education and Physical Education
- Department of Home Economics
- Department of Military Science

Courses are also offered in astronomy, communication, geology, natural science, the humanities, and journalism. For other subjects the index may be consulted.

Major and Minor Fields

For the A. B. degree. The choice is virtually unlimited within the University's offerings. The major may be in any of the departments listed above (with foreign languages regarded as separate departments for this purpose) except in military science. It may be an interdepartmental or combined major in American studies, classical studies, earth science, the humanities, public relations, Romance languages, or social studies, or one of the combined majors mentioned in the next paragraph. It

*The degree of Bachelor of Arts may also be earned in the School of Education or in the Dana School of Music. Most candidates for the Bachelor of Science in Education degree receive it from the School of Education.

may be in music, in education, or in any business administration or engineering subject in which a major is possible (except secretarial studies).

For the B. S. degree. Pure science majors are possible in biology, chemistry, mathematics, and physics. There are special combinations of sciences for pre-medical, pre-pharmacal, and other pre-professional purposes. Combinations of science courses and applied science or technological training are offered as majors in food and nutrition, medical technology, and nursing.

For the B. S. in Ed. degree. The major is completed through one of the teacher-training curriculums. Most of these appear in the School of Education section, where full details are given.

The minor or minors for any of these degrees, unless determined by a prescribed curriculum, may be in any subject or subjects in which it is possible to take 15 semester hours.

Requirements for the Degrees

Bachelor of Arts, Bachelor of Science, and Bachelor of Science in Education

It is the student's responsibility to see that he satisfies all the graduation requirements for the degree he seeks. These consist of:

1. The pre-college or preparatory courses for each degree. These are normally taken in high school, but if not, they may be made up before the junior year in the University. They are listed briefly below; for further information see the *Condensed Table of Courses Required for Graduation*, in the General Requirements and Regulations section, where the explanatory notes should be read carefully.

2. The courses and other requirements to be completed in the University. They are explained in the General Requirements and Regulations section but are recapitulated below.

The curriculums leading to these degrees require a minimum of 125 semester hours of credit and are designed to be completed in four academic years.* A student willing and able to carry heavier loads successfully may finish in less time.** If a student wishes to include summer courses in his program, he should consult his adviser.

R. O. T. C. students are allowed certain modifications of the requirement, as explained in the General Requirements and Regulations section.

---

*The minimum for the Bachelor of Science degree is eleven more semester hours, to permit sufficient specialization without reducing too greatly the student's general training. By attending summer sessons, however, he may complete any of the curriculums in four years.

**This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while in the University.

PRE-COLLEGE

SUBJECT	HIGH SCHOOL UNITS		
	A. B.	B. S.	B. S. in Ed.
English	3	3	3
United States history and civics	1	1	1
A foreign language	2	2	—
Algebra	1 or 2*	1 or 2*	—
Geometry	1	1	—
Any mathematics	—	—	1
Biology, chemistry, or physics	1	1	—
Any science subjects or additional mathematics	—	—	1

IN THE UNIVERSITY

REQUIREMENTS IN ADDITION TO COURSES

	SEMESTER HOURS OF CREDIT		
Completion of the minimum number of semester hours of credit required for graduation	125	136**	125
Upper Division status (including completion of any specified preparatory units lacking at entrance)			
Major and minor requirements			
Course-level requirements			
Point index requirement			
Residence requirement			
Application for graduation			

COURSE REQUIREMENTS

(OTHER THAN THE MAJOR AND MINOR)

BASIC COURSES			
Communication 105-106-107, Basic Course I-II-III	9	9	9
Health Education and Physical Education 109M or 109W, Health Education	2	2	2
Health Education and Physical Education activity courses	2	2	2
Orientation 100, Freshman Orientation†	1	1	1
AREA COURSES			
Social studies:			
Social Science 101 and 102, Introduction to the Social Sciences I, II	6	6	6
History 201 and 202, The United States	6	6	6
Religion:			
A course in the Philosophy and Religion department, or Humanities 401 or 402, Older Classics I, II	3	3	3‡
Science	11	In the major	9
For the A. B. degree: eight hours of *one* laboratory science (in the departments of			

*One is enough except for a science major needing Mathematics 101 or 101R, or for a mathematics minor.

**The minimum for the Bachelor of Science degree is eleven more semester hours, to permit sufficient specialization without reducing too greatly the student's general training. By attending summer sessions, however, he may complete any of the curriculums in four years.

†Not required of part-time students until they have completed 64 semester hours.

‡Students working toward a high school teaching certificate must take six semester hours in the Philosophy and Religion department, or three semester hours of course work in that department and three in fine arts.

	A. B.	B. S.	B. S. in Ed.
biology, chemistry, geology, or physics), and three hours of course work in the departments of astronomy, biology, chemistry, geology, mathematics, or physics. For the B. S. in Ed. degree: six hours in any science subjects plus an additional three hours in mathematics or science.			
OTHER COURSES			
A foreign language (ancient or modern)	6 or 12	6 or 12	—
For the A. B. and B. S. degrees: the requirement is a reading knowledge of the language, defined as what a student should know after two years of successful college study or its equivalent. Whether a student will need six or twelve semester hours to attain this knowledge depends on his high school language courses. *See Proficiency in a Foreign Language*, below. For the B. S. degree: the language chosen must have the approval of the chairman of the major department. Chemistry majors ordinarily must have a reading knowledge of scientific German. No foreign language study is required of registered nurses or medical technology majors. See also *Proficiency in a Foreign Language*, below.			
English	3	—	3
Any 200-level literature course, or Humanities 201, Mythology in Literature.			
Psychology 201, General Psychology	3	—	3
Teacher-training courses (high school)	—	—	21
Education 101, Introduction to Education; 304, Student Teaching Laboratory: High School and Special Field; 306, Principles of Teaching; 308, Educational Sociology; 400, Special Methods; and 404, Supervised Student Teaching: High School and Special Field; and Psychology 202, Educational Psychology. *These courses are also required for students preparing to teach high school who take the A. B. degree.* Most other teacher-training curriculums require additional teaching-methods courses.			
Balance required for graduation	73	71	60
The student allots these hours, in accordance with requirements and his own desires, to completing a major, one or more minors, the foreign language requirement, teaching fields, other special objectives, and elective courses anywhere in the University for which he can satisfy the prerequisites. Except toward the A. B. degree, however, most science and education curriculums allow comparatively little choice of courses.			

Combined Liberal Arts-Professional Course: Medical Students

A student who has completed at least 100 credit hours toward the degree of Bachelor of Arts (or 111 hours toward the degree of Bachelor of Science) and has satisfied all requirements for the degree except the completion of the total number of credit hours required and the completion of a major, will be granted the degree of Bachelor of Arts (or Bachelor of Science) on the satisfactory completion of the remaining number of credit hours at any medical school granting the degree of Doctor of Medicine and approved by the American Medical Association, provided that he has been accepted for further study at the medical school. The student may satisfy his major requirement by utilizing the credit accepted for medical study toward a combined major in pre-medical sciences. He may thus secure the Bachelor of Arts or Bachelor of Science degree after from three to three and a half years in the University followed by approximately a year in medical school.

Proficiency in a Foreign Language

The student's proficiency in a foreign language is determined by a faculty committee. This committee has ruled that the only languages which meet degree requirements are those listed in the *Courses of Instruction* section of this catalog.

For the Bachelor of Arts degree, four high school units, if all in the same language, will satisfy the requirement, with no further study in the University. A student who has three high school units in one language may meet the requirement by taking one semester of additional study in that language. A student with two high school units in one language may meet the requirement by taking two semesters of additional study in that language. A student with one high school unit in language or with none may meet the requirement by taking four semesters of study in one language, but he receives no University course-credit for the first two of them.*

For the Bachelor of Science degree, the same principle applies, but the language must be one that meets the approval of the chairman of the department in which the student is majoring. A student majoring in chemistry who intends to meet this requirement with German and does not take German 215-216 (Chemical German) must pass an examination in scientific German.

The reading knowledge for either degree does not have to be the result of enrollment in classes; it may have been acquired in any way whatsoever. However, in the absence of

*A student who has had only one year in high school might go into the second semester of the elementary course in college, but such a step is usually inadvisable because of the difficulty of picking up the language again after an interruption and because of the frequent difference in the order in which the material is taken up.

credit for high school or college courses as stated above, the student must pass an examination in order to be certified.**

Ordinarily, a foreign language course that duplicates a high school course may not be taken for credit unless the high school course was an extra unit beyond the 16 units required for admission to the University. For example, the student who has completed two years of high school Latin and two years of high school French and has a total of 18 units may take French 101 and 102 for credit, or if he has a total of 17 units may take French 102 for credit. Presumably, he would be repeating the work in these courses to better prepare himself for the 201 course that he would have entered otherwise.

COURSES OF INSTRUCTION AND CURRICULUMS†

American Studies

Professor W. Miner (supervisor)

The program for the combined major in American studies aims, in general terms, to provide a focus for a liberal education. Thus it can be used for almost any pre-professional training. The values of a good liberal education should be obvious to the individual planning on future graduate work in any of the humanities or the social sciences. The student expecting to enter foreign service will find this program particularly appropriate for his needs.

The major is designed so that the student will be stimulated to comprehend his own culture with realistic understanding and with critical detachment. Therefore, he will study the multiplicity of America, learn its historical roots in Western civilization, and acquire enough knowledge of a culture in a foreign language to make meaningful comparisons.

For the combined major in American studies the following program is to be completed:

A. Required courses:
   1. History 105 and 106.
   2. English 205 and 206.
   3. A foreign "civilization" course (such as French 326).
   4. Geography 314.
   5. American Studies 401-402.

B. One course from each of the following numbered groups:
   1. The humanities
      a. An Upper Division American literature course.
      b. English 251 or 351-352.
      c. Humanities 403 or 404.
      d. Philosophy 331.
      e. Art 307, 309 or 310.
   2. American history (Upper Division).
   3. Sociology, anthropology, and economics
      a. Sociology 203, 204, 325, 326 or 409.
      b. Economics 202, 203, 319 or 402.

In such a case the student satisfies the requirement for the degree but receives no course credit. If he wishes, he may be given as many as 6 hours of credit by paying the Fee for Credit by Equivalency or Examination (see **Special Fees).

†The student should familiarize himself with the course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained at the end of the General Requirements and Regulations section.

4. Political Science 201, 202, 304, 305, 306, 307, 403, 405 or 406.

C. Four courses from any one of the groups under B, excluding those taken as fulfillments for B.

Upper Division Course

401-402. *Perspectives on America.* A study of the American scene from differing points of view—cultural, political, social, economic. Prereq.: senior standing. Required of seniors majoring in American studies; open to other seniors with consent of teacher. *3 + 3 h. c.*

Ancient Languages and Literature

See *Greek, Hebrew,* and *Latin.* For ancient literature in translation, see Humanities 201, 401, and 402, and Philosophy and Religion 230P, 303P, 309G, and 330G.

Combined Major in Classical Studies

A combined major in classical studies consists of 45 semester hours in courses chosen from the following: Greek 101-102, 201, 202, 301, and 302; History 105 and 352; Humanities 201, 401, and 402; Latin 101-102, 201, 202, 301, 302, 304, 305, 401, 402, 403, 404, and 405; and Philosophy and Religion 301G and 309G. The student should consult the Director of the Division of Language and Literature before undertaking this major.

Anthropology

See *Sociology.*

Art

Associate Professors Naberezny (chairman) and Ives; Assistant Professors Lepore and Mills; Instructor Lucas; Mr. Adler, Mr. Bertolini, Miss Brncic, Mr. Falgiani, Mr. Leepard, Mrs. Newman, Mr. Pressly, and Mr. Vaccaro.

A suggested curriculum for the degree of Bachelor of Arts with a major in art appears below, after the course descriptions. For the degree of Bachelor of Science in Business Administration with a major in commercial art, a required curriculum will be found in the School of Business Administration section; for the curriculum required for the degree of Bachelor of Science in Education with a major in art education, see the School of Education section.

Lower Division Courses

110, 111. *Color and Design I.* Experimentation with all kinds of materials and media. Realizing the effects of color with color, color into color, and light on color; creating collages and mobiles to realize space, and experiments with light on these; shadow forms; use of various textures in collages and in two-dimensional design; relation of light and dark; getting forceful and expressive shapes. Art 110 is prerequisite to 111. *3 + 3 h. c.*

113, 114. *History and Appreciation of Art: General.* Lectures on what constitutes art; the plastic means rather than the subject matter, and the relationship of parts; attention to developments, influences, and experiments. Study of reproductions of museum collections and of surveys made. *3 + 3 h. c.*

201, 202. *Drawing and Painting.* Experience in drawing from the figure. Attention to the power of line, the relation of shapes and colors, and their organization in established space. Reference to important historical styles influencing contemporary work. *3 + 3 h. c.*

203, 204. *Drawing.* Space division, the plastic means, line, plane, volume; light and dark, color and texture, and their relation to form and pattern. Use of different media—pencil, charcoal, water color, opaque water color, pastel, and collage—for still-life figure composition, life, and abstract forms, to develop a sense of plastic organization. Art 203 is prerequisite to 204. 3 + 3 *h. c.*

211, 212. *Print Making.* Experimenting with all kinds of printing media. Block printing, silk screen techniques, and the various metals used for printing. Study in space division, plastic means, and their relation to form and pattern. Prereq.: Art 110. Art 211 is prerequisite to 212. 3 + 3 *h. c.*

213. *Survey of Ancient Art.* A survey of the art of the ancient Near East and especially of Greece and Rome, with attention to the civilizations form and pattern. Prereq.: Art 110. Art 211 is prerequisite to 212. 3 + 3 *h. c.*

223, 224. *Advertising Art I.* Practice with different styles of lettering; application of principles of Art 110, 111 to layouts, reproduction of silk screen, linoleum block, monoprint, and dry point; study of current tendencies. Prereq.: Art 110. Art 223 is prerequisite to 224. *3 + 3 h c.*

Upper Division Courses

301, 302. *Technical Problems in Art.* Advanced technical problems in art for the art major. The student may elect to specialize in one of the following fields: fashion illustration, story illustration, textile design and production, furniture design, packaging, product design, exhibition display, or printmaking. He may continue in the same field the second semester, or elect a new one. Prereq.: Art 110-111. Art 301 is prerequisite to 302. *3 + 3 h. c.*

303, 304. *Painting I.* Practice in oil painting. The student is encouraged to see significantly rather than imitatively, and to develop an explorative interest in techniques. Attention to the relation of shapes and volumes in the figure and in groups of figures, to achieve good organization. Prereq.: Art 203, 204. Art 303 is prerequisite to 304. *3 or 4 + 3 or 4 h. c.*

305. *History and Appreciation of Art: Italian Renaissance.* Review of formalism, mysticism, and classicism; the new humanism; detailed study of the great artists and their connection with the history and philosophy of the times. *3 h. c.*

306. *History and Appreciation of Art: Modern.* Viewing of art works through slides, prints, and originals to clarify ideas of the nature of creative art; classification according to trends and influences from earlier art expressions. *3 h. c.*

307. *History and Appreciation of Art: American.* Illustrated lectures on the art forms of America from the earliest periods to the present day trends in painting, sculpture, and architecture. Designed to promote the cultural growth of the non-art student as well as the art student. No previous training in art is required. *3 h. c.*

309, 310. *History and Appreciation of Art and Music: General.* Designed to promote the cultural growth of the non-art and non-music student by helping him to develop an intelligent appreciation of art and music. Illustrated lectures on art and musical forms, comparisons of compositional styles and discussions of the developments, influences, and, experi-

ments of the important periods to date. Open to all students of the University. No prior training in art or music required. Listed also as Music History and Literature 309, 310. *3 + 3 h. c.*

316, 317. *Interior Decorating.* Application of experiences in Art 110, 111 to rooms and furnishings; development of feeling of space in interiors. Study of period furnishings, new designs, and textiles; building of models to carry out decoration plans; new trends. Visits to houses with special arrangements or styles of furnishings. Prereq.: Art 110, 111. Art 316 is prerequisite to 317. *3 + 3 h. c.*

319, 320. *Jewelry and Metal Work I.* Designing and shaping of copper ware; punching, etching, engraving. Jewelry design and fabrication. The properties and limitations of metals, learned through experience. Prereq.: Art 110. Art 319 is prerequisite to 320. *3 + 3 h. c.*

325, 326. *Pottery and Modeling.* Pottery-shaping: coiling, hand-building, pinching; decoration and glazing; fashioning figures and heads to arrive at sculptural form; mold-making and casting; bas-relief. Prereq.: Art 110. Art 325 is prerequisite to 326. *3 + 3 h. c.*

327, 328. *Advertising Art II.* Modern layout practice and technique with various media, including silk screen, air brush, collage; bookplates, trademarks, containers, illustration, booklets, menus; rapid and fine lettering; design as a basic element. Prereq.: Art 223, 224. Art 327 is prerequisite to 328. *3 + 3 h. c.*

329, 330. *Sculpture.* A special discipline, correlated with some of the "form in space" problems dealt with in earlier design classes but here concentrated through a more specific medium. Each student has ample opportunity to model in clay or carve directly in wood or soft stone. Prereq.: Art 110, 111. *3 + 3 h. c.*

350. *Architectural Drawing.* Proper use of instruments, correct drafting-room practice; conventional representation, lettering, free-hand sketching, geometric construction, orthographic and oblique projection, sectioning, isometric drawing; house plans. For the prospective art teacher. Not accepted for credit toward the Bachelor of Engineering degree. *3 h. c.*

403, 404. *Painting II.* Continuation of Art 303, 304. Art 403 is prerequisite to 404. *3 + 3 h. c.*

405. *History and Appreciation of Art: Oriental.* The art of India, China, and Japan from the earliest times to the present, and its relation to the philosophies and religions of those countries; comparison of the characteristics of the great periods. *3 h. c.*

410, 411. *Advanced Modeling.* Application of the principles of Art 110, 111 to clay and plaster; abstract volumes and their relations; modern tendencies in pottery forms and figure work. Perreq.: Art 326. Art 410 is prerequisite to 411. *3 + 3 h. c.*

419. *Jewelry and Metal Work II.* Advanced work in processes; new problems in brass, silver, copper, and gold. Prereq.: Art 320. *3 h. c.*

Suggested Curriculum for the Degree of Bachelor of Arts with a Major in Art

First Year	Hrs.
Art 110, 111 Color and Design I	6
Art 113, 114 History and Appreciation of Art: General	6
Comm. 105-106 Basic Course I-II	6
*Foreign language (or electives)	6
Soc. Sci. 101 and 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Ed.	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Art 203, 204 Drawing and Painting	6
Art elective (200 or above)	3
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
*Foreign language (or electives)	6
Hist. 201, 202 The United States	6
H. E. & P. E. activity courses	1
Psych. 201 General Psychology	3
	31

*Foreign language and science requirements are explained under **Requirements for the Degree** and **Proficiency in a Foreign Language**, at the beginning of this section.

Third Year	Hrs.
Art 301, 302 Technical Problems	6
Art 303, 304 Figure Drawing and Painting I	8-6
Art elective (200 or above)	3
History elective	3
English literature elective	3
Philosophy and Religion elective, or Humanities 401 or 402	3
*Science	8
	34-32

Fourth Year	Hrs.
Art 305 History and Appreciation of Art: Italian Renaissance	3
Art 306 History and Appreciation of Art: Modern	3
*Mathematics or science	3
Sp. and Dram. 219, 220 Play Production I	6
Electives (Upper Division)	11-13
	26-28

*Foreign language and science requirements are explained under **Requirements for the Degree** and **Proficiency in a Foreign Language**, at the beginning of this section.

Astronomy

Instructor Young (supervisor); Mr. Lewis.

Lower Division Courses

103. *Descriptive Astronomy.* A descriptive and non-mathematical study of the solar system and stars. A comparison of present theories of the universe. Observations with the telescope and field glasses; weekly laboratory exercises. *3 h. c.*

104. *General Astronomy.* A more mathematical treatment than Astronomy 103. The celestial sphere, astronomical instruments, the sun and planets, stars and stellar systems. Prereq.: two years of high school mathematics. *3 h. c.*

105. *Laboratory Astronomy.* A laboratory course intended to introduce the student to the techniques of observational astronomy. Prerequisite or concurrent: Astronomy 103 or 104. *1 h. c.*

200. *Geodetic Astronomy.* The elements of general, spherical, and geodetic astronomy, with practical applications; the theory of the determination of time, latitude, longitude, and azimuth. Prereq.: Astronomy 104. *3 h. c.*

201. *History of Astronomy.* A history of astronomy from the dawn of science to the present. The contemporary state of knowledge of the universe. The organization and evolution of astronomy as related to other sciences. Man's place in our sidereal system. Prereq.: Astronomy 103. *3 h. c.*

Upper Division Courses

300. *Variable Stars.* A discussion of stellar dimensions and distances, stellar spectra, nuclear reactions, and stellar evolution as an aid to the understanding of variable stars. Types of variable stars. Possible causes of variability. Prereq.: Mathematics 103 and 209, or 107 and 252, Physics 202, and Astronomy 104. *3 h. c.*

301. *Stellar Astronomy.* The motions and distribution of the stars. Interstellar matter. The Milky Way and other galaxies. Cosmology. The origin of the chemical elements. Prereq.: Mathematics 103 and 209, or 107 and 252, Physics 202, and Astronomy 104. *3 h. c.*

Bible

See *Philosophy and Religion*; also *Humanities.*

Biology

Professor C. Evans (chairman); Associate Professors Webster and Worley; Assistant Professors Hirabayashi, Saksena, Sturm, and Van Zandt; Instructors Costa, D'Onofrio and Rosenfield; Mr. J. H. Baker, Mrs. Cannon, Mrs. Mather, Mr. Urista.

Biology courses are offered to meet the needs of the following students: those who want a general knowledge of the biological field; those who intend to do graduate or research work in any of the special branches of

biology; those who plan to teach the biological sciences; and those who plan to enter professional fields such as medicine, nursing, pharmacy, forestry, horticulture, and others requiring a knowledge of biology.

Biology majors must take Biology 103, 223, 224, 227, 228, 303, 304, 321, and electives from Upper Division courses. Chemistry 308, Biochemistry, and Chemistry 417, Macromolecules, may be counted toward a biology major.

Biology majors who want a departmental recommendation for advanced academic studies must have included in their curriculum at least one year of college mathematics, one year of college physics, and one year of organic chemistry.

Students who want to qualify for a teaching field in biology must include Biology 103, 223, 224, 227, and 228.

Pre-medical students and co-operative nursing students should consult the special curriculums listed under *Pre-Medical Study and Allied Fields*, further on in this section.

TECHNICAL SERVICE COURSES WHICH DO NOT APPLY TOWARD A MAJOR OR A TEACHING FIELD IN BIOLOGY:

100 (open to health education and physical education majors and home economics majors only)
151, 152 (open to cadet nurses only)
160 (open to cadet nurses and home economics majors only)
201, 202 (open to health education and physical education majors and home economic majors only)
383 (open to registered nurses only)

COURSES FOR MAJORS IN BIOLOGY:

Lower Division Courses

103	118	127	227-228
116	126	223-224	250

Upper Division Courses

301	309	321	403, 404
302	310	331	405
303, 304	313	332	406
308	319	341	408
	412		

Lower Division Courses

100. *Fundamentals of Animal Life.* A comprehensive study of the vertebrate organisms and a survey of the invertebrate organisms. Six laboratory-discussion hours a week. Not applicable toward a major or a teaching field in biology. Open to health education and physical education majors, and home economics majors only. Fee: $10.00 *3 h. c.*

103. *General Biology.* A survey of biological principles, covering the morphology and physiology of chromosomes, cells, and tissues as manifested in animals, bacteria, and green plants. Three two-hour laboratory-discussion periods a week. Fee: $10.00. *3 h. c.*

116. *Woody Plants, Winter.* Classification of woody plants in winter condition. Fifty-four contact hours. Latter half of fall semester or first half of spring semester. *1 h. c.*

118. *Woody Plants, Summer.* Classification of woody plants while in leaf. Fifty-four contact hours. Latter half of spring semester, or summer session. *1 h. c.*

126. *Fresh-water Fishes.* An introduction to the classification, ecology, and conservation of local fishes. Field and laboratory work. 108 contact hours. Summer session only. *2 h. c.*

127. *Local Insects.* An introduction to the classification, ecology, and economic importance of local insects. Field and laboratory work, 108 contact hours. Summer session only. *2 h. c.*

151-152. *Functional Anatomy of the Human.* Dissection of a mammal, to illustrate the structures of the human body. Consideration of the physiology of the major systems of the human. One hour of lecture, two hours of laboratory, and two hours of discussion-demonstration a week. Not applicable toward a major or a teaching field in biology. Open to cadet nurses only. Fee: $10.00 each semester. *3 + 3 h. c.*

160. *Microbiology.* An introduction to the study of bacteria, and a consideration of members of the following that are pathogenic to the human: fungi and yeasts, rickettsia, spirochetes, protozoa, and viruses. Two hours of lecture and two hours of laboratory-testing a week. Not applicable toward a major or a teaching field in biology Open to cadet nurses and home economics majors only. Prereq.: Chemistry 100, or 103 and 104. Fee: $10.00. *3 h. c.*

201, 202. *Anatomy and Physiology I, II.* A comprehensive study of the structure and functions of higher organisms with special emphasis on man. Not applicable toward a major or a teaching field in biology. Open to health education and physical education majors and home economics majors only. *3 +3 h. c.*

223-224. *General Botany.* A comprehensive survey of the plant kingdom: morphology, reproduction, life cycles, phylogeny, and certain aspects of physiology. Six hours of discussion-laboratory work a week. Prereq.: C or better in Biology 103. Fee: $10.00 each semester. *3 + 3 h. c.*

227, 228. *General Zoology.* A comprehensive study of the morphology and taxonomy of representative invertebrates and vertebrates. Six hours a week. Prereq.: C or better in Biology 103. Fee: $10.00 each semester. *3 + 3 h. c.*

250. *Human Physiology.* Functions of the human body. Lectures, demonstrations, and experiments by the students. Six laboratory-discussion hours a week. Prereq.: C or better in Biology 228. Fee: $10.00. *3 h. c.*

Upper Division Courses

301. *Bacteriology.* The fundamentals of bacteria, and methods of handling and growing micro-organisms. Two one-hour lectures and two three-hour laboratory periods a week. Prereq.: 12 semester hours of credit in biology, a knowledge of the principles of organic chemistry, and consent of teacher. Fee: $10.00. *5 h. c.*

302. *Introduction to Ecology.* A study of the relationships of plants and animals to their environments. Six contact hours of lectures, laboratory exercises, and field trips a week. Prereq.: Biology 223, 224, 227, and 228. Offered during spring semesters of odd-numbered years. Fee: $10.00. *3 h. c.*

303, 304. *Biological Seminar.* The study of current and historical literature in biology and closely related areas. Each semester some major topic constitutes the theme of the course. The course involves written and oral reports as well as round-table discussions. The entire staff will participate in these discussions. One hour of class and three hours of outside assignments a week. Prereq.: twelve hours of biology courses and consent of staff. *1 + 1 h. c.*

308. *Vertebrate Embryology.* Germ cells, maturation types of cleavage and gastrulation, and the development of the frog, chick, and mammal. Living material is used in demonstration. Two one-hour lectures and two two-hour laboratory periods a week. Prereq.: C or better in Biology 228. Fee: $10.00. *4 h. c.*

309. *Vertebrate Anatomy I.* A comparative study of the anatomical structures of a series of vertebrate animals exclusive of the mammals. Two one-hour lectures and one three-hour laboratory period a week. Prereq.: C or better in Biology 228. Fee: $10.00. *3 h. c.*

310. *Vertebrate Anatomy II.* A study of the anatomy of mammals, based on the cat, with reference to Biology 309. Three two-hour laboratory-discussion periods a week. Prereq.: consent of teacher. Fee: $10.00. *3 h. c.*

313. *Vertebrate Histology.* The microscopic anatomy of mammalian tissue, including preparation of tissues for study. Two three-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 228. Fee: $10.00. *3 h. c.*

319. *Plant Taxonomy.* Identification of local vascular plants: experience in the use of both natural and artificial keys, in the laboratory and in the field; and discussions concerning current theories in systematic botany. Two hours of lecture and four hours of laboratory a week. Prereq.: C or better in Biology 224. Fee: $10.00. *3 h. c.*

321. *Genetics.* Principles of inheritance, organic evolution, and eugenics. Three one-hour lectures a week. Prereq.: C or better in Biology 224 or 228. *3 h. c.*

331. *Phytomorphology.* Comparative anatomy and histology of the vascular plants. Two one-hour lectures and two two-hour laboratory periods a week. Prereq.: C or better in Biology 224. Fee: $10.00. Offered in alternate years. *4 h. c.*

332. *Plant Physiology.* The chemistry, physics, and functions of green plants. Two one-hour lectures and two three-hour laboratory periods a week. Prereq.: C or better in Biology 224, and a course in organic chemistry. Fee: $10.00. Offered in alternate years. *4 h. c.*

341. *Introduction to Parasitology.* An introduction to the study of animal parasites with emphasis on morphology, life cycles, diagnosis and control measures. Living material used in demonstration; opportunity for student participation in laboratory maintenance of parasites. Three two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 228. Fee: $10.00. *3 h. c.*

383. *Ward Management and Teaching.* The fundamental principles in the management of the head nurse unit and the duties of the head nurse as teacher; discussions of the various problems that arise in the head nurse unit. Not applicable toward a major or a teaching field in biology. Open to registered nurses only. *3 h. c.*

403, 404. *Biological Seminar.* A continuation of Biology 304. Prereq.: Biology 304. *1 + 1 h. c.*

405. *General Physiology.* An introduction to the basic processes common to all organisms. Five one-hour lecture-demonstration periods weekly. Prereq.: twelve hours of biology and organic chemistry. *4 h. c.*

406. *Limnology.* The study of microscopic fresh-water organisms and their physical environment. Two four-hour laboratory-discussion periods a week. Prereq.: junior standing and consent of teacher. Fee: $10.00. Offered in alternate years. *4 h. c.*

408. *Biological Techniques.* The techniques of making microscopical preparations. Designed primarily for medical technology majors, and for biology majors who intend to go into graduate study. Two three-hour laboratory periods a week. Prereq.: Biology 313 and one year of chemistry. Fee: $10.00. *2 h. c.*

412. *Problems in Biology.* Special biological problems for which materials and equipment are available and for which the student is qualified. Available at all times. Prereq.: recommendation of staff. Fee: $10.00. *3 h. c.*

Botany

See *Biology*.

Chemistry

Professors Scudder (chairman), Bridgham, and Cohen; Associate Professors Graf and Spiegel; Assistant Professors Foldvary, Mahadeviah, Von Ostwalden, and Yingst; Dr. Goudsmit and Dr. Seidel.

A student working for the Bachelor of Science degree with a major in chemistry must take Chemistry 123, 205, 221, 222, 305, 306, 326, 401-402, and 404; and six semester hours from Chemistry 413, 421, 425, 437, 438, and 450, of which four semester hours must be in lecture courses and two semester hours must be in laboratory courses. Also required are two years of mathematics, including calculus; one year of physics; and a reading knowledge of scientific German.

The student may take the degree of Bachelor of Arts with a major in chemistry, but the course leading to the degree of Bachelor of Science prepares him better for graduate study and for the more desirable industrial positions.

Following the descriptions of courses, a curriculum is suggested for the degree of Bachelor of Science with a major in chemistry.

Lower Division Courses

100. *Introduction to Chemistry.* A presentation of the principles and laws of chemistry and their application. The chemistry and uses of fats, carbohydrates, proteins, vitamins, and hormones are considered. Two hours of lecture, one hour of recitation and quiz, and two hours of laboratory a week. Fee: $10.00. *4 h. c.*

103, 104. *Everyday Chemistry.* For home economics students and those who are interested in chemistry for its cultural value. Emphasis on the chemistry of things with which we have daily contact, with the second semester emphasizing organic chemistry. Only the simpler mathematical phases are involved. Three lectures and recitations and one two-hour laboratory period a week. Not open to chemistry, physics, or engineering majors. Chemistry 103 is prerequisite to 104. Fee: $10.00 each semester. *4 + 4 h. c.*

103S, 104S. *Everyday Chemistry.* The same as Chemistry 103, 104, except that there is no laboratory work. *3 + 3 h. c.*

105, 106. *Fundamentals of Chemistry.* An introduction to the principles and methods of chemistry, for education and business administration majors and for liberal arts students. Not accepted for credit towards a major in chemistry or engineering. Three lecture and recitation periods and one three-hour laboratory period a week. Prereq.: one year of high school algebra. Chemistry 105 is prerequisite to 106. Fee: $10.00 each semester. *4 + 4 h. c.*

120. *Chemical Science.* Identical with Natural Science 120. *3 h. c.*

122. *General Chemistry I.* An introduction to the fundamental principles of chemistry, stoichiometry, chemical symbolism, elements of modern atomic theory and bonding, periodicity, description of representative elements and compounds. Three hours of lectures and recitations and four hours of laboratory a week, including one discussion period. Prereq.: one year of high school algebra and geometry. Fee: $10.00. *4 h.c.*

123. *General Chemistry II.* Synopsis of fundamental principles of chemistry, theories of the gaseous, liquid, and solid states, electronic structure

of atoms, chemical bonding, solutions, electrochemistry, acids and bases, introduction to chemical thermodynamics, chemical kinetics and equilibrium, correlations of structure and properties. Three hours of lectures and recitations and four hours of laboratory a week, including one discussion period. Prereq.: Chemistry 122, or equivalent; prerequisite or concurrent: Mathematics 100 or 151. Fee: $10.00. *4 h. c.*

124. *General Chemistry III.* Rigorous treatment of the theory of solutions and ionic equilibrium, complex ions, descriptive inorganic chemistry, theory and practice of qualitative analysis. Three hours of lectures and recitations and four hours of laboratory a week, including one discussion period. Prereq.: Chemistry 123, or equivalent. Fee: $10.00. *4 h. c.*

200. *Philosophy of Science.* An introduction to the understanding of scientific thinking, as exemplified in chemistry and physics. The development of scientific ideas. The methods of science. The truth value of scientific statements. The impact of science on the modern world. Prereq.: one year of high school algebra and one year of high school chemistry or physics, or enrollment in second semester college chemistry or physics. *3 h. c.*

205. *Qualitative Analysis.* This course is an extension of the study of the principles of chemical equilibrium. Their application to the analytical procedures in the laboratory is strongly stressed. One hour of lecture and two three-hour periods of laboratory a week. Prereq.: Chemistry 124, or equivalent. Fee: $10.00. *3 h. c.*

210. *Food Biochemistry.* A study of the chemical nature of foods, their formation in organisms, and their modification during human metabolism. Laboratory methods for the detection and study of constituents. Primarily for students in home economics and dietetics. Three hours of lecture and six hours of laboratory a week. Prereq.: Chemistry 205. Fee: $10.00. *5 h. c.*

221, 222. *Organic Chemistry.* A systematic study of organic compounds, reactions, and theories, with laboratory work in typical preparations and tests. Three lectures and three hours of laboratory a week. Chemistry 221 is offered every fall semester and first half of summer session. Chemistry 222 every spring semester and second half of summer session. Prerequisite or concurrent: Chemistry 205. Chemistry 221 is prerequisite to 222. Fee: $10.00 each semester. *4 + 4 h. c.*

Upper Division Courses

305. *Quantitative Analysis.* The applications of chemical equilibrium in the measurement of the amount of ions present in inorganic substances. The influence of pH and other factors are studied. Both solids and solutions are analyzed by standard gravimetric or titrimetric procedures. Two hours of lecture and six hours of laboratory a week. Prereq.: Chemistry 205. Fee: $10.00. *4 h. c.*

306. *Chemical Literature and Technical Writing.* Examination of standard reference works and periodicals, with written reports following technical writing procedures. Prerequisite or concurrent: Chemistry 221 and German 215. *2 h. c.*

308. *Biochemistry.* The chemistry of living organisms. The study involves work in both plant and animal life in a broad sense; use of many modern biochemical methods; composition of cell structural parts in relation to their functions; biochemical substances; the unusual reactions which proceed in living organisms. Two hours of lecture and six hours of laboratory work a week. Prereq.: Chemistry 221 and 222 and at least one course in biology. Prerequisite or concurrent: Chemistry 305. Fee: $10.00. *4 h. c.*

309. *Plastics.* A course in the fundamentals of chemistry pertaining to plastics. Two hours of lecture and recitation a week. Prereq.: Chemistry 221. *2 h. c.*

323. *Synthetic Organic Chemistry.* An extension of the practical and theoretical study of organic chemical reactions by introducing more advanced preparations and laboratory methods together with their interpretation. One lecture and three hours of laboratory a week. Prereq.: Chemistry 222 and German 215. Fee: $10.00 *2 h. c.*

326. *Organic Analysis.* Qualitative Analysis. One lecture or recitation and six hours of laboratory a week. Prereq.: Chemistry 222 and 305 and German 215. Fee: $10.00. *3 h. c.*

401-402. *Physical Chemistry.* The fundamentals of physical chemistry including laboratory work. Three lectures or recitations and one three-hour laboratory period a week. Prereq.: Physics 201-202, 201L-202L, Mathematics 209-210, and Chemistry 305. Fee: $10.00 each semester. *4 + 4 h. c.*

404. *Quantitative Analysis (Instrumental).* A study of the theoretical foundations of instrumental procedures and the application and use of instruments in analytical work. Two hours of lecture or recitation and six hours of laboratory a week. Prereq.: Chemistry 305. Fee: $10.00. *4 h. c.*

413. *Thermodynamics.* Classical and axiomatic presentation of the laws of thermodynamic functions and their applications to ideal systems. Listed also as Physics 413. Prereq.: Mathematics 210 or 252, Physics 202, and three years of college chemistry or the equivalent. *3 h. c.*

415. *Basic Principles of Biochemistry.* The structure of living forms, selected physico-chemical aspects of cellular processes. Energetics of biological function, organic constituents of cells, theories of enzyme action, methods in the study of intermediary metabolism, biochemical approach to genetics, problems of biochemical evolution. Prereq.: Chemistry 222 and 305. Chemistry 402, 404, and 421 are strongly recommended. *3 h. c.*

417. *Macromolecules.* A study of the physical and chemical properties of natural macromolecules: carbohydrates, proteins, nucleic acids, etc. Prereq.: Physics 102 and Chemistry 221 and 222. *3 h. c.*

421. *Advanced Organic Chemistry.* An introduction to advanced study in organic reactions and theories. Two lectures a week. Prereq.: three years of college chemistry, including Chemistry 222. *2 h. c.*

425. *Inorganic Chemistry.* A study of atomic and molecular structure, periodic classification, valency, complexions and coordination compounds, oxidation-reduction, acids and bases, and the properties of the elements in relation to their periodicity; the preparation and analysis for purity of various representative inorganic compounds. Two hours of lecture and recitation and three hours of laboratory a week. Prereq.: one year of college physics and three years of college chemistry. *3 h. c.*

427. *Nuclear Chemistry and Its Application.* Nuclear structure and reactions, types of radioactive decay, preparation of tracers, radiation detection, measurements and techniques in handling radioactive materials. Prereq.: Chemistry 222; Mathematics 152, or equivalent; and one year of college physics. *3 h. c.*

436. *Quantum Chemistry.* The quantum chemistry of atomic and molecular structure. Prereq.: Chemistry 222 and 402. *3 h. c.*

450. *Senior Research.* When possible each student works on a different phase of a group problem. The work is then coordinated and discussed by the students as a group. May be taken more than once. Prereq.: three years of college chemistry. Fee: $10.00. *2 or 3 h. c. each semester*

452. *Chemistry Seminar.* Reports and discussions of research studies and problems. Prereq.: Chemistry 450. *2 h. c.*

Curriculum

Suggested Curriculum Leading to the Degree of Bachelor of Science with a Major in Chemistry

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
Soc. Sci. 101, 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Chem. 205 Qualitative Analysis	3
Chem. 221, 222 Organic Chemistry	8
*German 101-102 Elementary German	6
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Electives	4
H. E. & P. E. activity courses	1
	32

Summer

Hist. 201, 202 The United States	6
Communication 107 Basic Course III	3
	9

Third Year	Hrs.
Chem. 305 Quantitative Analysis	4
Chem. 306 Chemical Literature	2
Chem. 326 Organic Analysis	3
*German 215-216 Chemical German	6
Physics 201-202 General Physics	8
Physics 201L-202L General Physics Laboratory	2
Electives (Upper Division)	7
	32

Fourth Year	Hrs.
Chem. 401-402 Physical Chemistry	8
Chem. 404 Quantitative Analysis (Instrumental)	4
Advanced Chemistry The work in advanced chemistry must include the equivalent of two lectures and recitations a week for two semesters and the equivalent of three hour of laboratory a week for two semesters. To satisfy this requirement, courses must be chosen from Chemistry 413, 415, 421, 425, 427, 436, and 450	6
Philosophy and Religion elective or Humanities 401 or 402	3
Upper Division electives	9
	30

*Foreign language requirements are explained under **Requirements for the Degrees and Proficiency in a Foreign Language**, at the beginning of this section.

For the degree of Bachelor of Science with a major in metallurgy, a mimeographed curriculum is available in the Chemistry Department office.

Classical Languages and Literature

See *Greek* and *Latin* separately. For a combined major in classical studies, see *Ancient Languages and Literature*. For classical literature in translation, see Humanities 201, 401, and 402, and Philosophy and Religion 309G and 330G.

Communication

Professor Dykema (supervisor); Division of Language and Literature staff

Communication 105-106-107 is the course ordinarily taken to meet the general requirement in communication. Credits in communication may be counted toward a major in English only on the approval of the Chairman of the Department of English.

Day students take Orientation 100 in conjunction with Communication 105.

Non-credit Courses

10. *English for Foreign Students.* An intensive course in speaking, comprehending, reading, and writing English as a second language. The course includes both class instruction and drill. Designed for foreigners who have an elementary knowledge of English, but one which is inadequate for the needs of the college classroom. The class meets daily for a total of six hours each week. A student may repeat the course as many times as necessary to achieve a satisfactory rating. The course carries no credit, but upon recommendation of the teacher, a student who receives a grade of Satisfactory may be permitted to enroll in Communication 106 without having taken Communication 105. Listed also as English 10. Ordinarily offered in fall and spring semesters. Evaluated as *six hours for load and billing purposes.* *No Credit*

50. *Improvement of Adult Reading Ability.* The techniques involved in the improvement of reading skill for adults. Of interest to adults who wish to improve their own reading ability. Meets two hours a week. Evaluated as *two hours for load and billing purposes.* *No Credit*

Lower Division Courses

105-106-107. *Basic Course I-II-III.* This course attempts to improve the effectiveness of the student's speech and writing, with emphasis on logical organization and accurate expression, and to make him more aware of the nature, function, and significance of the various media of communication. A grade of C or better in Communication 107 is required for graduation; no D grade is given in Communication 107. Listed also as English 105-106-107. (For certification, graduation, and transfer purposes, this course may be interpreted as six hours of composition and three hours of speech.) *3 + 3 + 3 h. c.*

Dramatics

See *Speech and Dramatics.*

Earth Science

Associate Professor Klasovsky (supervisor)

The combined major in earth science is designed to meet the needs of students who expect to enter graduate work in geology or geography. The major also fulfills the requirements for the teaching fields in geography and earth science. Advisement is provided either by the Department of Geography or the Department of Geology.

Courses for the major include:

Chemistry 111-112 (or 109-110).

Geography 102, 119, 203, 204, 313, 314, and three semester hours of Upper Division geography courses.

Geology 101, 102, 201, 202, 303 and 304.

Mathematics 100 and 107, or 151.

The minor for students majoring in earth science is chosen in consultation with a department adviser and is dependent upon the student's area of interest. For example, students interested in graduate study in geology choose either chemistry or mathematics for the minor; students interested in other areas may require a different selection. Students who plan to do graduate work in geology are urged to take a summer field course

at another school. Arrangements should be made through the Department of Geology.

Suggested Curriculum for the Degree of Bachelor of Arts or Bachelor of Science with a Major in Earth Science

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
*Foreign Language (or elective)	6
Geog. 102 Principles of Geography	3
Geol. 101 Physical Geology	4
Math. 151 Introduction to Mathematical Analysis	5
H. & P. E. 109M or 109W Health Education	2
H. & P. E. activity courses	1
Orientation 100	1
	36

Second Year	Hrs.
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206 or 275 or Hum. 201	3
*Foreign language (or elective)	6
Geog. 119 Economic Geography	3
Geog. 204 Regional Climatology	3
Geol. 102 Historical Geology	4
Geol. 201 Economic Geology	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences	6
H. & P. E. activity courses	1
	32

Third Year	Hrs.
Geog. 203 Conservation of Natural Resources	3
Geog. 314 Geography of Anglo-America	3
Geol. 202 Geomorphology	4
Hist. 201 & 202 The United States	6
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	29-34

Fourth Year	Hrs.
Geog. 313 Geography of Europe	3
Geography elective (Upper Division)	3
Geol. 303 Physiography of the United States	4
Philosophy and Religion elective or Humanities 401 or 402	3
Minor courses (or electives)	14-20
	27-33

Suggested Electives

Astronomy 104, 200
Economics 202, 203, 305, 319, 402
History 302, 308, 364, 368
Physics 101-102 and 101L-102L
Political Science 304, 305, 403
Sociology 325, 326, 331

*Foreign language requirements are explained under **Requirements for the Degrees** and **Proficiency in a Foreign Language**, at the beginning of this section.

Economics

Professor Smith (chairman); Associate Professors Kermani and Mackall; Assistant Professors Hahn, Nelson, Niemi, Potemra, and Powers; Instructors Gutknecht and Smythe; Mr. Callahan, Mr. Cushwa, Mr. Desing, Mr. DiRusso, Mr. Hansen, Mr. Hunter, Mr. Laumann, and Mr. Steiskal.

A major in economics consists of 30 semester hours. Courses in other departments for which credit may be given toward the major in economics are History 301, History 303, History 374, History 375, Business Organization 221, and Merchandising 224. The major is designed to prepare students for research and statistical work in business and government service; and to provide a background for careers in business and government and for graduate study leading to careers in law, journalism, government and international affairs, high school and college teaching, industrial relations, and business economics.

Lower Division Courses

202, 203. *Principles of Economics.* A survey of the basic principles of economics with special reference to the free enterprise system. Economics 202 is prerequisite to 203. *Required of economics majors.* Staff. 3 + 3 *h. c.*

Upper Division Courses

303. *Financial Organization.* Intended to furnish a foundation for the more technical studies in the field of finance, and to describe the financial institutions with which most people come in contact, such as the commercial bank, the building and loan association, and the finance company. Prereq.: Economics 202. Niemi, DiRusso. 3 *h. c.*

304. *Public Finance.* The development and present status of public finance; federal, state, and local taxation; public credit; the budget; financial administration. Prereq.: Economics 202. Hahn, Hunter. 3 *h.c.*

305. *Economic and Social Statistics I.* Measurements and interpretation of economic and social data. Tabular and graphic presentations, averages, ratios and coefficients, dispersion, correlation, measurement of trends, and collection of statistical material. *Required of economic majors.* Prereq.: junior standing. Listed also as Sociology 305. Mackall, Hahn, Hansen. *3 h. c.*

306. *Intermediate Economic Analysis.* The output, price and factor proportion problems of firms in different market situations; some problems in industry behavior; and co-ordination of basic economic processes. Some attention is also given to the theory of distribution dealing with wages, rent, interest and pro'ts. Prereq.: Economics 203. Staff. 3 *h. c.*

308. *Economic and Social Statistics II.* This course is a continuation of Economics 305. The methods include probability theory as a basis for statistical inference, techniques for testing hypotheses, multiple and partial correlation, the uses of chi-square, analysis of variance and sampling survey methods. These methods are applied to the decision-making process. Prereq.: Economics 305. Mackall. 3 *h. c.*

319. *Economics of American Industry.* A study of American manufacturing: the evolution of major industries, and their technological and economic growth, maturity, current problems, and outlook for the future. Prereq.: junior standing. Staff. 3 *h. c.*

321. *International Trade and Finance.* Theory and practice of foreign trade and capital movements. Procedures of importing and exporting as affected by national protective measures. National and international measures to eliminate trade barriers. Prereq.: Economics 203 or consent of teacher. Kermani. 3 *h. c.*

401. *Labor Problems.* The history of the labor movement in England and in this country is outlined as a background for discussion of present issues. Smith. *3 h. c.*

402. *Comparative Economic Systems.* A comparative study of American capitalism, Russian communism, and British socialism, with a consideration of the theory of the corporate state. Sterenberg. Kermani. 3 *h. c.*

403. *Business and Government.* This course considers the rights of businessmen, the regulation of various businesses by our government, and the controls exercised over monopoly, credit, and prices. Prereq.: Economics 203, or consent of teacher. Kermani. 3 *h. c.*

404. *Personnel Management.* Identical with Business Organization 404. *3 h. c.*

405. *Business Cycles.* Study of the nature and causes of economic fluctuations; basic business cycle theories and their application in the practical business world; some basic methods and problems of economic forecasting. Prereq.: Economics 203. 3 *h. c.*

407, 408. *History of Economic Thought.* Readings in the history of economic thought. Prereq.: standing as junior or senior economics major. Staff. 3 + 3 *h. c.*

English

Professors W. Miner (chairman), Dykema, and T. Miner; Associate Professors Hankey, Howard, Ives, and Pfau; Assistant Professors Baker, T. Gay, Kelty, Pierce, and Schultz; Instructor McNeal; Mr. Freed and Mr. Tear.

English majors are expected to complete at least one course in American literature, 12 hours in English literature, English 351-352, and a course in advanced composition.

Credit in English will be given for Humanities 201, Mythology in Literature; Humanities 401, Older Classics I; Humanities 402, Older Classics II; Humanities 403, Early Modern Classics; and Humanities 404, Later Modern Classics.

Students who plan to teach high school English must complete courses 205 or 206, 351-352, 253 or 353 or 354, and two courses in English literature that include the study of poetry and prose, for a total of at least 24 hours in English.

Communication 105-106-107, or English 101-102 and Speech and Dramatics 115, is required of all freshmen. English 102 or Communication 107 is prerequisite to all other English courses. A 200-level English course is normally prerequisite to other courses in literature. Under special circumstances, however, the teacher may grant permission to enter Upper Division courses without the prerequisite.

Non-Credit Course

10. *English for Foreign Students.* Identical with Communication 10. *Evaluated as six hours for load and billing purposes.* *No Credit.*

Lower Division Courses

101-102. *English Composition.* A study of the elementary principles of composition, to teach the habits of clear and correct expression. Reading of models, class discussions, and writing of themes. *Does not count toward a major in English. Any exceptions must be approved by the Chairman of the Department of English.* (Not offered regularly.)
3 +3 *h. c.*

105-106-107. *Basic Course in Communication.* Identical with Communication 105-106-107. *Does not count toward a major in English. Any exceptions must be approved by the Chairman of the Department of English.*
3 + 3 + 3 *h. c.*

200. *Introduction to Literature.* A non-technical, non-historical course in which important contemporary and older works of literature are read and discussed critically for the purpose of increased delight and understanding. Prereq.: Communication 107 or its equivalent. *3 h. c.*

203, 204. *Survey of English Literature.* First half: from the beginnings through the eighteenth century. Second half: from the beginning of the nineteenth century to the present. Prereq.: Communication 107 or its equivalent.
3 + 3 h. c.

205, 206. *Survey of American Literature.* First half: Colonial times to 1860. Second half: Civil War to the present. Prereq.: Communication 107 or its equivalent. *3 + 3 h. c.*

251. *Modern American English.* A brief survey of the earlier development of the English language, followed by a more thorough study of contemporary American pronunciation and usage. Not for English majors who take English 351-352. Prereq.: Communication 107 or its equivalent.
3 h. c.

253. *Advanced Composition, First Course.* A course designed to strengthen proficiency in the techniques of writing expository prose, with emphasis on style, development of ideas, clarity of thought, and analysis of prose expression. This course is especially designed for those who plan to teach English in high school. Prereq.: B or A in Communication 107 or consent of teacher.
3 h. c.

275. *Introduction to Shakespeare.* A critical survey of Shakespeare's major comedies, chronicle plays, and tragedies. Prereq.: Communication 107 or its equivalent. *3 h. c.*

Upper Division Courses

351-352. *History of the English Language.* The development of the language from Old English to Modern English, with an intensive study of Modern English sounds, inflections, syntax, word meanings, and usage. Prereq.: Communication 107 or its equivalent. First half offered in fall semester; second in spring semester. *3 + 3 h. c.*

353, 354. *Advanced Composition, Second Course.* A course in writing for mature students, providing opportunity to develop creative ability. Prereq.: preparation satisfactory to the teacher. English 353 offered in fall semester, 354 in spring semester. *3 h. c.*

355. *News Writing and Reporting.* The organization and functions of a newspaper office, with special attention to reporting, writing the different types of news stories, and copy reading. Prereq.: junior or senior standing. *3 h. c.*

355L. *News Writing and Reporting Workshop.* Application through student publications of the principles of English 355. Six hours of workshop activity a week. Prereq.: consent of teacher. Prerequisite or concurrent: English 355. May be repeated once. *1 h.c.*

357. *Editing and Make-Up.* The preparation of the printed page, with emphasis on the principles and mechanics of copy reading, editing, make-up, head writing, typography, the use of illustrations, and page layout. Prereq.: English 355. *3 h. c.*

357L. *Editing and Make-Up Workshop.* Application of the principles of English 357 through student publications. Six hours of workshop activity a week. Prereq.: consent of teacher. Prerequisite or concurrent: English 357. May be repeated once. *1 h. c.*

A 200-LEVEL ENGLISH COURSE, OR THE CONSENT OF THE TEACHER, IS PREREQUISITE TO ANY OF THE FOLLOWING COURSES.

370. *Major American Authors.* Intensive reading of several American writers. Writers considered vary but are announced each time the course is offered. For example, the approach might be through transcendentalism, the democratic traditions, realism, naturalism. *3 h. c.*

379. *The English Novel I.* The history and development of the novel in England to 1832, with particular emphasis on eighteenth century novelists, plus Austen and Scott. *3 h. c.*

380. *The English Novel II.* The novel in England from 1832 to 1920. *3 h. c.*

382. *The American Novel.* The history and development of the novel in the United States during the nineteenth and twentieth centuries. *3 h. c.*

383. *The Modern Novel.* A study of some classic European and English novels of the nineteenth and twentieth centuries, with particular attention to the ideas in them as reflections of some basic problems in modern society. *3 h. c.*

400. *Chaucer and His Period.* Reading of Chaucer's principal works, with a brief survey of his predecessors, contemporaries, and successors. *3 h. c.*

405. *English Drama.* English drama from the sixteenth century to the nineteenth, excluding Shakespeare. Emphasis is mainly on the works of Elizabethan and Restoration writers. *3 h. c.*

406. *Modern Drama.* English and Irish drama from the Ibsen revival to the present. Continental plays that have been influential are included in translation. *3 h. c.*

407. *American Drama.* The emphasis is mainly on the drama since 1915. 3 *h. c.*

412. *Shakespeare, Second Course.* An intensive study of the text and background of three or four of Shakespeare's major tragedies. Prereq.: English 275. 3 *h. c.*

450, 451. *Methods of Research.* A seminar for English majors who expect to do graduate work. Prereq.: senior standing with major in English. 1 + 1 *h. c.*

452. *Semantics.* An examination of the relationships between language structure and the meanings expressed by that structure, with attention to the relevant principles of lexicography and general linguistic analysis. Prereq.: English 251 or 352. 3 *h. c.*

461. *The Sixteenth Century.* The more important non-dramatic works in prose and verse from the early humanists to 1600, with particular attention to Spenser. 3 *h. c.*

471. *The Seventeenth Century.* Milton and the non-dramatic literature in 1700. 3 *h. c.*

481. *The Eighteenth Century.* The major writers of the period, excluding novels and plays. 3 *h. c.*

491, 492. *The Nineteenth Century.* The major writers of the period, excluding novels and plays. 3 + 3 *h. c.*

493. *Modern American and British Poetry.* An intensive study of poetry in English published since 1890. 3 *h. c.*

Foreign Languages and Literatures

See *French, German, Greek, Hebrew, Italian, Latin, Russian,* and *Spanish.* For literature in translation, see *Humanities.*

Forestry

See *Pre-Forestry.*

French

Associate Professor Richardson (chairman); Assistant Professors C. Dykema and ElSamman; Miss Klinger.

A major in French consists of 30 semester hours above the elementary level; or 24 hours above the elementary level, plus 6 hours in Latin, Italian, or Spanish. For a combined major in humanities, see Humanities.

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS FRENCH 202, OR FOUR YEARS OF HIGH SCHOOL FRENCH, OR THE CONSENT OF THE TEACHER. FRESHMEN WHO SATISFY THIS PREREQUISITE MAY ENTER UPPER DIVISION COURSES.

Lower Division Courses

101-102. *Elementary French.* Fundamental principles of grammar taught through oral and written exercises and the reading of simple prose. No credit is given for this course if the student has entrance credit for two years of high school French; but see *Proficiency in a Foreign Language,* at the beginning of this section. Fee: $5.00 each semester. 3 + 3 *h. c.*

201. *Intermediate French.* Grammar reviewed through oral and written exercises. Reading of modern prose. Prereq.: C or better in French 102 or in second-year high school French. Fee: $5.00. 3 *h. c.*

202. *Intermediate French.* A continuation of French 201, using texts of increasing difficulty. Prereq.: French 201 or three years of high school French, or consent of teacher. Fee: $5.00. *3 h. c.*

Upper Division Courses

309, 310. *Survey of French Literature.* First half: from the beginnings through the eighteenth century. Second half: from the nineteenth century to the present. Required for a major in French. Prereq.: French 202 or four years of high school French. *3 + 3 h. c.*

325. *Advanced French Grammar.* A review in depth of French grammar through analysis of the stylistic devices of literary works, and through exercises, translation, and original composition. *3 h. c.*

326. *French Civilization.* A summary study of the geography, history, and traditions of contemporary France with a view to facilitating the reading of modern books and periodicals. *3 h. c.*

327. *French Composition.* Skill in writing developed through translation and original composition. *3 h. c.*

329. *Conversational French.* Facility in oral expression developed through exercises on and discussions of assigned topics and through prepared and extemporaneous situational dialogs and plays. *3 h. c.*

331. *Applied French Phonetics.* Study of phonetics for application to individual pronunciation problems: intensive drill; conversation. Fee: $5.00. *3 h. c.*

351. *History of the French Language.* The evolution of Latin to Modern French from the standpoint of phonetics, morphology, syntax, and vocabulary. *3 h. c.*

401, 402. *French Literature of the Seventeenth Century.* First half: Rabelais, Montaigne, and the Baroque period. Second half: the age of Louis XIV. Prereq.: French 309, or consent of teacher. *3 + 3 h. c.*

403. *French Literature of the Eighteenth Century.* The major writers, literary forms, and movements. Prereq.: French 309, or consent of teacher. *3 h. c.*

405, 406. *French Literature of the Nineteenth Century.* First half: 1800-1857. Second half: 1857-1900. Prereq.: French 310, or consent of teacher. *3 + 3 h. c.*

407. *French Literature of the Twentieth Century.* The major writers, literary forms, and movements. Prereq.: French 310, or consent of teacher. *3 h. c.*

411, 412. *Comparative Grammar of the Romance Languages.* First part: the phonetics and morphology of the chief Romance dialects. Second part: syntax and semantic development. Listed also as Italian 411, 412 and Spanish 411, 412. *3 + 3 h. c.*

Geography

*Associate Professors *Klasovsky (chairman); Assistant Professor Manton; Instructors Matzye and Vechiarella; Miss Berch, Mr. Haylett, and Mr. W. Smith.*

Lower Division Courses

102. *Principles of Geography.* A study of causal relationships between life activities and their physical surroundings. *3 h. c.*

119. *Economic Geography.* An introduction to the study of the distribution and supply of raw materials of the earth; land and water utilization; and problems in population distribution. *3 h. c.*

200. *Introduction to World Culture Geography.* An introductory study of the elements of the cultural setting: their nature, distribution, land use, sequent occupance, and settlement patterns, and their significance in relation to each other and to the natural environment. Prereq.: Geography 102, Social Science 102, or consent of teacher. *3 h. c.*

203. *Our Natural Resources and their Conservation.* The public domain of the United States; its nature, use, disposal, and conservation. The soil; erosion; lands; land reclamation; forests; water supply, waterways, flood control; mineral and other resources; wildlife and fisheries. Prereq.: Geography 102. Listed also as Natural Science 203. *3 h. c.*

204. *Regional Climatology.* The general principles of climatology. The nature and elements of climate; factors governing climatic types and their distribution; influences on soils, landforms, plants, and man; simplified classification of climates; detailed treatment of the major types of continents. Prereq.: Geography 102 or equivalent. Offered in the fall semester. *3 h. c.*

225. *General Meteorology.* An introductory course dealing with cloud types, pressure, temperature, humidity, precipitations, atmospheric composition and circulation, types of stability, air mass analysis, and surface map analysis. Prereq.: sophomore standing. *3 h. c.*

Upper Division Courses

302. *Introduction to Political Geography.* A study of the geographic, political, and economic factors influencing the course of world politics. Basic emphasis is on human geography and the factors associated with the supply of raw materials, regional natural resources, and manufacturing; consideration of ethnic origins, minorities, and geopolitics; the concept of "living space" or "human territory"; social evolution and development of political territorial divisions; problems of language and communication; transportation and its relationship to social, economic, and geopolitical evolution. Prereq.: Geography 102 and History 202. *3 h. c.*

310. *Regional Geography of Latin America.* A regional approach to the economic and cultural backgrounds of the countries of South and Central America, stressing the operation of geographic principles in Latin-American development and behavior. Prereq.: Geography 102 or 119. *3 h. c.*

311. *Regional Geography of Asia.* A regional approach to the economic and cultural backgrounds of the countries of Asia, stressing the operation of geographic principles in Asian development and behavior. Pereq.: Geography 102. *3 h. c.*

312. *Regional Geography of Africa and the Middle East.* Resources, political affiliations, and stages of economic development of Africa and the Middle East. Prereq.: Geography 102. *3 h. c.*

313. *Geography of Europe.* Geographic factors in the economic, social, and political progress of the nations of Europe. Major problems of the continent in light of their geographic backgrounds. Prereq.: Geography 102 and 119. *3 h. c.*

314. *Regional Geography of Anglo-America.* The physical background of the English-speaking parts of North America and its relation to their economics and culture. The physiographic regions; the types of climate and their factors; natural vegetation; soils; the historical geography; the geographical regions. Prereq.: Geography 102 (waived for students enrolled in the American studies program). *3 h. c.*

400. *European Area Study.* A course in the geography of Western Europe with special emphasis on urban and cultural geography. The class, made up of 20 to 25 members, will visit cities in Austria, Belgium, France, Germany, Greece, Italy, the Netherlands, Switzerland, and the United Kingdom. The course is designed to provide maximum opportunities for meeting

the people of Europe, to develop an understanding of its geography, comparing and contrasting its various regions and urban areas, and to permit more valid interpretations of its current political, economic, and cultural state. The course grade is based upon a term paper which must be submitted within 90 days after the end of the course. Prereq.: junior standing. Fee: varies from year to year. *6 h. c.*

Geology

Associate Professor Klasovsky (supervisor); Assistant Professor E. Harris; Instructor A. Harris.

Lower Division Courses

101. *Physical Geology.* A study of the earth and the geologic processes that have worked on the earth. Laboratory study of minerals, rocks, maps, and aerial photographs. Three hours of lecture and three hours of laboratory work a week. Fee: $10.00. Staff. *4 h. c.*

101S. *Physical Geology.* The same as Geology 101 except that there is no laboratory work. Staff. *3 h. c.*

102. *Historical Geology.* A study of the history of the earth through the various eras as determined by fossils and stratigraphy. Laboratory study of fossils, map interpretation, sedimentation, stratigraphy, and history of various localities. Three hours of lecture and three hours of laboratory work a week. Prereq.: Geology 101. Fee: $10.00. Staff. *4 h. c.*

102S. *Historical Geology.* The same as Geology 102 except that there is no laboratory work. Prereq.: Geology 101S. Staff. *3 h. c.*

201. *Economic Geology.* A study of the origin, mode of occurrence, and major mining areas of important mineral resources. Three one-hour lectures a week. Offered in fall semesters of even-numbered years. Not considered a laboratory science. Prereq.: Geology 101. E. Harris. *3 h. c.*

202. *Geomorphology.* A detailed study of the various landforms and their origins. The laboratory session consists of the utilization of aerial photographs and topographic maps in recognizing and interpreting landforms. Three hours of lecture and one three-hour laboratory period a week. Prereq.: Geology 101 or consent of teacher. E. Harris. *4 h. c.*

Upper Division Courses

303. *Physiography of the United States.* A study of the physiographic regions of the United States with respect to what they are, and when and how they were formed. Maps, diagrams, and aerial photographs are used in laboratory work. Three hours of lecture and two two-hour laboratory periods a week. Prereq.: Geology 202. Offered in fall semesters of odd-numbered years. E. Harris. *4 h. c.*

304. *Structural Geology.* A study of the principles of rock deformation, its causes and effects, and methods of determination of geologic structure in the field. Original and secondary features of sedimentary, igneous, and metamorphic rocks are also studied in detail. Offered in the spring semester of even-numbered years. Prereq.: Geology 101 and 102. E. Harris. *3 h. c.*

German

Associate Professor Richardson (chairman); Instructors Rigo and Weltman; Mr. Heydle, Mr. Hines.

A major in German consists of 24 semester hours above the elementary level, plus English 351-352. For a combined major in humanities, see Humanities.

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS GERMAN 202, FOUR YEARS OF HIGH SCHOOL GERMAN, OR THE CONSENT OF THE TEACHER. FRESHMEN WHO SATISFY THIS PREREQUISITE MAY ENTER UPPER DIVISION COURSES.

Lower Division Courses

101-102. *Elementary German.* The fundamentals of grammar, drill in inflectional forms, elementary conversation, and reading of easy prose and poetry. No credit is given for this course if the student has entrance credit for two years of high school German; but see *Proficiency in a Foreign Language*, at the beginning of this section. Fee: $5.00 each semester. *3 + 3 h. c.*

201. *Intermediate German.* Elementary composition based on grammar review. Reading material is chosen both to furnish a basis for further study of German literature and to provide a working knowledge of the modern language. Prereq.: C or better in German 102 or in second-year high school German. Fee: $5.00. *3 h. c.*

202. *Intermediate German.* A continuation of German 201, using texts of increasing difficulty; conversation and composition. Prereq.: German 201 or three years of high school German, or consent of teacher. Fee: $5.00. *3 h. c.*

215-216. *Chemical German.* A basic course designed to develop expeditiously an ability to read chemical literature in German. Prereq.: German 101-102 and Chemistry 111-112, or equivalent. *3 + 3 h. c.*

Upper Division Courses

313. *Conversational German.* Conducted entirely in German, this course stresses pronunciation, vocabulary, and speech patterns, and gives the student some fluency in German besides introducing him to German civilization and selected literature. Prereq.: German 202 or equivalent. *3 h. c.*

325. *German Literary Tradition.* A brief survey of significant German writers, illustrated by selections from their writings. Prereq.: German 202 or equivalent. *3 h. c.*

326. *German Civilization.* A study of the geography, history, and traditions of contemporary Germany, to provide a background for reading modern German authors. Prereq.: German 202 or equivalent. *3 h. c.*

327. *German Literary Style.* Through exercises in translation, modes of literary expression in German and English are compared. Prereq.: German 202 or equivalent. *3 h. c.*

328. *Goethe and Schiller.* Representative works of these two great German classical writers are read and discussed. Prereq.: German 202 or equivalent. *3 h. c.*

329. *Advanced German Grammar.* A study of the most characteristic features of German word and sentence structure, with reference to analogies in English. Prereq.: German 202 or equivalent. *3 h. c.*

330. *Contemporary German Literature.* Twentieth century writers and tendencies. Prereq.: German 202 or equivalent. *3 h. c.*

331, 332. *Survey of German Literature.* A study of representative writers from the beginnings of German literature to the present. Prereq.: German 202 or equivalent. *3 + 3 h. c.*

333. *The German Novel.* The reading of selected works of fiction by writers from Goethe to contemporary novelists. Prereq.: German 202 or equivalent. *3 h. c.*

334. *German Drama.* The German theater from Lessing to the present day, with emphasis on such writers as Kleist, Grillparzer, Hebbel, and Hauptmann. Prereq.: German 202 or equivalent. *3 h. c.*

411, 412. *Germanic Linguistics.* An introduction to the history and comparative study of the Germanic languages, with particular attention to the West Germanic literary languages: German, Dutch, and English. Prereq.: German 202 or equivalent. *3 + 3 h. c.*

Greek

Associate Professors Richardson (chairman) and Ives.

A major in Greek is not offered, but credit in Greek may be counted toward a major in Latin and toward a combined major in classical studies (see *Ancient Languages and Literature*) or the humanities.

Lower Division Courses

101-102. *Elementary Greek.* Grammar, syntax, and simple composition; reading selections from various Greek writers and the New Testament. Introduction to Greek literature, history, and civilization; attention to the Greek element in the English language. Ives. *3 + 3 h. c.*

201, 202. *Greek Prose and Poetry.* Selections from prose writers and poets, including the dramatists, according to the needs and preferences of the class. Prereq.: Greek 101-102 or equivalent. Ives. *3 + 3 h. c.*

Upper Division Courses

301, 302. *Readings in Classical Greek Authors.* Readings from the principal Greek writers, selected with consideration for the students' tastes and interests. The course can be given on request by arrangement with the Director of the Division of Language and Literature. Prereq.: Greek 202 or equivalent, and consent of teacher. Ives. *3 + 3 h. c.*

Health Education and Physical Education

Men's Section: Associate Professor Beede; Assistant Professors Carson (department chairman) and Rosselli; Instructors Podoll and Reilly; Mr. Bennett, Mr. Carey, Dr. Davidson, Mr. Finamore, Mr. Heldman, Mr. Maro, Mr. Pollock, Mr. Reed, Mr. Robinette, Mr. Rollason, Mr. Thompson, Mrs. Unger, Dr. Wagner; staff.

Women's Section: Assistant Professors Laborde (assistant department chairman), Chuey, and Kocinski; Instructors Bailey and Reilly; Mrs. Christy, Miss Conkle, Mrs. Connelly, Miss Hura, Mrs. Kermani, Miss Liptak, Mrs. Naples, Mrs. Sabo, Mrs. Unger, Mrs. Walker; staff.

The Department of Health Education and Physical Education offers two types of courses: (1) those through which the general requirement in health and physical education is met; (2) those designed for the professional preparation of teachers of health education and/or physical education.

I. Required Courses

Every student seeking a degree from Youngstown University must earn a minimum of four semester hours of credit in health education and physical education. Of these, two hours are in health education (usually Health and Physical Education 109 [two credit hours]); the other two, normally, are in physical activity (four one-semester courses, each providing one-half hour of credit). The two hours in physical activity are waived for R.O.T.C. students who have completed Military Science 101-102 and 201-202. *Students who have had one or more years of military service*

must consult with the Chairman of the Department of Health Education and Physical Education.

The form of activity is chosen by the student; previous experience in it is not necessary. For men it may, and for women it must, differ each semester. Members of the varsity baseball, basketball, football, golf, swimming, tennis, and track and field squads may receive physical activity credit through such participation.

Men and women day students are scheduled for Health Education and Physical Education 109M and 109W respectively; evening students attend joint sections of 109C. Activity courses may be taken separately or coeducationally, depending on the activity. A woman student purchases the required uniform through the women's section of the department; a male student participating in any 125M activity course must purchase the required uniform through the men's section of the department. Most of the other equipment for required physical activities is available for use without charge. A student wishing to use his own racket, golf clubs, bow, etc., may do so, but he is advised to consult his teacher before buying new equipment.

If a student is excused from the regular activity courses for any reason, the chairman of the department may substitute suitable courses. Evening students are ordinarily permitted such substitution if they prefer it. Handicapped students and those needing remedial work receive special attention.

In addition to the regular tuition charge, there is a course fee for most half-hour activity courses taken.

Lower Division Courses Meeting the General Requirement

For Men

109M. *Health Education.* Personal health, mother and child care, and good community living, including a study of such common disorders as heart disease, cancer, tuberculosis and other communicable diseases and their control. Identical with Health Education and Physical Education 109C and 109W. Reilly, Rosselli, Bailey, Davidson, Wagner, Christy, Walker, Connelly. 2 *h. c.*

Activity courses:

116M. *Varsity Football.* Course requirements are met by participating for a season as a member of the intercollegiate football squad. Beede. ½ *h. c.*

117M. *Varsity Basketball.* Course requirements are met by participating for a season as a member of the intercollgeiate basketball squad. Rosselli. ½ *h. c.*

118M. *Varsity Baseball.* Course requirements are met by participating for a season as a member of the intercollegiate baseball squad. Rosselli. ½ *h. c.*

119M. *Varsity Track and Field.* Course requirements are met by participating for a season as a member of the intercollegiate track squad. Staff. ½ *h. c.*

120M. *Varsity Golf.* Course requirements are met by participating for a season as a member of the intercollegiate golf squad. Carson. ½ *h. c.*

121M. *Varsity Tennis.* Course requirements are met by participating for a season as a member of the intercollegiate tennis squad. Thompson. ½ *h. c.*

122M. *Varsity Swimming I.* Course requirements are met by participating for a season as a member of the intercollegiate swimming squad. Johnson. ½ *h. c.*

125M. *Gymnasium Sports.* Calisthenics and one or more of the following: basketball, soccer, softball, squash, swimming, touch football, volleyball. Two hours a week, at the Y. M. C. A. Fee: $2.50. Bennett. ½ *h. c.*

126M. *Beginning Wrestling.* Elements of wrestling, for Health and Physical Education majors or minors. Fee: $2.50. Staff. ½ *h. c.*

145M. *Beginning Swimming.* Adjustment to the water; fundamental skills; elementary back-stroke and front-crawl; elementary water safety. Open only to non-swimmers. Fee: $2.50. ½ *h. c.*

146M. *Intermediate Swimming I.* Proper form of elementary back-stroke, breast-stroke, side-stroke, back-crawl, and front-crawl; elementary diving, with an introduction to the balance of the nine basic styles of swimming including inverted breast stroke, overarm side stroke, single trudgeon stroke, and trudgeon crawl. Form, endurance, and personal safety are emphasized. Prereq.: Health Education and Physical Education 145M. Fee: $2.50. ½ *h. c.*

147M. *Intermediate Swimming II.* A review and continuation of Intermediate Swimming I, with additional consideration of the proper form of the nine basic swimming styles; emphasis on surface diving, treading water, turning and diving from the one-meter board; further emphasis on endurance and personal safety. Prereq.: Health Education and Physical Education 146M. Fee: $2.50. ½ *h. c.*

148M. *Advanced Swimming.* Continuing the nine basic styles of swimming, with emphasis on form and perfection of each stroke, and a consideration of plain and fancy diving and swimming, including personal safety. Prereq.: Health Education and Physical Education 147M, or the equivalent. Fee: $2.50. ½ *h. c.*

Coeducational

109C. *Health Education.* Personal health, mother and child care, and good community living, including a study of such common disorders as heart disease, cancer, tuberculosis, and other communicable diseases and their control. Identical with Health Education and Physical Education 109M and 109W. Reilly, Pollock, Rollason, Kermani. 2 *h. c.*

213C. *Sports Appreciation.* The rules, mechanics, skills, social benefits, contemporary status, and other aspects of baseball, football, golf, tennis, skiing, sailing, fishing, and many other sports. Fee: $2.50. Carson, Carey, Heldman, Maro, Rollason, Robinette. 2 *h. c.*

Activity courses:

120C. *A, B, C, D Adapted Activities.* Designed for students restricted from participation in the general program. Physical activities and recreational games are adapted to individual needs and capacities. Prereq.: recommendation of a physician and consent of department chairman or assistant department chairman. Fee: $2.50. Staff. ½ *h. c.*

130C. *Archery.* Techniques of target archery. Consideration is also given to the selection, care, and repair of equipment. Fee: $2.50. Staff. ½ *h. c.*

131C. *Badminton.* The skills, mechanics, and rules of badminton. Fee: $2.50. Staff. ½ *h. c.*

132C. *Beginning Badminton and Archery.* The beginning skills and rules of badminton and of target archery. Fee: $2.50. Staff. ½ *h. c.*

134C. *Fencing.* Fundamentals of foil fencing. Basic techniques of attack and parry, and elements of bouting and officiating. Fee: $2.50. Staff. ½ *h. c.*

135C. *Golf.* Fundamentals for beginning and intermediate golfers. Fee: $2.50. Carson, Chuey. ½ *h. c.*

137C. *Beginning Tennis.* The skills, mechanics, and rules of tennis, with emphasis on the doubles game. Fee.: $2.50. Thompson. ½ *h. c.*

153C. *Beginning Social Dance.* Designed for the student with no experience in ballroom dance. Emphasis is on the basic steps in the fox trot, waltz, tango, and rhumba. Popular dance steps are also included. Fee: $2.50. Staff. ½ *h. c.*

155C. *Folk and Square Dance.* European folk dances and American square and couple dances. Stress is placed on the schottische, waltz, polka, and two-step. Fee: $2.50. Staff. ½ *h. c.*

157C. *Beginning Tap Dance.* Basic tap technique for the beginner. Fee: $2.50. Staff. ½ *h. c.*

160C. *Intermediate Modern Dance.* A continuation of Health Education and Physical Education 159W. Consideration is given to problems in composition. Prereq.: Health Education and Physical Education 159W, or consent of teacher. Fee: $2.50. Staff. ½ *h. c.*

For Women

109W. *Health Education.* Personal health, mother and child care, and good community living, including study of such common disorders as heart disease, cancer, tuberculosis, other communicable diseases, and their control. Identical with Health Education and Physical Education 109M and 109C. Reilly, Bailey, Christy, Connelly, Walker. 2 *h. c.*

Activity courses:

100W. *Physical Activities.* Techniques and rules of field hockey, soccer, and volleyball. Open only to freshmen intending to major or minor in physical education. Fee: $2.50. Staff. ½ *h. c.*

110W. *Team Sports.* Techniques and rules of playing field hockey or soccer and volleyball. Fee: $2.50. Staff. ½ *h. c.*

111W. *Team Sports.* Techniques and rules of playing basketball and softball. Fee: $2.50. Staff. ½ *h. c.*

120W. *A, B, C, D Adapted Activities.* Designed for students restricted from participation in the general program. Physical activities and recreational games are adapted to individual needs and capacities. Prereq.: recommendation of a physician and consent of the assistant department chairman. Fee: $2.50. Staff. ½ *h. c.*

130W. *Archery.* Techniques of target archery. Consideration is also given to the selection, care, and repair of equipment. Fee: $2.50. Staff. ½ *h. c.*

131W. *Badminton.* The skills, mechanics, and rules of badminton. Fee: $2.50. Staff. ½ *h. c.*

132W. *Beginning Badminton and Archery.* The beginning skills and rules of badminton and target archery. Fee: $2.50. Staff. ½ *h. c.*

133W. *Beginning Bowling.* Fundamentals of bowling, including equipment selection, use of the straight ball delivery, and scoring. For the inexperienced bowler. Fee: $2.50. Staff. ½ *h. c.*

134W. *Beginning Fencing.* Fundamentals of foil fencing. Basic technique of attack and parry, and elements of bouting and officiating. Fee: $2.50. Staff. ½ *h. c.*

136W. *Gymnastics, Apparatus, Stunts, and Tumbling.* Gymnastic exercises, stunts, and tumbling activities. Instruction in apparatus includes the buck horse, box, rings, ropes, balance beam, trampoline, and even and uneven parallel bars. Fee: $2.50. Staff. ½ h. c.

137W. *Beginning Tennis.* The skills, mechanics, and rules of tennis with emphasis on the doubles game. Fee: $2.50. Staff. ½ h. c.

145W. *Beginning Swimming.* Adjustment to the water, fundamental skills, elementary backstroke, side stroke, front crawl, and elementary water safety. For non-swimmers. Fee: $6.00. Staff. ½ h. c.

146W. *Intermediate Swimming I.* Proper form of the elementary back stroke, sidestroke, breast stroke, back crawl and front crawl, elementary diving, and personal safety. Prereq.: Health Education and Physical Education 145W or the equivalent. Fee: $6.00. Staff. ½ h. c.

147W. *Intermediate Swimming II.* Continuation of Intermediate Swimming I, with consideration given to the proper form for the trudgeon, trudgeon crawl, overarm sidestroke, inverted breast stroke, and the variations of the nine basic styles of swimming. Emphasis is placed on improving endurance as well as form. Prereq.: Health Education and Physical Education 146W or the equivalent. Fee: $6.00. Staff. ½ h. c.

148W. *Advanced Swimming.* Synchronized swimming and elements of plain and fancy diving, including the competitive aspects of swimming and diving. Prereq.: Health Education and Physical Education 147W or the equivalent. Fee: $6.00. Staff. ½ h. c.

153W. *Beginning Social Dance.* Designed for the student with no experience in ballroom dance. Emphasis is on the basic steps in the fox trot, waltz, tango, and rhumba. Popular dance steps are included. Fee: $2.50. Staff. ½ h. c.

155W. *Folk and Square Dance.* European folk dances and American square and couple dances. Stress is placed on the schottische, waltz, polka, and two-step. Fee: $2.50. Staff. ½ h. c.

157W. *Beginning Tap Dance.* Basic tap technique for the beginner. Fee: $2.50. Staff. ½ h. c.

159W. *Beginning Modern Dance.* Fundamental movement techniques, elements of rhythmic and musical patterns. Basic composition. Fee $2.50. Staff. ½ h. c.

160W. *Intermediate Modern Dance.* A continuation of Health and Physical Education 159W. Consideration is given to problems in composition. Prereq.: Health Education and Physical Education 159W or consent of teacher. Fee: $2.50. Staff. ½ h. c.

II. Professional Courses

Youngstown University is fully approved by the Ohio State Department of Education for the preparation of health education and physical education teachers for public schools. The major may be in either health education or physical education.

For Men

Lower Division Courses

200M. *Introduction to Health, Physical Education, and Recreation.* A content survey of the areas of health, physical education, and recreation; an introduction to professional preparation. Prereq.: Education 101. 2 h. c.

250M. *Life-Saving Methods.* Techniques of basic and advanced survival swimming, with American Red Cross methods as the basis of instruction. Upon satisfactory completion, Red Cross and Y.M.C.A. senior life-

saving certification is granted. Prereq.: Health Education and Physical Education 147M, or consent of teacher. Fee: $2.50. *2 h. c.*

260M. *Skin and Scuba Diving.* Basic skin diving, using mask, fins, and snorkel. Scuba includes using tank and regulator, with emphasis on diving physics, diving physiology, planning, rescue, first aid, and safety skills. Skin and Scuba certification is granted upon successful completion of the course. Four class hours a week. Prereq.: Health Education and Physical Education 250M, or current certification as a senior lifesaver. *2 h. c.*

417M. *Kinesiology and Applied Anatomy.* Muscular structure and and function in relation to physical movement; analysis of fundamental movements. Prereq.: Biology 201. Fee: $2.50. *2 h. c.*

Upper Division Courses

309M. *Intramural Sports: Organization and Administration.* The principles and problems of conducting an intramural sports program, including pupil participation, awards, tournaments, types of officiating, publicity, sportsmanship, and other details. Carey. *3 h. c.*

311M-312M. *Teaching of Individual and Dual Sports.* Methods of playing and teaching various individual and dual sports, including tennis, badminton, fencing, free exercise, stunts, tumbling, apparatus activities, and archery. Prereq.: sophomore rank. Fee: $2.50 each semester. Carson, Podoll. *3 + 3 h. c.*

350M. *Water Safety Methods for Instructors.* Techniques of organizing and teaching swimming, diving, and life-saving activities. Red Cross instructor's certificate is awarded upon satisfactory completion. Prereq.: current certification as Red Cross Senior Life Saver. Staff. *2 h. c.*

360M. *Camping.* This course is designed to give the student experience in outdoor living and an insight into problems of camping trips. Particular attention is given to the care and handling of camping equipment, canoeing, outdoor cooking, study of wildlife, fishing, and fire prevention and control, as well as selection and preparation of camp sites. Prereq.: consent of teacher. Fee: Special. *2 h. c.*

370M. *Theory of Camp Counseling.* Camp administration, program planning, objectives, and campcraft as related to camp leadership. Trips to nearby camps and camp sites afford practical experience. Prereq.: consent of teacher. Fee: $2.50. Staff. *3 h. c.*

403M. *Health and Physical Education: Organization and Administration.* Study and practice of techniques involved in the organization and administration of the school health education and physical education program. Prereq.: Health Education and Physical Education 303C. Carson. *3 h. c.*

407M, 408M. *Techniques of Officiating.* Qualification of officials; techniques of officiating; interpretation of rules and opportunity to qualify for such ratings as are possible in the sport activities offered. Emphasis will be on football, basketball, baseball, and track. Prereq.: junior standing and consent of department chairman. Carson, Podoll. *2 + 2 h. c.*

409M. *Coaching of Baseball and Track and Field.* Prereq.: Health and Physical Education 312M. Rosselli, Carson, Carey. *3 h. c.*

410M. *Coaching of Football and Basketball.* Prereq.: Health and Physical Education 312M. Rosselli, Carey. *3 h. c.*

418M. *Remedial and Corrective Physical Education.* The organization of physical education programs adapted to the individual needs of handicapped persons. Consideration of abnormal conditions such as posture defects, cardiac defects, foot defects, post-operative cases, and certain orthopedic conditions. Evaluation of therapeutic exercises and activities.

Prereq.: Health and Physical Education 417C. Fee: $2.50. Carson. Podoll. *3 h. c.*

427M. *Seminar in Athletics.* Study of special problems pertaining to athletics. Prereq.: senior standing. Staff. *2 h. c.*

For Men and Women

Lower Division Courses

200C. *Introduction to Health, Physical Education, and Recreation.* A content survey of the areas of health, physical education, and recreation. Introduction to professional preparation. Prereq.; Education 101. Laborde. *2 h. c.*

201C. *First Aid and Care of Athletic Injuries.* Accident prevention and first aid procedures, especially for injuries common in physical activities. Principles and methods of athletic taping. The American Red Cross manual is followed. Standard, advanced, and instructor's certification are granted upon satisfactory completion. Reed. *2 h. c.*

303C. *History and Principles of Health and Physical Education.* The historical development of and the biological, sociological, psychological, and educational principles related to the field of health education and physical education. Prereq.: Biology 100 or 103, Psychology 202, and junior standing. Carson, Podoll. *3 h. c.*

306C. *Advanced Health Education.* Personal and community health, disease control, mental and social hygiene, nutrition and family living. The course includes materials necessary for teachers of school health and hygiene courses. Prereq.: standing as sophomore health education or physical education major or minor. Reilly, Rollason. *3 h. c.*

307C. *Community Health Agencies.* The administrative interrelationships of special agencies dealing with community health. Prereq.: Health Education and Physical Education 306C. Laborde, Kocinski, Liptak. *2 h. c.*

321C. *Health Education in Elementary Schools.* Methods and materials for health instruction; use and administration of health services; maintenance of health factors in the schoolroom; recognition of common disorders in children. Prereq.: junior standing and Health and Physical Education 107 and 108, or 109. Pollock, Rollason, Unger. *2 h. c.*

322C. *Physical Education for Elementary Grades.* Study of an extensive program of low-organization games, rhythms, plays, and stunts, their purposes, and methods of teaching them to children. The teacher-in-training learns the games and participates in them. Prereq.: sophomore standing. Fee: $2.50. Kocinski, Conkle, Hura, Chuey, Naples, Sabo, staff. *2 h. c.*

404C. *Playgrounds: Organization and Administration.* Study and practice of techniques involved in the organization and administration of playgrounds. Prereq.: junior standing. Finamore. *3 h. c.*

405C. *Recreational Activities: Organization and Administration.* The relation of physical education to recreation. The principles and aims of recreation; finding material for recreational group activities, and organizing and administering them. Prereq.: junior standing. Fee: $2.50. Carson, Carey. *3 h. c.*

415C. *School Health Education.* Principles, curriculum planning, teaching methods, evaluation, organization and administration of health education in elementary and secondary schools. Prereq.: Health Education and Physical Education 306C. Pollock. *4 h. c.*

417C. *Kinesiology and Applied Anatomy.* Muscular structure and function in relation to physical movement; analysis of fundamental movements. Prereq.: Biology 201 and 202. Fee: $2.50. Laborde. *2 h. c.*

419C. *Teaching of Rhythmic Activities I.* Rhythm and movement fundamentals; methods and materials of teaching folk, square, and social dance. Prereq.: Health Education and Physical Education 312M or 312W. Fee: $2.50. Kocinski. *3 h. c.*

420C. *Teaching of Rhythmic Activities II.* Methods and materials of teaching tap and modern dance. Prereq.: Health Education and Physical Education 419C. Fee: $2.50. Kocinski. *3 h. c.*

425C. *Seminar in Physical Education.* Study of special problems pertinent to physical education. Prereq.: senior standing. Staff. *2 h. c.*

426C. *Seminar in Health Education.* Study of special problems pertinent to health education. Prereq.: senior standing. Staff. *2 h. c.*

428C. *Normal and Physical Diagnosis.* A study of common physical deficiencies and defects that influence physical, mental, and social development. Techniques of conducting health examinations, clinical services, and other procedures. Prereq.: Health Education and Physical Education 418M or 418W. Staff. *2 h. c.*

465C. *Communicable Diseases.* The study of common communicable diseases and regional health problems: a study of pathogenic bacteria, protozoa, parasitic worms, and insect or arthropod vectors of diseases; a consideration of factors in and methods of control of human communicable diseases. Three one-hour discussion and three one-hour periods of demonstration and laboratory study a week. Fee: $2.50. *4 h. c.*

466C. *Public Health and Sanitation.* The study of community problems in sanitation and public health: a study of community health institutions and agencies, including water supply and distribution, sewage disposal, milk and restaurant inspection, school and public health nursing programs; study of special wards, hospitals, and clinics for the care and treatment of communicable diseases. Two three-hour periods of field work and experience a week, to provide for adequate field observation and training in recognition of communicable diseases and problems. Field trip fee: $2.50. *2 h. c.*

For Women

Lower Division Course

250W. *Life-Saving Methods.* Techniques of life-saving, with American Red Cross methods as the basis of instruction. Upon satisfactory completion, Red Cross certification is granted. Three class hours a week. Prereq.: consent of teacher. Fee: $2.50. Staff. *1 h. c.*

Upper Division Courses

311W-312W. *Teaching of Individual and Dual Sports.* Methods of playing and teaching various individual and dual sports, including tennis, golf, badminton, bowling, fencing tactics, free exercise, stunts, tumbling, apparatus activities, archery, and recreational games. Prereq.: sophomore rank. Fee: $2.50 each semester. Laborde. *3 + 3 h. c.*

350W. *Water Safety Methods for Instructors.* Techniques of organizing and teaching swimming, diving, and life-saving activities. Red Cross instructor's certificate is awarded upon satisfactory completion. Prereq.: current certification as Red Cross Senior Life Saver. Staff. *2 h. c.*

370W. *Theory of Camp Counseling.* Camp administration, objectives, activities, program planning, and campcraft as related to camp leadership. Trips to nearby camps and camp sites afford practical experience. Prereq.: junior standing and consent of teacher. Fee: $5.00. Laborde. *3 h. c.*

371W. *Practice of Camp Counseling.* Application of camp leadership skills is emphasized. Supervised counseling experience is afforded the

student through co-operation with nearby camps. Prereq.: Health Education and Physical Education 370W and consent of teacher. Laborde. *1 to 6 h. c.*

403W. *Health and Physical Education: Organization and Administration.* Study and practice of techniques involved in the organization and administration of the school health education and physical education program. Prereq.: Health Education and Physical Education 303C. Fee: $2.50. *3 h. c.* Laborde.

407W-408W. *Techniques of Officiating.* The theory and practice of officiating in field hockey, soccer, volleyball, basketball, softball, tennis, badminton, and track and field. Fee: $2.50 each semester. Staff. *2 + 2 h. c.*

411W-412W. *Teaching of Team Sports.* The theory and practice of teaching field hockey, soccer, volleyball, basketball, softball, and track and field. Prereq.: Health Education and Physical Education 100W. Fee: $2.50 each semester. Laborde, staff. *3 + 3 h. c.*

418W. *Remedial, Corrective and Adapted Physical Education.* The organization of physical education activities selected to meet the individual needs of the atypical student. Consideration of such atypical conditions as posture, cardiac, and foot defects, dysmenorrhea, post-operative cases, certain orthopedic conditions, defects of sight and hearing, and mental handicaps. Evaluation of therapeutic exercises and activities. Prereq.: Health Education and Physical Education 417C. Fee: $2.50. Laborde. *3 h. c.*

470W. *Seminar in Camp Administration.* Study of special problems pertinent to camp administration. Prereq.: senior standing. Staff. *2 h. c.*

Curriculum

Curriculum for the MAJOR in Health Education and Physical Education Leading to the Degree of Bachelor of Science in Education and an Ohio Provisional Special Certificate for Teaching Health Education and Physical Education in Grades 1 through 12.

First Year	Hrs.
*Biol. 100 Fundamentals of Animal Life	3
Biol. 201 Anatomy & Physiology I	3
Comm. 105-106 Basic Course I-II	6
Educ. 101 Introduction to Education	2
H. E. & P. E. 200C Introduction to Health, Physical Education and Recreation	2
Soc. Sci. 101, 102 Introduction to the Social Sciences I & II	6
**H. E. & P. E. activity courses (4)	2
Orientation 100	1
Elective	5
	30

Second Year	Hrs.
Biol. 202 Anatomy and Physiology II	3
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206, 251 or 275, or Hum. 201	3
H. E. & P. E. 201C First Aid and Care of Athletic Injuries	2
†H. E. & P. E. 306C Advanced Health Education	3
H. E. & P. E. 311M-312M or 311W-312W Teaching of Individual and Dual Sports	6
H. E. & P. E. 322C Physical Education for Elementary Grades	2
Hist. 201, 202 The United States	6
Psych. 201 General Psychology	3
Psych. 202 Psychology of Education	3
	34

*Students interested in biology as a teaching field must take Biology 103, 223, 224, 227, and 228, plus a three-hour elective in biology.

**For women, one of the activity courses is Health Education and Physical Education 100W. Additional activity courses may be required for competence in the major or minor field.

A maximum of 4 hours in activity courses may be counted toward the total needed for the degree.

†Students taking Health Education and Physical Education 306C are exempt from and will not receive credit for the general requirement of Health Education and Physical Education 109M or 109W.

Third Year (Men)	Hrs.
Psych. 305 Child Psychology, or Psych. 306 Psychology of Adolescence	3
Educ. 304 Student Teaching Laboratory: High School and Special Field	4
Educ. 308 Educational Sociology	2
H. E. & P. E. 303C History and Principles of Health and Physical Education	3
H. E. & P. E. 307C Community Health Agencies	2
H. E. & P. E. 309M Intramural Sports	3
H. E. & P. E. 370M Theory of Camp Counseling, 404C Playgrounds, or 405C Recreational Activities	3
H. E. & P. E. 409M Coaching of Baseball and Track and Field	3
H. E. & P. E. 410M Coaching of Football and Basketball	3
H. E. & P. E. 417C Kinesiology and Applied Anatomy	2
H. E. & P. E. 418M Remedial and Corrective Physical Education	3
	31

Third Year (Women)	Hrs.
‡Psych. 305 Child Psychology, or Psych. 306 Psychology of Adolescence	3
Educ. 304 Student Teaching Laboratory: High School and Special Field	4
Educ. 308 Educational Sociology	2
H. E. & P. E. 303C History and Principles of Health and Physical Education	3
H. E. & P. E. 307C Community Health Agencies	2
H. E. & P. E. 370W Theory of Camp Counseling	3
H. E. & P. E. 407W-408W Techniques of Officiating	4
H. E. & P. E. 411W-412W Teaching of Team Sports	6
H. E. & P. E. 417C Kinesiology and Applied Anatomy	2
H. E. & P. E. 418W Remedial, Corrective, and Adapted Physical Education	3
	32

Fourth Year	Hrs.
Educ. 306 Principles of Teaching	3
Educ. 404 Supervised Student Teaching: High School and Special Field	4
H. E. & P. E. 403M or 403W Health and Physical Ed: Organization and Administration	3
H. E. & P. E. 415C School Health Education	4
H. E. & P. E. 419C Teaching of Rhythmic Activities I	3
††H. E. & P. E. 420C Teaching of Rhythmic Activities II	3
Philosophy and Religion elective or Humanities 401 or 402	3
Psych. 308 Personality and Mental Hygiene	3
‡‡Electives	3-7
	29-33

††Men are not required to take Health Education and Physical Education 420C.
‡Women may take Health Education and Physical Education 428C, Normal and Physical Diagnosis (2 hours) instead of Psychology 305 or 306, thus making the total 31 or 32 hours.
‡‡For men, electives in the senior year amount to 6 hours; for women, electives are 3 or 4 hours.

Courses for the MINOR in Health Education and Physical Education Leading to the Degree of Bachelor of Science in Education and an Ohio Provisional High School Certificate with a Teaching Field Limited to Teaching Health Education and Physical Education in Grades 7 Through 12.

Course or Subject	Hours
Group A	
(Biological Life Sciences: Biology, Zoology, Comparative Anatomy, Human Anatomy, and Physiology)	
Biology 100. Fundamentals of Animal Life	3
Biology 201. Anatomy and Physiology I	3
Biology 202. Anatomy and Physiology II	3

Group B

(Principles, Organization, and Administration of Physical Education, including Athletics, Recreation, and Intramural Sports)

Health Education and Physical Education 403M or 403W, Organization and Administration of Health Education and Physical Education 3

Group C

(Methods and Materials in Rhythms, Games of Low Organization, Stunts, Tumbling, Apparatus, Recreational Group Activities, and Elementary Activities)

Health Education and Physical Education 311M-312M or 311W-312W, Teaching of Individual and Dual Sports 6

Health Education and Physical Education 322C, Physical Education for Elementary Grades 2

Group D

(Methods and Materials in Dance, Football, Basketball, Baseball, Track, Tennis, Golf, Swimming, Soccer, Speedball, Volleyball, and Other Athletic Sports Commonly Used in Secondary and College Programs)

Health Education and Physical Education 409M, Coaching of Baseball and Track and Field (for men) 3

Health Education and Physical Education 410M, Coaching of Football and Basketball (for men) 3

Health Education and Physical Education 411W-412W, Teaching of Team Sports (for women) 6

Health Education and Physical Education 419C, Teaching of Rhythmic Activities I 3

Group E

(Principles, Organization, and Administration of School Health Education, including School and Community Relationships, Methods and Materials for Teaching Health, and Evaluation)

Health Education and Physical Education 415C, School Health Education 4

Group F

(Personal and Community Hygiene, Nutrition, Disease Prevention and Control, Mental and Emotional Health, Accident Prevention and Control, Health Factors in Marriage, and Problems of Medical Care)

Health Education and Physical Education 201C, First Aid and Care of Athletic Injuries 2

Health Education and Physical Education 306C, Advanced Health Education 3

Hebrew

Associate Professor Richardson (chairman); Mr. Ness.

Lower Division Courses

101-102. *Elementary Hebrew.* Fundamental principles of grammar and the reading of simple prose, in preparation for reading narrative portions

of the first five books of the Old Testament. Introduction to elementary conversational Hebrew. Ness. *3 + 3 h. c.*

201-202. *Intermediate Hebrew.* Reading of selections from the Book of Genesis. Acquisition of a sufficient vocabulary for simple conversation in Hebrew. Prereq.: Hebrew 101-102 or equivalent. Ness. *3 + 3 h. c.*

History

Professor Behen (chairman); Associate Professors Roberts, Skardon, and Slavin; Assistant Professors Blue, Dobbert, and Earnhart; Instructors Domonkos and Sigler; Mr. Bauman, Mrs. Behen, Mr. Beelen, Mr. Benson, Mr. Cassimatis, Mr. Darling, Mr. Dornan, Mr. Glinatsis, Mr. Hallaman, Mr. Irwin, Father Kovalchuk, Mr. Loth, Mr. Manos, Mr. Matteo, Mr. Maxin, Mr. Noday, Mr. Nolfi, Mr. Orton, Mr. Palermo, Mr. Ross, Mr. Smercansky, Mrs. A. Smith, Mr. Sonntag, Mr. Steiskal, and Mr. Thomas.

A major in history consists of 30 semester hours including History 201 and 202 and two courses from each of the three following groups:

Group A—History 105, 106, 107.

Group B—History 252, 301, 303, 304, 305, 309, 310, 317, 318, 319, 325, 333, 350, 351, 370, 376, 388, 390, 402.

Group C—History 213, 214, 254, 304, 305, 306, 307, 308, 313, 321, 322, 352, 360, 363, 364, 368, 374, 375, 399, 401.

It is recommended that the student in choosing his electives should acquire as broad a background as possible in the social sciences and the humanities. Particular attention is called to courses offered by the departments of English, Economics, Political Science, Philosophy and Religion, Art, Music, Geography, and Sociology, and to the Humanities courses. Students contemplating graduate work in history should consider taking more foreign language courses than the minimum necessary to meet the general degree requirement. Finally, the student is reminded that the Department of History takes seriously the University's emphasis on the importance of adequate competence in the English language (see *Proficiency in English*, in the General Requirements and Regulations section) ; when there is need, students majoring in history should include in their programs advanced composition courses and courses in speech.

Lower Division Courses

105, 106. *History of Western Civilization.* The development of Western culture from its earliest appearance in the Near East down to the present day, with emphasis upon Europe. Staff. *3 + 3 h. c.*

107. *Eastern Civilizations.* A brief survey of the Far East, Southeast Asia, the Middle and Near East, and North Africa, with emphasis on the nineteenth and twentieth centuries. *3 h. c.*

200. *American Military History, 1607 to the Present.* A military history of the United States from 1607 to the present, including the social, political, and economic aspects of the period. Prereq.: Military Science 102. Listed also as Military Science 200. Staff. *3 h. c.*

201. *The United States to 1865.* The general, political, social, and economic development of the United States from the beginning of our history to the end of the Civil War. Listed also as Social Science 201. Staff. *3 h. c.*

202. *The United States Since 1865.* A continuation of History 201, emphasizing the period following the Civil War. Listed also as Social Science 202. Staff. *3 h. c.*

213, 214. *English History.* From the earliest times to the present, with emphasis on social, industrial, and commercial development, the growth of parliament, the contest for religious freedom, and the literary and intellectual development of the British people. Loth. *3 + 3 h. c.*

252. *Latin America.* A survey of Latin America from the European conquest to the present, emphasizing political, economic, cultural, and social developments. Loth. *3 h. c.*

254. *Modern Spain.* A survey of Spanish history from the Middle Ages to the present. *3 h. c.*

Upper Division Courses

301. *Economic History of the United States to 1850.* The expansion of the European economy in North America with special emphasis on the English influence: the early development of the national economy of the United States from 1763 to 1850; primary emphasis on agriculture and commerce in the colonial period, on the beginnings of industrialization in the early national period. Prereq.: History 201 and 202. Noday, Darling. *3 h. c.*

303. *Economic History of the United States Since 1850.* The development of the national economy of the United States; primary emphasis on industrialization and the rise of capitalism. Prereq.: History 201 and 202. Noday, Darling. *3 h. c.*

304, 305. *International Relations.* Identical with Political Science 304, 305. *3 + 3 h. c.*

306, 307. *Constitutional History of England.* The unfolding of Anglo-Saxon governmental and legal institutions from early Germanic times to the present day. Development of the court system, common law, representative government, the cabinet system, and imperial federation. Especially recommended to pre-law and political science students. Prereq.: junior standing or consent of teacher. History 306 is prerequisite to 307. *3 + 3 h. c.*

308. *The Far East.* A brief survey of the early history and civilization of China, Japan, and their dependencies, followed by a more detailed study since the mid-nineteenth century, with emphasis on East-West relationships. Prereq.: History 107 or consent of teacher. *3 h. c.*

309, 310. *Constitutional History of the United States.* Identical with Political Science 309, 310. *3 + 3 h. c.*

313. *Medieval Civilization.* A political, economic, intellectual, and cultural history of Europe from the Germanic invasions to the High Middle Ages. Prereq.: History 105 or consent of teacher. *3 h. c.*

317. *Civil War and Reconstruction.* An intensive study of the institutional and cultural life of the 1850's: military aspects; problems of the Confederacy; political, social, and economic effects of the war upon American society; and problems of reconstruction in both the North and the South. Prereq.: History 201 and 202. Earnhart, Darling. *3 h. c.*

318. *The United States Since 1900.* The period from the Peace of Versailles to the present is emphasized, with special attention to economic problem and the New Deal. Prereq.: History 201 and 202. Roberts, Hallaman. *3 h. c.*

319. *The Revolution and the Constitution.* A brief survey of the colonial background, the causes and events of the Revolution, the conditions leading to the Convention of 1787, and the formation of the Constitution. Prereq.: History 201 and 202. Earnhart. *3 h. c.*

321. *Europe in the Nineteenth Century.* Europe from the Congress of Vienna to the First World War, with emphasis on the rise of modern nationalism, the march of liberalism and democracy, and the growth of imperialism. Prereq.: History 106 or consent of teacher. Slavin. 3 *h. c.*

322. *The Renaissance and Reformation.* A political, cultural, economic, and intellectual history of Europe beginning with the High Middle Ages to the end of the religious wars. Prereq.: History 105 or 106 or consent of teacher. Dobbert, Irwin. 3 *h. c.*

325. *The West in American History.* A study of the advancing frontier from colonial times to the twentieth century, with attention to the interaction of East and West in diplomatic, political, economic, social, and intellectual history. Prereq.: History 201 and 202. *3 h. c.*

333. *History of the United States and Pennsylvania.* The history of the State of Pennsylvania with emphasis on its position in general American history. Prereq.: History 201 and 202. Behen. *3 h. c.*

350. *Social and Cultural History of the United States to 1860.* An examination of the social and cultural development of the United States with emphasis on the relationship between ideas and society. Special attention given to reform movements, slavery, and ideas about equality and education. Prereq.: History 201 and 202. Skardon, Darling. 3 *h. c.*

351. *Social and Cultural History of the United States Since 1860.* The significant intellectual currents in American life, and their relationship to the problems involved in the transition from an agrarian to an industrialized society. Special attention given to conflicts between freedom and security, and problems of social Darwinism and racial integration. Prereq.: History 201 and 202. Skardon, Darling. 3 *h. c.*

352. *Classical Civilization.* A survey of the political, economic, intellectual, and cultural achievements of the Greek and Roman world. Prereq.: History 105 or consent of teacher. Dobbert, Slavin. *3 h. c.*

360. *Europe from Westphalia to Waterloo.* A political, economic, intellectual, and cultural history of Europe from 1648 to 1815. Prereq.: History 106 or consent of teacher. Slavin, Irwin. 3 *h. c.*

363. *History of Russia to 1900.* A survey of Russian history from its beginnings to about 1900. Emphasis on political, social, and intellectual history, and Russia's expansion. Prereq.: History 105 or 106, or consent of teacher. Kovalchuk. 3 *h. c.*

364. *Russia in the Twentieth Century.* The history of Russia since 1900, with emphasis on the background of the Revolution of 1917, the economic and political growth of the U.S.S.R., and her emergence as a world power. Prereq.: History 106 or consent of teacher. 3 *h. c.*

368. *Europe in the Twentieth Century.* Europe excluding Russia, with emphasis on the period after 1918, the coming of the Second World War, its aftermath, and the beginnings of European integration. Prereq.: History 106 or consent of teacher. Low. *3 h. c.*

370. *Urban History of the United States.* The rise of cities in the United States from colonial times, emphasizing the period from 1860 to the present. Prereq.: History 201 and 202. Skardon. *3 h. c.*

374. *Economic History of Medieval Europe.* Lectures, readings, and discussions on the village economy, techniques of agricultural production, serfdom and the manor, artisans and guilds, and merchants and commerce. Region covered: Volga to the Thames. Prereq.: 12 hours of history, or consent of teacher. 3 *h. c.*

375. *Economic History of Modern Europe.* Lectures and readings on the accumulation of capital, the industrialization of Europe, the development of capitalism and socialism, and economic theories of those developments. Prereq.: 12 hours of history, or consent of teacher. 3 *h. c.*

376. *The Early National Period.* An intensive study of the United States from the establishment of the national government in 1789 to the beginning of the Union's disintegration around 1850. Prereq.: History 201 and 202. *3 h. c.*

388. *The History of American Business.* A study of American business in its historical setting from the colonial period to the present, with emphasis on the interaction of economic and political factors. Prereq.: History 201, 202 or the equivalent, and junior standing. Behen. *3 h. c.*

390. *Diplomatic History of the United States.* An historical survey of the development, major trends, and problems of the foreign relations of the United States. Identical with Political Science 390. Prereq.: History 201 and 202. *3 h. c.*

399. *Expansion of Europe to 1815.* Lectures and readings on the economic development of Europe after 1300, the oceanic discoveries, the colonial systems of the European countries, the influence of European expansion on non-European peoples, and the theories of the mercantilists. Prereq.: 6 hours of history or consent of teacher. *3 h. c.*

401. *Select Problems in European History.* A study in depth of specific problems in European history in such special areas as economics, political theory, and cultural and intellectual history. Prereq.: consent of teacher. Staff. *3 h. c.*

402. *Select Problems in American History.* A study in depth of specific problems in American history in such special areas as economics, political theory, and cultural and intellectual history. Prereq.: consent of teacher. Staff. *3 h. c.*

Home Economics

Assistant Professor Feldmiller (chairman); Miss Hugli, Mrs. Lindberg, and Miss Love.

The Department of Home Economics offers opportunities both for the student who wishes a general knowledge of the field as a preparation for homemaking and for the student who wishes to prepare for a profession.

To meet the requirements for a Bachelor of Arts degree with the major in home economics, the student must meet the general requirements for that degree and must complete the following courses:

Biology 100, 160, 201, and 202.

Chemistry 103 and 104.

Home Economics 101, 101L, 103, 201, 202, 204, 301, 303, 304, 305, 306, 307, 402, and 450.

For those who wish to qualify for teaching home economics in the secondary schools, courses are offered leading to the degree of Bachelor of Science in Education with a major in home economics. Such a student, in addition to the general requirements for that degree, must complete the following courses:

Biology 100, 160, 201, and 202.

Chemistry 103 and 104.

Education 101, 304, 306, and 404.

Home Economics 101, 101L, 103, 201, 202, 204, 301, 303, 304, 305, 306, 307, 400, 402 and 450.

Psychology 201 and 202.

The student should also read carefully the information provided in the School of Education section on the requirements of that school and of the State of Ohio for certification as a teacher.

For those interested in careers in dietetics or nutrition, courses are offered leading to the degree of Bachelor of Science with the major in home economics. For this purpose the student, besides meeting all general requirements for the Bachelor of Science degree, must complete the following courses:

Biology 100, 160, 201, and 202.
Chemistry 103 and 104.
Home Economics: 35 semester hours, including 101, 101L, 201, 202, 303, 309, 310, 407, 408, 409, 410, and 450.
Psychology 201 and 202.

Lower Division Courses

101. *Food and Nutrition.* The fundamentals of human nutrition as they apply to normal requirements. Study of the body's need for essential nutrients, the contributions of various food groups, the selection of an adequate diet, and the importance of diet in achieving and maintaining optimum health. Feldmiller. *2 h. c.*

101L. *Food and Nutrition Laboratory.* Application of the basic principles of nutrition in the selection and preparation of the foods commonly served for the three meals of the day. Experience in planning and preparing simple meals to provide an adequate diet. One two-hour laboratory period a week. Taken concurrently with Home Economics 101. Fee: $5.00. Feldmiller. *1 h. c.*

103. *Clothing Selection and Construction.* Designed to assist the student in analyzing personal and family resources and needs in the selection, purchase, use, and care of the wardrobe. Study and use of the commercial pattern and the fundamental processes and problems in the construction of simple garments. Two one-hour lectures and one two-hour laboratory period a week. Love. *3 h. c.*

201. *Principles of Food Preparation.* The basic principles and comparative methods in the preparation of commonly used foods. Two one-hour lectures and two two-hour laboratory periods a week. Prereq.: Home Economics 101 and 101L. Fee: $5.00. Feldmiller. *4 h. c.*

202. *Family Meal Planning and Service.* Principles of menu planning and table service for the family and for special occasions at various economic levels. One one-hour lecture and two two-hour laboratory periods a week. Prereq.: Home Economics 201. Fee: $5.00. Feldmiller. *3 h. c.*

204. *Advanced Clothing Construction.* Planned to develop greater understanding and proficiency in the selection, fitting, and construction of garments to meet individual needs. Construction of garments requiring more difficult techniques. One one-hour lecture and two two-hour laboratory periods a week. Prereq.: Home Economics 103. Love. *3 h. c.*

Upper Division Courses

301. *Textiles.* A basic study of fibers, yarns, fabric construction, and finishes and their importance in the selection, purchase, care, and serviceability of textiles for clothing and home use. Two one-hour lectures and one two-hour laboratory period a week. Prereq.: Home Economics 103. Feldmiller. *3 h. c.*

302. *Design and Flat Pattern-Making.* Planned to develop greater understanding and skill in the designing, fitting, and construction of gar-

ments. Making of a basic pattern and the creation of new designs by use of it. One one-hour lecture and two two-hour laboratory periods a week. Prereq.: Home Economics 204 and 301. Love. *3 h. c.*

303. *Household Equipment.* The selection, care, and use of various items of household equipment, with comparison of the merits of different types in respect to materials, design, cost, and performance. Two one-hour lectures and one two-hour laboratory period a week. Prereq.: consent of teacher. Feldmiller. *3 h. c.*

304. *Home Furnishings.* The fundamentals and principles involved in the judicious selection and arrangement of home furnishings. Consideration is given to family needs and resources, aesthetic principles, and the importance of planning in furnishing the home attractively. Two one-hour lectures and one two-hour laboratory period a week. Prereq.: consent of teacher. Feldmiller. *3 h. c.*

305. *Child Psychology.* Identical with Psychology 305 except for the addition of directed observation, Home Economics 306 being taken concurrently. Staff. *3 h. c.*

306. *Child Development Laboratory.* Observation in a nursery school and conferences with the Home Economics departmental staff; taken concurrently with Home Economics 305. *1 h. c.*

307. *Psychology of Marriage and Family Relations.* Identical with Psychology 307. Listed also as Sociology 307. Staff. *3 h. c.*

309. *Advanced Nutrition.* Designed to broaden and extend the student's knowledge of the science of nutrition, with special emphasis on food nutrients, the metabolism of food, and recent advances in the field of nutrition. Prereq.: Biology 250, Chemistry 209, and Home Economics 202. Hugli. *3 h. c.*

310. *Diet in Disease.* The modifications and adaptations of normal diets to meet the special nutritional needs in abnormal conditions where choice of food is of particular importance. Prereq.: Home Economics 309. Staff. *3 h. c.*

312. *Tailoring.* A study of the fundamental techniques involved in the construction of tailored coats and suits. Prereq.: Home Economics 103, 204, and 301. *3 h. c.*

400. *Methods of Teaching Home Economics.* A study of the problems involved in teaching home economics in junior and senior high schools. Observation of teaching in the public schools. Prereq.: Education 301 and 15 hours of credit in home economics. Feldmiller. *3 h. c.*

402. *Home Management.* Study of the home, its functions and operation, and the resources available for promoting family well-being and satisfaction. Prereq.: Home Economics 303 and 304. Feldmiller. *3 h. c.*

407. *Institutional Marketing and Equipment.* The selection and purchase of food and equipment for institutional food service with consideration of needs, quality, cost, and market practices. Two two-hour class periods and one two-hour laboratory period a week. Prereq.: junior or senior standing as food and nutrition major. Staff. *3 h. c.*

408. *Quantity Cookery.* Study and use of large equipment and the application of the principles of cookery in planning, preparing, and serving food for institutions. Six laboratory-discussion hours a week. Prerequisite or concurrent: Home Economics 407. Fee: $5.00. Staff. *3 h. c.*

409. *Institutional Management.* The principles of business organization and management as applied to problems of institutional food service. Six laboratory-discussion hours a week. Prereq.: Home Economics 408. Fee: $5.00. Staff. *3 h. c.*

410. *Experimental Cookery.* Application of scientific principles and experimental procedures to cooking and cooking processes. Two two-hour

laboratory periods a week. Prereq.: Chemistry 209 and Home Economics 202. Fee: according to materials used. Hugli. *2 h. c.*

450. *Seminar in Home Economics.* Required of all seniors majoring in home economics. Prereq.: senior standing and consent of the instructor. Feldmiller. *1 h. c.*

Humanities

Professor Dykema (supervisor); Associate Professors Ives and Pfau.

The material of the four Upper Division courses in Humanities is drawn from the great writings of Western culture. The primary purpose of the readings is to arouse the students morally, intellectually, and aesthetically through the stimulus of these writings. An important secondary purpose is to acquaint them with a body of writing which has been extremely influential in the development of Western culture and to relate that material to the society in which it was produced and to our present society.

Full credit in all the humanities courses is acceptable toward a major in English. Credit in Humanities 401, 402, 403, and 404 is acceptable toward a major in any of the following subjects, to the extent indicated: history, 1/3 credit; philosophy, 1/3 credit; political science, 1/6 credit; sociology, 1/6 credit. Should a student be doing major work in both English and one of the other departments mentioned, he may (a) apply credit in humanities courses entirely toward his English major, or (b) apply part of it toward his other major and the balance toward his English major. Humanities 401 and 402 give full credit toward the general requirement in religion.

Lower Division Course

201. *Mythology in Literature.* An introductory study of myths, chiefly classical, with some attention to their origins and cultural significance, and of works of literature, both classical and modern, in which myths are used. Prereq.: Communication 107, or equivalent, with grade of C. *3 h. c.*

Upper Division Courses

401. *Older Classics I.* Extensive readings in English from most or all of the following (and perhaps others): The Old Testament, Homer, Greek lyric poetry, Greek drama, Herodotus, Thucydides, Plato, Aristotle, Roman poets, Plutarch. Prereq.: junior or senior standing. *3 h. c.*

402. *Older Classics II.* Extensive readings in English from most or all of the following (and perhaps others): The New Testament, Plato, Aristotle, Cicero, Lucretius, Virgil, Horace, Ovid, Augustine, Dante, Boccaccio, Chaucer, Machiavelli, Erasmus, More, Rabelais, Montaigne, Cervantes. Prereq.: junior or senior standing. *3 h. c.*

403. *Early Modern Classics.* Shakespeare, Descartes, Milton, Molière, Spinoza, Locke, Lessing, Voltaire, Fielding, Rousseau, Adam Smith, Gibbon. Prereq.: junior or senior standing. *3 h. c.*

404. *Later Modern Classics.* Goethe, Balzac, Mill, Thackeray, Dostoevsky, Huxley, Ibsen, Tolstoy, Henry Adams, Hardy, William James, Shaw. Prereq.: junior or senior standing. *3 h. c.*

Combined Major in Humanities

A combined major in the humanities consists of Humanities 401, 402, 403, and 404, and 33 hours chosen from the following courses:

English 200, 203, 204, 205, 206, 275, 381, 382, 383, 400, 405, 406, 407, 412, 461, 471, 481, 491, 492, 493.
French 101-102, 201, 202, 309, 310, 330.
German 101-102, 201, 202, 325, 328, 330.
Greek 101-102, 201, 202, 301, 302.
Humanities 201.
Italian 101-102, 201, 202, 328, 330.
Latin 101-102, 201, 202, 301, 302, 304, 305, 401, 402, 403, 405.
Philosophy and Religion 230, 303, 309, 330.
Russian 101-102, 201, 202, 305, 306, 307.
Spanish 101-102, 201, 202, 301, 302, 401, 403, 404, 405, 406, 407.
Courses (totaling not more than nine hours) in certain related fields, such as history, with the approval of the adviser.

Of these, 15 hours must constitute a concentration unit chosen from one of the following groups:

a. English 200, 203, 204, 205, 206, 275, 381, 382, 383, 400, 405, 406, 407, 412, 461, 471, 481, 491, 492, 493; Humanities 201.

b. French 328, 330; German 325, 328, 330; Italian 328, 330; Russian 305, 306, 307; Spanish 301, 302, 401, 403, 404, 405, 406, 407.

c. Greek 201, 202, 301, 302; Humanities 201; Latin *201, *202, 301, 302, 304, 305, 401, 402, 403, 405; Philosophy and Religion 230P, 303P, 309G, 330G.

*At the discretion of the adviser.

Italian

Associate Professor Richardson (chairman); Mr. Polito.

A major in Italian consists of 30 semester hours above the elementary level; or 24 semester hours above the elementary level, plus 6 hours in Latin, French, or Spanish. For a combined major in the humanities, see Humanities.

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS EITHER ITALIAN 202 (OR ITS EQUIVALENT) OR THE CONSENT OF THE TEACHER. FRESHMEN WHO SATISFY THIS PREREQUISITE MAY ENTER UPPER DIVISION COURSES.

Lower Division Courses

101-102. *Elementary Italian.* The fundamentals of grammar, with attention to correct pronunciation and diction; reading of simple modern texts. No credit is given for this course if the student has credit for two years of high school Italian; but see *Proficiency in a Foreign Language*, at the beginning of this section. Fee: $5.00 each semester. Polito. *3 + 3 h. c.*

201. *Intermediate Italian.* Grammar review; elementary composition. Modern texts are read and used as a basis for conversation in Italian. Prereq.: C or better in Italian 102 or in second-year high school Italian. Fee: $5.00. Polito. *3 h. c.*

202. *Intermediate Italian.* A continuation of Italian 201, with stories and plays studied both as literature and as language. Prereq.: Italian 201 or three years of high school Italian, or consent of teacher. Fee: $5.00. Polito. *3 h. c.*

Upper Division Courses

325. *Advanced Italian Grammar.* A review of the essentials through grammatical analysis of a modern text. *3 h. c.*

326. *Italian Civilization.* A study of the geography, history, and traditions of modern Italy with a view to understanding its influence on our own civilization. *3 h. c.*

327. *Corso di Stile.* Through translation of English masterpieces into Italian and models of Italian style into English, the means of expression in both languages are compared and contrasted. *3 h. c.*

328. *Italian Literary Tradition.* A brief survey of the principal writers of Italy, with special attention to Dante. *3 h. c.*

329. *Conversational Italian.* Thorough drill in pronunciation, and conversation based on a composition text. *3 h. c.*

330. *Contemporary Italian Literature.* A study of modern Italian literary tendencies as expressed in the principal writers of the twentieth century, using the anthology *Poeti d'Oggi.* *3 h. c.*

411, 412. *Comparative Grammar of the Romance Languages.* Identical with French 411, 412; listed also as Spanish 411, 412. *3 + 3 h. c.*

Journalism

See *English.* Besides a major in English, the student of journalism should secure a broad education in the liberal arts with emphasis on the social sciences and the humanities.

Latin

Associate Professors Richardson (chairman) and Ives; Instructor C. Thoman.

A major in Latin consists of 18 hours of Latin of 300 or 400 level plus 12 hours (of any level) of Latin, Greek, and/or other pertinent courses acceptable to the Director of the Division of Language and Literature. For a combined major of 45 hours in classical studies or in the humanities, see the sections under those headings.

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS TWO YEARS OF HIGH SCHOOL LATIN PLUS LATIN 201 AND 202; OR THREE YEARS OF HIGH SCHOOL LATIN PLUS LATIN 202; OR FOUR YEARS OF HIGH SCHOOL LATIN; OR THE CONSENT OF THE TEACHER. A FRESHMAN SATISFYING EITHER OF THE LATTER TWO PREREQUISITES MAY ENTER AN UPPER DIVISION COURSE.

Lower Division Courses

101-102. *Elementary Latin.* Essentials of Latin grammar and some reading of connected prose. Designed for pre-law students and majors in English and modern languages as well as for students planning to continue work in Latin. No credit is given for this course if the student has credit for two years of high school Latin; but see *Proficiency in a Foreign Language,* at the beginning of this section. *3 + 3 h. c.*

201. *Intermediate Latin I.* A careful review of Latin grammar and vocabulary followed by selected readings principally from Cicero and other writers, chosen to minimize duplication of the material read in the usual third-year high school course. Prereq.: grade of C or better in Latin 102 or in second-year high school Latin, or consent of teacher. *3 h. c.*

202. *Intermediate Latin II.* A continuation of Latin 201, with the readings principally from Virgil's *Aeneid.* Prereq.: Latin 201, or three years of high school Latin, or consent of teacher. *3 h. c.*

Upper Division Courses

301. *Ovid.* Selections from the *Metamorphoses* and other writings. *3 h. c.*

302. *Cicero. The De Senectute;* prose composition. *3 h. c.*

304. *Latin Lyric Poetry.* Selections from Horace and Catallus. *3 h. c.*

305. *Pliny.* Selections from the *Letters;* prose composition. *3 h. c.*

401. *Roman Historians.* Readings principally from Caesar, Sallust, Livy, and Tacitus. *3 h. c.*

402. *Lucretius.* Selections from the *De Rerum Natura.* A study of Epicurean philosophy as presented by Lucretius. *3 h. c.*

403. *History of Latin Literature.* A study of the development of Latin literature from its beginning through the Empire. *3 h. c.*

404. *Latin Syntax and Advanced Composition.* A review of the principles of Latin syntax with practice in the writing of Latin. *3 h. c.*

405. *Advanced Readings.* Selections from various Latin writers. *1-3 h. c.*

406. *Roman Satire.* Readings in Horace, Juvenal, Martial, and Petronius. The place of satire in Latin literature. *3 h. c.*

407. *Roman Comedy.* Selected plays of Plautus and Terence. *3 h. c.*

Law

See *Pre-Law Study.*

Mathematics

Professors Dillon and Yozwiak; Associate Professor Malak (chairman); Assistant Professors Ciotola, Hurd, Knauf, Mavrigian, Ricksecker, K. Whipkey and N. Whipkey; Instructors Biles and Conti; staff.

Mathematics may be the major subject for the degree of Bachelor of Arts, Bachelor of Science, or Bachelor of Science in Education.

The student majoring in mathematics must complete, in addition to the general University requirements for the degree (see *Requirements for the Degrees,* at the beginning of this section), the following mathematics courses: 151, 152, 251, 252, 313, 371, 410, 411, and any four of the following: 309, 310, 311, 314, 315, 320, 329, 330, 340, 341, 345, 347, 348, 350, 360, 372.

For the Bachelor of Science degree the student majoring in mathematics must minor in physics, chemistry, or biology; and his foreign language must be French, German, Italian, or Russian. The applicant for the Bachelor of Arts degree may choose any minor and any foreign language.

Non-Credit Courses

The following courses provide no University course-credit. They are for students whose pre-college study is incomplete in mathematics at the time of their admission to the University.

10. *High School Algebra, First Year.* Three hours a week, at night. Evaluated as one high school credit. *3 n. c.*

11. *Plane Geometry.* Three hours a week, at night. Prereq.: one year of high school algebra or Mathematics 10. Evaluated as one high school credit. *3 n. c.*

Lower Division Courses

100. *Algebra.* The number systems; algebraic operations; functions; solutions of linear and quadratic equations. Prereq.: one unit of high school algebra, one unit of high school geometry, or Mathematics 10 and 11. (Ordinarily, no credit is given for this course to the student who has had second-year high school algebra.) *3 h. c.*

107. *Trigonometry.* Trigonometric functions, graphs of trigonometric functions, trigonometric equations, and trigonometric identities. Solution of right and oblique triangles, logarithms, complex numbers, and inverse trigonometric functions. Prereq.: two units of high school algebra, one unit of high school geometry, or Mathematics 11 and 100. (Ordinarily, no credit is given for this course to the student who has had high school trigonometry.) *2 h. c. + 1 n. c.*

151. *Introduction to Mathematical Analysis.* A course in the principles of mathematics. An axiomatic treatment of the number system, mathematical logic, the algebra of sets, abstract algebra, Boolean algebra, functions and relations, equations and inequalities, the concept of limits, a review of algebraic and transcendental functions, and probability. Prereq.: two units of high school algebra, one unit of high school geometry, and a half-unit of high school trigonometry, or Mathematics 10, 11, 100, 107; and a satisfactory score on the student's entrance tests. *5 h. c.*

152, 251, 252. *Analytic Geometry and Calculus I, II, and III.* An integrated course in the elements of analytic geometry and calculus. A detailed study of limits, derivatives and integrals of functions of one and more variables, application to geometry and physics, the introduction to differential equations. Prereq.: Mathematics 151. *5 + 5 + 5 h. c.*

Upper Division Courses

309. *Ordinary Differential Equations.* An introductory course in the theory and solution of ordinary differential equations. Emphasis on the techniques for solving linear equations with applications to geometric, physical science, and engineering problems. An introduction to series solutions. Prereq.: Mathematics 252. *3 h. c.*

310. *Partial Differential Equations.* An introduction to the theory of linear partial differential equations with applications to initial and boundary-value problems in mathematical physics. Prereq.: Mathematics 309. *3 h. c.*

311. *Theory of Equations.* Theorems on roots of polynomial equations. Symmetric functions; theory of determinants. Prereq.: Mathematics 152. *3 h. c.*

313, 314. *Abstract Algebra I and II.* Number systems, groups, integral domains, fields, vector spaces, matrices and linear transformations. Prereq.: Mathematics 152. Mathematics 313 is prerequisite to 314. *3 + 3 h. c.*

315. *Matrix Theory and Linear Algebra.* Matrices, matrix operations, linear transformations, and applications. Prereq.: Mathematics 152. *3 h. c.*

320. *Vector Analysis.* The elementary vector operations, scalar and vector products of two or three vectors, differentiation of vectors, applications to electrical theory and to mechanics. Prereq.: Mathematics 252. *3 h. c.*

329. *Euclidean Geometry.* The study of geometric constructions by various methods. The use of loci, indirect elements, and similar and homothetic figures, properties of the triangle, the nine-point circle, the orthocentric quadrilateral, recent geometry of the triangle. Prereq.: Mathematics 152. *3 h. c.*

330. *Foundations of Geometry.* The development of Euclidean and non-Euclidean geometries from postulate systems. Prereq.: Mathematics 152. *3 h. c.*

340, 341. *Mathematical Statistics I and II.* The mathematical bases for the statistical design of research: probability, frequency distributions, estimation, tests of hypotheses, correlation, general principles for testing hypotheses, small sample distributions, and the design of experiments. Prerequisite or concurrent: Mathematics 252. Mathematics 340 is prerequisite to 341. *3 + 3 h. c.*

345. *Operations Research.* An introduction to operations research: problem formulation, linear programming, queueing theory, and design of research. Emphasis on mathematical methods. Prereq.: Mathematics 340. *3 h. c.*

347, 348. *Theory of Probability I and II.* The nature of probability theory: conditional probability: stochastic independence: binomial Poisson, and normal distributions: laws of large numbers: limit theorems: generating functions: recurrent events: random walks: Markov chains: stochastic processes and applications. Prereq.: Mathematics 340. Mathematics 347 is prerequisite to 348. *3 + 3 h. c.*

350. *History of Mathematics.* A survey of the historical development of mathematics. Prereq.: Mathematics 152. *3 h. c.*

360. *Numerical Analysis.* The theory and techniques of numerical computation. The solution of an equation or a system of equations; the method of finite differences; interpolation methods; numerical differentiation and integration; numerical solution of ordinary differential equations; least squares techniques. Prereq.: Mathematics 252. *3 h. c.*

371, 372. *Advanced Calculus.* An introduction to the theory of functions of real variables with a more critical presentation of the fundamentals of the differential and integral calculus. Prereq.: Mathematics 252. Mathematics 371 is prerequisite to 372. *3 + 3 h. c.*

402. *Introduction to Secondary School Mathematics.* A course designed for teachers of 7th and 8th grade mathematics, covering material suggested by the School Mathematics Study Group for inclusion in such programs. Some of the topics are number systems, number bases, nonmetric geometry, factoring and primes, equations, probability, and applications. Prereq.: current teaching on a secondary level and enrollment in the In-Service Institute of the National Science Foundation. *4 h. c.*

404. *Fundamental Concepts of Algebra.* A course designed to give secondary school teachers of mathematics a background in some modern aspects of mathematics. Special emphasis is given to the structure of elementary algebra and other topics suggested by the School Mathematics Study Group for inclusion in the 9th and 11th year algebra courses. Prereq.: current teaching of algebra in a secondary school and enrollment in the In-Service Institute of the National Science Foundation. *4 h. c.*

405. *Fundamental Concepts of Geometry.* A course designed to give secondary school teachers of mathematics a background in some modern aspects of mathematics, including an examination of the foundations of Euclidean geometry in the light of recent developments. The course covers material suggested by the School Mathematics Study Group for inclusion in the 10th year geometry course. Prereq.: current teaching in a secondary school and enrollment in the In-Service Institute of the National Science Foundation. *4 h. c.*

406. *Elementary Functions and Matrix Algebra.* A course designed for secondary school teachers of 12th year mathematics, covering material suggested by the School Mathematics Study Group for inclusion in such a course. Some of the topics are polynomial, exponential, logarithmic, and circular functions, matrix operations, algebra of 2 x 2 matrices, matrices and linear systems, and transformations of the plane. Prereq.: current teaching of mathematics in a secondary school and enrollment in the In-Service Institute of the National Science Foundation. *4 h. c.*

410-411. *Mathematics Seminar.* A required course for mathematics majors, designed to acquaint the student with current developments. Prereq.: senior standing. *1 + 1 h. c.*

Medical Technology

See *Pre-Medical Study and Allied Fields.*

Medicine

See *Pre-Medical Study and Allied Fields.*

Metallurgy

See *Chemistry,* and the William Rayen School of Engineering section.

Military Science

Colonel Wales (chairman); Major Ozaki; Captain Hilton; Sergeant First Class Carney; Sergeant James.

A unit of the Reserve Officers' Training Corps was established at this institution in 1950 and is administered as the Department of Military Science.

The R. O. T. C. selects and trains college students to receive commissions as junior officers in the Regular and Reserve components of the United States Army.

A student enrolled in the R. O. T. C. is not a member of the Army. He is instructed, however, from the latest Army textbooks by Army officers. Instruction is based on the latest methods and theories evolved during and after World War II, and includes practical exercises in many fields, utilizing the most modern army equipment as well as facilities of the University.

Every graduate of the R. O. T. C. program who receives a baccalaureate degree after successfully completing four years of academic study is tendered a commission as a second lieutenant in the United States Army Reserve. A graduate may, at his request and subject to the needs of the services, be commissioned in any arm or service of the Army for which he is professionally qualified.

A cadet who distinguishes himself in academic and military subjects, and who demonstrates outstanding qualities of character and leadership, may, at the end of his junior year, be designated a distinguished military student and may then apply for a Regular Army commission. This opportunity is open to any qualified individual, regardless of the degree toward which he is working.

The military science program consists of two courses: the basic course, comprising the first two years; and the advanced course, comprising the last two years. Each two-year course may be elected separately, but *only* in its entirety. Only under unusual circumstances may a student drop a two-year course in military science, once he has elected it. In such cases no credit is granted for previously completed semesters of the same two-year course. No two semesters of the basic course may be taken simultaneously.

The Armed Forces grant deferments from military service, subject to quota limitations, to students who are pursuing an R. O. T. C. course and who maintain a satisfactory academic standing.

Study in military science done in other institutions is credited as follows:

a. A student who has done one year's work receives credit for it upon completing the basic course.

b. A student with two years' work receives credit for the basic course.

c. A student with three years' work receives credit for the basic course on entering and credit for the third year upon completing the advanced course.

The basic course is open to any male student of the University who

(1) is carrying at least 12 semester hours, including R. O. T. C.;

(2) is physically qualified;

(3) has not reached his 23rd birthday and who is at least 14 years of age at the time of initial enrollment; and

(4) has at least three academic years remaining in his course at this institution; or may be authorized to enroll in Military Science 201-202 by virtue of having had at least six months' previous active service or active duty training in the United States Army, Navy, Air Force, Marine Corps, or Coast Guard.*

The advanced course is open to any male student of the University who

(1) is carrying at least 12 semester hours, including R. O. T. C.;

(2) is physically qualified;

(3) has not reached his 26th birthday;

(4) has successfully completed the two years of the basic course or who may be authorized to enroll in Military Science 301-302 by virtue of having had at least twelve months' active service or active duty training in the United States Army, Navy, Air Force, Marine Corps, or Coast Guard;*

(5) has been selected for the course by the president of the University and the professor of military science;

(6) executes a written agreement with the government that, in consideration of commutation of subsistence to be furnished in accordance with law, he will complete the advanced course at this institution or at any other institution where such a course is given and pursue the course of camp training during the period prescribed;

(7) has at least two academic years to complete for graduation; and

(8) agrees to accept appointment in the United States Army Reserve if tendered.

Military science students are organized into a Corps of Cadets, commanded and administered by students designated as cadet officers and cadet non-commissioned officers. In order to encourage development of characteristics of leadership, cadet officers and non-commissioned officers are given the maximum possible responsibility and authority in training and administering the cadet corps. Scholarships are awarded to students selected for the highest positions of cadet leadership (see *Scholarships and Loans*, in the General Information section).

*Each case will be judged individually so that the best interests of the student, the University, and the service will be served.

No compensation is paid the student by the government during the basic course. An advanced-course student receives an allowance from the government in lieu of subsistence, which at presents amounts to 90 cents a day for not more than 595 days during the two academic years.

By agreement between the United States government and the University, the Army furnishes instructors, equipment, textbooks, student uniforms, etc., while the University furnishes all other facilities for the four-year program. A Military Equipment Deposit and fee is required of each student in military science. A refund is made to him when he turns in, at the end of the school year (or upon withdrawal from the University), the government property which has been issued him by the University.

Each advanced military science student must attend one summer camp of about six weeks' duration. He is paid private's pay while there and is allowed travel expense at 5 cents a mile to and from camp.

Students enrolled or considering enrollment in R. O. T. C. should read *Modifications for R. O. T. C. Students*, in the General Requirements and Regulations section.

Lower Division Courses

101-102. *Basic course, first year (Military Science I).* Organization of the Army and R. O. T. C.; individual weapons and marksmanship; United States Army and national security; leadership laboratory. *In addition, the Department of the Army requires the student enrolled in this course to take a minimum of two academic hours during his freshman year in the areas of effective communication, science or mathematics, or psychology, to be determined in consultation with the Chairman of the Department of Military Science. Courses of one, two, or three credit hours in these areas may be chosen; they may be courses required for a degree, or electives.* 1 + 1 *h. c.*

200. *American Military History, 1607 to the Present.* Identical with History 200. Prereq.: Military Science 102. 3 *h. c.*

201-202. *Basic course, second year (Military Science II).* American military history; map and aerial photograph reading; introduction to operation and basic tactics; leadership laboratory; counter-insurgency. Prereq.: Military Science 102, or active military service. 2 + 2 *h. c.*

Upper Division Courses

301-302. *Advanced course, first year (Military Science III).* Small unit leadership, military teaching principles; branches of the Army; small unit tactics and communication; pre-camp orientation; leadership laboratory; counter-insurgency. *In addition, the Department of the Army requires the student enrolled in this course to take a minimum of three academic hours in the areas of effective communication, science or mathematics, psychology, or political science, to be determined in consultation with the Chairman of the Department of Military Science. They may be courses required for a degree, or electives; normally, however, they must be Upper Division courses.* Prereq.: Military Science 202, or active military service. 1 + 2 *h. c.*

401-402. *Advanced course, second year (Military Science IV).* Operations: logistics; Army administration; military law; the role of the United States in world affairs; service orientation; leadership laboratory; map reading. *In addition, the Department of the Army requires the student enrolled in this course to take a minimum of three academic hours in the areas of effective communication, science or mathematics, psychology, or political science, to be determined in consultation with the Chairman of the*

Department of Military Science. They may be courses required for a degree, or electives; normally, however, they must be Upper Division courses. Prereq.: Military Science 302. *2 + 1 h. c.*

402S. *R. O. T. C. Summer Camp.* Six weeks' summer camp at an Army post. Practical exercises in organization, functions, and missions of the Army. Physical training, small arms, small unit tactics and communications, leadership, drill and command. Prereq.: Military Science 302. *½ h. c.*

Modern Languages and Literature

See *English, French, German, Hebrew, Italian, Russian,* and *Spanish.* For literature in translation, see *Humanities.*

Music

A major in the history and literature of music is acceptable for the degree of Bachelor of Arts. For the music courses for such a major, see the Dana School of Music section.

Various courses at the Dana School of Music may be taken as electives by students in other units.

Natural Science

Associate Professor Dehnbostel (supervisor); Instructors Ameduri and Matzye; Mr. Appelman, Mr. Chambers, Mr. Jones, Mr. Petretich, and Miss Thomas.

Credit for these courses is not applicable toward the degree of Bachelor of Science or Bachelor of Engineering; it is applicable toward the Bachelor of Arts degree only if the courses form all or part of a teaching minor in general science.

Lower Division Courses

120. *Chemical Science.* An introduction to the fundamentals of chemistry. Three lectures a week with demonstrations. *3 h. c.*

121. *Physical Science.* Basic principles and fundamental laws of physics as illustrated by mechanics, sound, light, heat and electricity. *3 h. c.*

124. *Plant and Animal Life I.* Biological principles of plant and animal life, morphology, classification, distribution, and ecological relationship to human life and activities. Not open to students who have had high school biology except by consent of the supervisor of the natural science department. *3 h. c.*

125. *Plant and Animal Life II.* A continuation of Natural Science 124. Prereq.: Natural Science 124. *3 h. c.*

203. *Our Natural Resources and their Conservation.* Identical with Geography 203. Prereq.: Geography 102. *3 h. c.*

222. *Structure and Function of Man.* A study of the organic systems of the human organism and the important functions of each system. Consideration is given to the course of development of the human, the role of hereditary characteristics, and man's position in relationship to other mammals. Prereq.: Natural Science 120 or 121 and 124 or 125. *3 h. c.*

Nursing

Information on courses for those interested in nursing training or public school nursing, as well as on programs for graduate nurses who wish to

complete the requirements for a bachelor's degree, will be found in this section under *Pre-Medical Study and Allied Fields.*

Orientation

Professor Dykema (supervisor); staff

Orientation 100 is a requirement for graduation. Every day freshman should take it at the beginning of his first semester, in conjunction with Communication 105. Evening students take the course during their junior year—after they have 64 semester hours of credit and before they are classified as seniors. The requirement applies to all students who entered Youngstown University after September 1, 1957.

Lower Division Course

100. *Orientation to Youngstown University.* A lecture course designed to help the student orient himself to college. Discussion of the relation of college to society, organization of Youngstown University, entrance and graduation requirements, employment opportunities for college graduates, grades, studying in college, etc. The class texts include the University catalog; examinations are given on the texts and on the lectures. *1 h. c.*

Philosophy and Religion

Professors Smith (acting chairman) and W. Miner; Associate Professors Riley and Father Lucas; Assistant Professors Kelty and Father Lang; Mr. Almgren, Mr. Arnold, Dr. Azneer, Mr. Belsan, Mr. Campbell, Father DiBlasio, Mr. Eminhizer, Mr. Murphy, and Father Vansuch

The three-hour general requirement in religion may be met by taking any course in the Department of Philosophy and Religion. Humanities 401 and 402 also meet this requirement.

The student is assumed to understand that the approach made to the subject matter in any course, or section of a course, will be that of the teacher in charge.

A student may elect to major in any of the following sections in the department. One-third credit toward these majors will be allowed for any courses listed under Humanities.

SECTION I-G. PHILOSOPHY, GENERAL

The major in Philosophy, General, has been planned to prepare the pre-ministerial student for seminary training and also to provide a foundation for the student who plans to make philosophy his life work.

The major consists of Philosophy and Religion 204G, 221G, 301G, 302G, and 305G, plus fifteen additional hours in the department chosen in consultation with the departmental chairman.

Lower Division Courses

100G. *Life's Ideals.* An elementary consideration of the meanings and goals of human effort, especially as these are related to college life. Discussion and lecture consideration of such questions as What am I? What do I want most? What is reality? How can I attain freedom? and How may I have faith? Selected readings appropriate to the student's experience. Dr. Riley. *3 h. c.*

204G. *Introduction to Philosophy.* The nature of philosophy, and its relation to science, art and religion. Examination of the mind-body problem, freedom and determinism, the nature and validity of knowledge, and some bases for value judgment, with the implications of all these for free ethical choice. Staff. *3 h. c.*

221G. *Introduction to Symbolic Logic.* A course in which the principles of modern symbolic logic are studied and applied to the analysis of arguments; emphasis is placed on the logic of propositions, the logic of propositional functions, and the logic of classes. Mr. Eminhizer, Dr. Riley. *3 h. c.*

223G. *Inductive Logic.* The nature of causation. Truths and probability. Hypotheses and their verification. Scientific method and its assumptions. Statistics and their logical employment. Analogy and generalization. Prereq.: Philosophy and Religion 220S or 221G. *3 h. c.*

Upper Division Courses

301G. *History of Philosophy.* The development of philosophic thought from early Greek times through the Middle Ages. Dr. Riley. *3 h. c.*

302G. *History of Modern Philosophy.* Continuation of Philosophy and Religion 301 from the end of the Middle Ages to the present. Dr. Riley. *3 h. c.*

304G. *Philosophy of Religion.* The meaning of religion, and its relation to other aspects of culture. The function and evaluation of religious experience. The existence and nature of God; the problem of evil; the soul, with the problems of freedom and immortality. Prayer. Current trends toward skepticism and faith. Dr. Riley. *3 h. c.*

305G. *Ethics.* The principles upon which valid choice between moral standards can be made. The consideration of reasons why such a study is possible, including a critique of authoritarianism, cultural relativism, absolute determinism, and other views denying this possibility. The examination and evaluation of the major ethical theories. Dr. Riley, Mr. Eminhizer, Mr. Schulman. *3 h. c.*

306G. *Psychology of Religion.* The analysis of religious experience. An investigation of the psychological processes, conscious and unconscious, which produce, accompany, and are set in motion by, the various personal experiences called religious. Prereq.: Psychology 201. Identical with Psychology 303. Listed also as Philosophy and Religion 306P. Dr. Riley. *3 h. c.*

307G. *Types of Philosophy.* The principal approaches to the problems of philosophy, and their differences; an outline of the historical answers to the questions indicated in Philosophy and Religion 204G. Prereq.: Philosophy and Religion 204G. Dr. Riley. *3 h. c.*

309G. *Aesthetics.* Classical and modern philosophies of beauty, especially as they apply in criticism of the fine arts. The problem of the relative and the absolute in judgments of taste. Reading in aesthetics from such writers as Plato, Aristotle, Longinus, Kant, and Croce. Mrs. Kelty. *3 h. c.*

310G. *Making of the Modern Mind.* The philosophic, religious, scientific, political, and social developments out of which our present patterns of thought have arisen. Dr. Azneer. *3 h. c.*

315G. *Ancient Religions.* A comparative introduction to the history of religion, with reference to the religions of primitive man, and the religions of Egypt, Mesopotamia, Persia, Greece, and Rome. Listed also as Philosophy and Religion 315P. Dr. Riley. *3 h. c.*

316G. *Living Oriental Religions.* A continuation of Philosophy and Religion 315G, historically comparing the religions of China, Japan, India, and the Near East. Listed also as Philosophy and Religion 316P. Dr. Riley. *3 h. c.*

329G. *Contemporary Philosophy.* Whitehead's philosophy of organism, the various schools of existentialism, logical positivism, and the current philosophies of language. Consideration of contemporary movements to which these systems have given rise in particular areas of philosophy. Dr. Riley. *3 h. c.*

330G. *Philosophical Classics.* Reading and discussion of some of the great documents of philosophy: Plato's *Republic,* Aristotle's *Nicomachean Ethics,* Descartes' *Meditations,* Kant's *Critique of Pure Reason,* and James's *Essays,* or alternative selections of comparable significance. Mrs. Kelty. *3 h. c.*

331G. *Philosophy in America.* History of philosophic ideas in this country and an introduction to its intellectual history. Relation of American intellectual currents to their background in the history of philosophy. Dr. W. Miner. *3 h. c.*

333G. *Philosophy of Education.* This course explores the foundation of modern education in the several schools of educational thought, and considers theory and practice, indoctrination and propaganda, vocationalism and culture, teaching controversial issues, and the relation of education to social planning. Prereq.: junior or senior standing. Listed also as Education 333. Rabbi Azneer. *3 h. c.*

334G. *Philosophy of History.* A developmental inquiry into the views of history held by Greek, Roman, Christian, and modern scientific historians. Prereq.: History 105 or 106, or consent of teacher. *3 h. c.*

409G. *History of Social Philosophy.* Identical with Sociology 409. Mrs. Botty. *3 h. c.*

431G. *The Psycho-Social Dynamics of Religion.* An objective examination of religious institutions and practices in relation to the human problems to which they correspond. A comparative appraisal of their effectiveness in meeting the psychic and environmental needs of their adherents. Reasons for their success or failure, in terms of depth psychology, sociology, and anthropology. Several of the classic religions are studied. Prereq.: grade of C or better in any one of the following: Philosophy and Religion 306G or 315G, Psychology 302, or Sociology 204; and consent of teacher. Listed also as Philosophy and Religion 431P. Dr. Riley. *3 h. c.*

432G. *The Psycho-Social Dynamics of Religion.* The same considerations as in Philosophy and Religion 431G applied to present-day religious cults. Prereq.: grade of C or better in any one of the following: Philosophy and Religion 306G or 315G, Psychology 302, or Sociology 204; and consent of teacher. Listed also as Philosophy and Religion 432P, Psychology 432 and Sociology 432. Dr. Riley. *3 h. c.*

SECTION I-S. NEO-SCHOLASTIC PHILOSOPHY

The approach to this section is that of Moderate Realism as presented by Aristotle and the Scholastics, and developed by the Neo-Scholastics in modern times.

A major in this section consists of thirty hours, including 322S, 323S, 324S, 325S, 326S, 327S, 328S, and 329S.

203S. *Introduction to Philosophy.* The nature of philosophy, and its relation to science, art, and religion. Examination of the mind-body problem, freedom and determinism, the nature and validity of knowledge, and some bases for value judgment, with the implications of all these for free ethical choice. Staff. *3 h. c.*

220S. *Formal Logic.* The laws that lie behind all our thought processes. The nature of concept and the divisions of its expression, the

term. Judgment and the valid forms of immediate inference. Reasoning and its laws; formal and material fallacies; inductive reasoning. Father Lucas, Father Lang. *3 h. c.*

301S. *History of Philosophy.* The development of philosophic thought from early Greek times through the Middle Ages. Father Lucas or Father Lang. *3 h. c.*

302S. *History of Modern Philosophy.* Continuation of Philosophy and Religion 301S from the end of the Middle Ages to the present. Prereq.: Philosophy and Religion 203S. Father Lucas, Father Lang. *3 h. c.*

304S. *Philosophy of Religion.* The meaning of religion, and its relation to other aspects of culture. The function and evaluation of religious experience. The existence and nature of God; the problem of evil; the soul, with the problems of freedom and immortality. Prayer. Current trends toward skepticism and faith. Father Lucas. *3 h. c.*

309S. *Aesthetics.* Classical and modern philosophies of beauty, especially as they apply in criticism of the fine arts. The problem of the relative and the absolute in judgments of taste. Reading in aesthetics from such writers at Plato, Aristotle, Longinus, Kant, and Croce. *3 h. c.*

322S. *Philosophy of Man.* A discussion of the sentient, emotional, and rational life of man. Life: mechanism versus vitalism. Sensation and its philosophical explanations. Rational life and its principles. Freedom of the will versus determinism. The human soul, and its origin and destiny. A philosophical discussion of evolution. Father Lucas, Father Lang, Mr. Murphy. *3 h. c.*

323S. *Theories of Knowledge.* The epistemological problem and its attempted solution. The position of the skeptic, the pragmatist, the sensist, the idealist; the moderate realists' solution. Truth and certitude: their nature, sources, and ultimate criteria. Father Lucas, Father Lang. *3 h. c.*

324S. *Philosophy of Being.* The metaphysical concept of abstract being. Essence and existence; act and potency; substance and accident; the possibles. Cause and causality; the meaning and nature of relations. Father Lucas, Father Lang. *3 h. c.*

325S. *Metaphysics of Matter.* A philosophical consideration of the nature and constitution of matter. Hylomorphism; the origin of the physical universe; physical laws; miracles; space-time concepts. Father Lucas. *3 h. c.*

326S. *Philosophy of God.* Proofs for the existence of God; the nature of God and His attributes; God's knowledge and its media; the *scientia media;* providence and the problem of evil; miracles. Staff. *3 h. c.*

327S. *Moral Conduct: Basic Principles.* The definition of moral good and moral evil established by positive proof. The nature and true norm of morality; false norms. The "Eternal and Natural Laws"; obligation and sanction of the "Natural Law"; conscience; the nature of rights and duties; the existence of natural rights. Staff. *3 h. c.*

328S. *Moral Conduct: Specific Applications.* The application of the "Natural Law" to human activities. Man's duties to God; the natural right to property; rights and duties of conjugal society; marriage and divorce. Industrial ethics; the solution of the communist; wages, strikes, labor unions. The nature of civil society. Father Lucas, Father Lang. *3 h. c.*

329S. *Contemporary Philosophy.* A survey and evaluation of the major philosophic trends from Bergson to the present time: Neo-Thomism, vitalism, phenomenology, existentialism, logical empiricism, pragmatism, etc. Prereq.: Philosophy and Religion 203S. *3 h. c.*

333S. *Philosophy of Education.* This course explores the foundation of modern education in the several schools of educational thought, and con-

siders theory and practice, indoctrination and propaganda, vocationalism and culture, teaching controversial issues, and the relation of education to social planning. Prereq.: junior or senior standing. Listed also as Education 333. *3 h. c.*

409S. *History of Social Philosophy.* Identical with Sociology 409. Mrs. Botty. *3 h. c.*

SECTION II. RELIGION

Within the Religion section of this department the offerings serve three purposes: (1) biblical courses examine the foundations of the Judaeo-Christian tradition in the light of contemporary scholarship; (2) doctrinal and historical courses give sympathetic expression to the various points of view within this tradition; and (3) courses with a more general orientation introduce the student to religions outside our own tradition, and undertake the objective analysis of religious experience on both personal and institutional levels.

Some of the courses in this last group are also listed under *Philosophy, General*, and cross-listed with other appropriate departments in the University.

A major in religion, for the student desiring to prepare himself for social work, church school work, weekday religious education, or related professional activity is also available. It consists of Philosophy and Religion 204G, 208P, 303P, 306P, 315P, and 432P as requirements, plus twelve additional hours in the department. These additional hours may be chosen from Philosophy and Religion 207P, 212P, 213P, 230P, 304G, 305G, 308J-P, and 318O.

The approach to these courses is indicated by the following letters after the course numbers: C, Catholic; J, Jewish; O, Orthodox; P, Protestant.

Lower Division Courses

201C-J-O-P. *Contemporary Religion and its Backgrounds.* An exposition of Judaism, Roman Catholicism, and Protestantism: their beliefs, rituals, and usage; their origins and historical development; and their approaches to the problems of man in modern society. *3 h. c.*

207P. *The Christian Ethic.* A study of the biblical foundations for Christian decisions in matters of self and society, marriage and family, economic life, racial relations, the state, war, peace, and international order and culture. Mr. Belsan. *3 h. c.*

208P. *The Beginnings of Christianity.* An introductory review of Christian origins, including the cultural and historical backgrounds of the movement, the career and teaching of Jesus, and the birth and growth of the Church. The relation of these factors to the literature of the New Testament. Dr. Riley, Mr. Eminhizer. *3 h. c.*

212C. *Church History I.* The history of the Christian Church from its origin to the Reformation. Father Lucas, Father Lang. *3 h. c.*

212P. *Church History I.* The history of the Christian Church from its origin to the Reformation. Mr. Eminhizer *3 h. c.*

213C. *Church History II.* A continuation of Philosophy and Religion 212C. The rise and development of Protestantism. The counter-reformation. The major Protestant denominations, and the influences operative in their origins. Present tendencies in world Christianity. Father Lucas, Father Lang. *3 h. c.*

213P. *Church History II.* A continuation of Philosophy and Religion 212P. The rise and development of Protestantism. The counter-reforma-

tion. The major Protestant denominations, and the influences operative in their origins. Present tendencies in world Christianity. Mr. Eminhizer. *3 h. c.*

222C. *Christian Apologetics.* The relation of reason and revelation. The natural and supernatural orders. Revelation and mysteries. The possibility and necessity of revelation. Miracles and prophecies. The authenticity and historicity of the New Testament. Christ, His miracles and prophecies. Father Lucas, Father Lang, Mr. Murphy. *3 h. c.*

230P. *Introduction to Biblical Literature.* A survey of the literature of the Old and New Testaments, with attention to the authorship and purposes of the various books, the history of their compilation into the present canon, their structure and style, and the applicability of their teachings to the problems of today. Mr. Eminhizer, Mr. Belsan. *3 h. c.*

Upper Division Courses

303P. *Old Testament.* Reading of the Old Testament, with attention to the nature of the Bible; the authorship, origin, and meaning of the various books; the development of religious and ethical ideas throughout the Old Testament period; the significance of the law and of the prophets in Hebrew life; and the contribution of the Hebrews to the life of mankind. Dr. Riley. *3 h. c.*

306P. *Psychology of Religion.* The analysis of religious experience. An investigation of the psychological processes, conscious and unconscious, which produce, accompany, and are set in motion by the various personal experiences called religious. Prereq.: Psychology 201. Listed also as Philosophy and Religion 306G and Psychology 303. Dr. Riley. *3 h. c.*

308J-P. *Prophetic Religion.* A social and psychological analysis of the prophetic mentality; the differences between the prophetic approach to religion and that of the priest; an analysis of great prophetic books with a view to the sociological and psychological factors involved; an attempt to delineate the essential elements in prophecy. Dr. Azneer. *3 h. c.*

315P. *Ancient Religions.* A comparative introduction to the history of religion, with reference to the religions of primitive man, and the religions of Egypt, Mesopotamia, Persia, Greece, and Rome. Listed also as Philosophy and Religion 315G. Dr. Riley. *3 h. c.*

316P. *Living Oriental Religions.* A continuation of Philosophy and Religion 315P, historically comparing the religions of China, Japan, India, and the Near East. Listed also as Philosophy and Religion 316G. Dr. Riley. *3 h. c.*

318O. *History of Eastern Christian Thought.* An introductory study of the history, theology, polity, worship, and morality of the Eastern Orthodox Church. Comparison with corresponding Western Christian thought. Father Vansuch. *3 h. c.*

431P. *The Psycho-Social Dynamics of Religion.* An objective examination of religious institutions and practices in relation to the human problems to which they correspond. A comparative appraisal of their effectiveness in meeting the psychic and environmental needs of their adherents. Reasons for their success or failure, in terms of depth psychology, sociology, and anthropology. Several of the classic religions are studied. Prereq.: grade of C or better in any one of the following: Philosophy and Religion 315P, 315G, 306P, 306G, Psychology 302, Sociology 204; and consent of teacher. Listed also as Philosophy and Religion 431G. Dr. Riley. *3 h. c.*

432P. *The Psycho-Social Dynamics of Religion.* The same considerations as in Philosophy and Religion 431P, applied to present-day religious cults. Prereq.: grade of C or better in any one of the following: Philosophy and Religion 315P, 315G, 306P, 306G, Psychology 302, Sociology 204; and consent of teacher. Listed also as Philosophy and Religion 432G, Psychology 432, and Sociology 432. Dr. Riley. *3 h. c.*

Physical Education

See *Health Education and Physical Education.*

Physics

Associate Professors Ellis (acting chairman) and Clark; Instructors Fisher and Young; Mr. Dooley, Mr. Gilboy and Mr. Klimko; staff.

Physics courses are organized with the following aims: (1) to acquaint the non-specializing student with scientific methods and with the place of physics in the modern world; (2) to provide basic training for engineering and pre-medical students; (3) to provide well-rounded training in physics for those needing it for secondary school teaching, industry, or graduate study.

Following the course descriptions below are the curriculums required for the degrees of Bachelor of Arts and Bachelor of Science with the major in physics. A student desiring to teach physics in the public schools should consult the Dean of the School of Education.

Students whose preparation for college physics is incomplete at the time of their admission to the University may meet the high school requirement by taking Natural Science 121.

Lower Division Courses

101-102. *Fundamentals of Physics.* The elementary laws of physics, illustrated through elementary mechanics, sound, light, heat, and electricity. Not open to mathematics or physics majors or to engineering students. Prereq.: one year of high school physics, or Natural Science 121; prerequisite or concurrent; Mathematics 151. Physics 101L-102L is taken concurrently. 3 + 3 *h. c.*

101L-102L. *Fundamentals of Physics Laboratory.* Two hours a week; taken concurrently with Physics 101-102. Fee: $10.00 each semester. 1 + 1 *h. c.*

201-202. *General Physics.* A two-semester sequence comprising the study of mechanics, heat, wave, and oscillatory phenomena including optics and sound, electricity, magnetism, and selected topics in modern physics. Six hours of lecture and two hours of recitation a week. Prereq.: one year of high school physics, or Natural Science 121. Prerequisite or concurrent: Mathematics 251. Physics 201L-202L is taken concurrently (except by engineering students). 4 + 4 *h. c.*

201L-202L. *General Physics Laboratory.* Three hours a week; taken concurrently with Physics 201. Not required of engineering students. Fee: $10.00 each semester. 1 + 1 *h. c.*

208. *Sound.* The production of sound by means of vibrating strings, vibrating air columns, and vibrating plates. Simple harmonic motion, and the representation of complex sound waves as a summation of pure sine waves. The principles of reflection, refraction, interference, and resonance applied to sound waves. Sound and hearing. Application of the principles of sound to musical instruments. The reproduction and recording of sound waves with a study of room acoustics. Not applicable toward a major in physics. 3 *h. c.*

Upper Division Courses

301. *Classical Mechanics.* Elements of vector algebra and vector calculus. Statics and dynamics of a particle and of a rigid body. Inertial and accelerated co-ordinate systems. Prereq.: Physics 202; prerequisite or concurrent: Mathematics 309. *4 h. c.*

304. *Introduction to Modern Physics.* A presentation of the basic principles of the special relativity and quantum theories, of atomic and nuclear structure, and of a few topics in molecular and solid state physics. Prereq.: Physics 202. *3 h. c.*

322. *Physical Optics and Advanced Light.* Elementary theory of thick and thin lenses, interference, diffraction, and polarization phenomena: wave surfaces, resolving power of optical instruments. Prereq.: Physics 202. *3 h. c.*

322L. *Physical Optics and Advanced Light Laboratory.* Experiments relating to the principles studied in Physics 322, with the emphasis on physical optics: wave propagation, interference, diffraction, refraction, dispersion, polarization, radiation, and spectroscopic analysis of line spectra. Two hours a week; taken concurrently with Physics 322. Fee: $10.00. *1 h. c.*

401-402. *Thesis.* The student investigates a subject, selected by either the student or the chairman of the Department of Physics, and submits a written report, of at least 2,500 words, in three bound copies according to specifications available to him on request. For credit, the thesis must be accepted by the chairman of the department. Prereq.: senior standing. Estimated thesis expense: $50-$60. *2 + 2 h. c.*

403. *Electricity and Magnetism.* Static electric fields. Properties of dielectric materials and of conductors. Direct currents. Vector methods are used extensively. Prereq.: Physics 202 and Mathematics 309. *3 h. c.*

404. *Electricity and Magnetism.* Static magnetic fields, time-dependent electric fields, magnetic fields, and currents. Magnetic materials. Maxwell's equations. Electromagnetic radiation. Prereq.: Physics 403. *3 h. c.*

405, 406. *Upper Division Physics Laboratory.* An advanced undergraduate physics laboratory, designed to supplement the junior-senior lecture courses required of students majoring in physics. The experiments are selected from the fields of mechanics, heat, optics, electricity and magnetism, atomic physics, and nuclear physics. Six hours of laboratory a week. Prereq.: Physics 301 and 304. Fee: $10.00 each semester. *2 + 2 h. c.*

410. *Introduction to Quantum Mechanics.* The postulates of wave mechanics. The Schroedinger wave equation in one, two, and three dimensions. The solution of elementary problems in quantum theory. Prereq.: Physics 301 and 304, and Mathematics 310. *3 h. c.*

413. *Thermodynamics.* Identical with Chemistry 413. *3 h. c.*

424. *History of Physics.* The history of physics from early times, and the lives of the great physicists. Prereq.: consent of the chairman of the department. *3 h. c.*

426. *Elements of Nuclear Physics.* A study of the sub-atomic particles of matter essential for the understanding of modern concepts of atomic structure, covering the electron, the electric discharge, cathode rays, isotopes, natural radiation activities, atomic nuclei, and artificial disintegration. Prereq.: Physics 202; prerequisite or concurrent: Mathematics 309. *3 h. c.*

426L. *Nuclear Physics Laboratory I.* Basic experiments in nuclear physics designed to supplement the text material concerning nuclear structure and nuclear reactions. Three hours of laboratory each week. Taken concurrently with Physics 426. Fee: $10.00. *1 h. c.*

Required Curriculum for the Degree of Bachelor of Science* with the Major in Physics and a Minor in Mathematics.

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Chem. 123-124 General Chemistry	8
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus	5
Soc. Sci. 101 & 102 Introduction to the Social Sciences	6
H. E. & P. E. 109 Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Comm. 107 Basic Course III	3
**Foreign language	6
Hist. 201 & 202 The United States	6
Math. 251,252 Analytic Geometry and Calculus	10
Physics 201-201L & 202-202L General Physics	10
H. E. & P. E. activity courses	1
	36

Third Year	Hrs.
Math. 309 Ordinary Differential Equations	3
Math 310 Partial Differential Equations	3
Physics 301 Classical Mechanics	4
Physics 304 Introduction to Modern Physics	3
Physics 322 & 322L Physical Optics and Advanced Light	4
Physics 413 Thermodynamics	3
†Electives	12
	32

Fourth Year	Hrs.
Philosophy and Religion elective or Humanities 401 or 402	3
Physics 403 & 404 Electricity and Magnetism	6
Physics 405 & 406 Upper Division Physics Laboratory	4
Physics 410 Quantum Mechanics	3
Physics 426-426L Elements of Nuclear Physics	4
Engr. 472 & 472L Principles of Nuclear Reactors	4
†Electives	10
	34

*The curriculum for the Bachelor of Arts degree with the major in physics is outlined for the student by an adviser in the Department of Physics. The courses for the freshman and sophomore years for either degree are identical. Semester-by-semester versions of the curriculum for either the Bachelor of Arts or Bachelor of Science degree are available at the office of the Department of Physics.

Foreign language requirements are explained under **Requirements for the Degrees and **Proficiency in a Foreign Language**, at the beginning of this section.

†22 hours of electives are listed in this curriculum. The student should plan the selection of these elective courses in his sophomore year with his adviser in the Department of Physics.

Police Science

Instructor Foster (supervisor)

Police Science is a basic two-year program designed primarily to provide occupational competency in the law enforcement field. The curriculum is not designed to train for any specialty but to provide a broad foundation which will enable the student to enter any of the several fields of law enforcement. It leads to a certificate in Police Science.

Students enrolling in the program must meet the following requirements:

1. The regular admission requirements of the University (see *Admission* in the General Requirements and Regulations section). Applicants who do not have a high school diploma will be accepted as "special students"; they will be permitted to enroll in courses but will not receive college credit for them.

2. Excellent physical condition, free from any physical or emotional condition that might adversely affect acceptance as a law enforcement agent. Weight should be in proportion to height. Very few municipal and county law enforcement agencies will accept applicants who are less than 5'9" in height.

3. Verification of excellent moral character and absence of criminal record. Men who are not as yet employed as law enforcement agents must be "sponsored" by a law enforcement agency, usually the police department where they intend to seek employment.

Curriculum Leading to a Certificate in Police Science

First Semester	Hrs.
Comm. 105 Basic Course I	3
Soc. Sc. 101 Introduction to the Social Sciences	3
Police 101 Introduction to Law Enforcement	3
Police 102 Criminal Law	3
Police 103 Patrol & Field Operations	3
	15

Second Semester	Hrs.
Comm. 106 Basic Course II	3
Soc. Sc. 102 Introduction to the Social Sciences	3
Police 201 Traffic Law & Control	3
Police 202 Crime Investigation	3
Police 203 Police Weapons, Self Defense & First Aid	3
	15

Third Semester	Hrs.
Pol. Sc. 312 Municipal Government & Administration	3
Soc. 205 Social Pathology	3
Police 305 Social and Psychological Causes of Crime	3
Police 302 Criminalistics	3
Police 303 Special Police Problems	3
	15

Fourth Semester	Hrs.
Police 311 Juvenile Delinquency	3
Police 316 Corrections	3
Police 301 Evidence & Testimony	3
Police 304 Interrogation & the Detection of Deception	3
Police 306 Municipal Police Administration	3
	15

Lower Division Courses

101. *Introduction to Law Enforcement.* Designed for the student who is considering a police career or who has recently entered the law enforcement field. Includes a study of the history of civil police powers, police department administration, laws affecting police powers and functions, professional ethics of the policeman. 3 *h. c.*

102. *Criminal Law.* Elements of criminal law; law of arrest, search and seizure, warrants, extradition; rights and duties of law enforcement. 3 *h. c.*

103. *Patrol and Field Operations.* Police logistics and surveillance, with emphasis on techniques of crime detection. 3 *h. c.*

201. *Traffic Law and Control.* The Ohio Traffic Code, traffic control, the use of modern traffic enforcement procedures, radar, selective enforcement, drunkometer, accident investigation. 3 *h. c.*

202. *Crime Investigation.* A study of police conduct at the crime scene; interview and interrogation of witnesses and suspects, the use of informants, and the techniques of surveillance; the special techniques employed in presentation and development of the police case in court. 3 *h. c.*

203. *Police Weapons, Self-Defense and First Aid.* Proper use of weapons, training in judo and the art of self-defense, and the administration of first aid. 3 *h. c.*

Upper Division Courses

301. *Evidence and Testimony.* Designed to acquaint the student with the fundamental legal problems of criminal prosecution; places particular emphasis upon the law affecting the preparation of case material, the presentation of evidence at the trial, tests of admissibility, and the weight and value of types of evidence. Prereq.: Police Science 102. 3 *h. c.*

302. *Criminalistics and Crime Scene Techniques.* Scientific aids available to the police officer, he police laboraory, preserving physical evidence, the use of fingerprints. Prereq.: Police Science 202. 3 *h. c.*

303. *Special Police Problems.* Police procedures in riot control, sex offenders, narcotics, emotionally disturbed persons, intoxication, domestic problems. 3 *h. c.*

304. *Interrogation and the Detection of Deception.* Techniques of interrogation, preparation of reports and statements, and the use of the polygraph. 3 *h. c.*

305. *Social and Psychological Causes of Crime.* A comprehensive study of the social and psychological factors that influence the criminal act. 3 *h. c.*

306. *Municipal Police Administration.* Detailed examination of police organization and management; tactics and budgeting; supervision; record systems; discipline, promotions, communications, public relations. 3 *h. c.*

311. *Juvenile Delinquency.* Identical with Sociology 311. 3 *h. c.*

315. *Criminology.* Identical with Sociology 315. 3 *h. c.*

316. *Corrections.* Identical with Sociology 316. 3 *h. c.*

Political Science

Professor Behen; Associate Professors Boyer (chairman), Skardon, and Sterenberg; Assistant Professor Rees; Instructor Esterly; Mr. Jackson.

For a major in political science the following courses must be completed: Social Science 101 and 102, History 201 and 202, and twenty-four hours in political science, of which six must be in American government and six in international relations and/or comparative government.

Related minors in history, economics, and sociology are valuable to the political science major preparing for graduate study in this field, or for a career in journalism, in law, in public administration, or in the federal civil service. The student who plans to do graduate study in political science or who plans to apply to the foreign service should achieve proficiency in at least one modern foreign language.

Lower Division Courses

201. *Introduction to American National Government and Politics.* A survey of the structure and functioning of American national government, with emphasis on examination of the evolving theory and practice of federal and of executive-legislative organization and behavior. Prereq.: Social Science 102. Esterly, Rees. 3 *h. c.*

202. *American State and Local Government.* Government and administration in the states and in local units of government, with emphasis on intergovernmental relations and the role of the citizen. Prereq.: Social Science 102. Boyer, Jackson. 3 *h. c.*

Upper Division Courses

304. *International Politics.* A systematic analysis of the principles underlying politics among nations and a study of their application to present international problems. Prereq.: History 106 or Political Science 201 or consent of teacher. Sterenberg. 3 *h. c.*

305. *Foreign Policies of the Great Powers.* A comparative study of the governmental machinery for formulation and execution of foreign policy, and a survey of the foreign policies of the great powers with attention to current developments. Prereq.: History 106 or Political Science 201 or consent of teacher. Sterenberg. 3 *h. c.*

306. *International Law and Government.* Principles of international law as they have developed through custom and usage, international agree-

ment, and judicial decisions; international organization with emphasis on the United Nations in action. Prereq.: Political Science 201 or History 106. Sterenberg. *3 h. c.*

307. *American Political Parties.* A descriptive analysis of the role of political parties in a democratic society, with emphasis on development of a theory of party and an examination of the history and characteristics of the American party system. Attention is given to a quantitatively structured description of the national electorate. Prereq.: History 201 and 202. Political Science 201. Esterly, Jackson. *3 h. c.*

308. *Public Administration.* Fundamental concepts of public administration, with emphasis on the role of public administration in American government; preliminary examination of problems of administrative organization, conduct of regulatory and management functions. Prereq.: Political Science 201. Boyer. *3 h. c.*

309, 310. *Constitutional History of the United States.* The formation, amendment, and interpretation of the Constitution of the United States. Of special interest to pre-law students. Prereq.: Social Science 101 and 102. Prerequisite or concurrent: History 201 and 202. Political Science 309 is prerequisite to 310. Listed also as History 309, 310. Rees. *3 + 3 h. c.*

312. *Municipal Government and Administration.* The principles and forms of city government in the United States. Problems of the modern city: home rule, public utilities, administrative organization, finance, city planning, public health and recreation, school systems. Prereq.: Social Science 101 and 102. Boyer. *3 h. c.*

320. *The American Executive.* An examination of the role of the chief executive officer within the governmental framework. The offices of mayor and governor are treated, but primary emphasis is on critical evaluation of the American presidency. Prereq.: Political Science 201. Esterly. *3 h. c.*

340. *Comparative Government.* The structure and functioning of the principal types of national governments, with emphasis on the governments of the western European nations and Soviet Russia. Prereq.: one of the following: Political Science 201, History 201, 202, 309, 310, or Economics 402. Boyer, Sterenberg. *3 h. c.*

350. *The Government of the Soviet Union.* The ideology, institutions, and policies of the Soviet Communist system, as a background for understanding the Soviet totalitarian challenge to American democracy. Prereq.: History 201 and 202. Sterenberg. *3 h. c.*

390. *Diplomatic History of the United States.* Identical with History 390. Skardon. *3 h. c.*

402. *Comparative Economic Systems.* Identical with Economics 402. Sterenberg. *3 h. c.*

405, 406. *Development of Political Thought.* Political theories from antiquity to modern times, with emphasis on their practical applications and the resulting relationship of individual and state. Prereq.: one of the following: Political Science 201, History 105 or 106, and junior standing. Behen. *3 + 3 h. c.*

Pre-Forestry

Associate Professor Beede (supervisor)

Youngstown University offers a program in forestry in cooperation with the School of Forestry at Duke University. In completing this coordinated five-year course of study, the student earns the Bachelor of Science degree from Youngstown University and the professional degree, Master of Forestry, from Duke University.

The student who pursues this course of study spends his first three years in residence at Youngstown University, where he gets training in the liberal arts and in the sciences basic to forestry. He spends the last two years and the summer following his junior year at the Duke School of Forestry, in professional studies.

The candidate for this program enrolls in the pre-forestry curriculum at the beginning of his freshman year. At the end of the first semester of his junior year he will be recommended for admission to Duke University if his cumulative point index is at least 3.0. His recommendation will be accompanied by his formal application for admission and a transcript of his academic record; no application for admission to Duke University need be made prior to that time.

The following course of study indicates the nature of this program:

Pre-Professional Curriculum at Youngstown University

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry & Calculus I	5
Biol. 103 General Biology	3
Soc. Sc. 101 & 102 Introduction to the Social Sciences	6
*Foreign language	6
H. E. & P. E. activity courses	1
H. E. & P. E. 109M Health Education	2
Orientation	1
	35

Second Year	Hrs.
Chem. 105 & 106, Fundamentals of Chemistry	8
Biol. 223-224 General Botony	6
Hist. 201 & 202 The United States	6
Comm. 107 Basic Course III	3
Psych. 201 General Psychology	3
Econ. 202 Principles of Economics	3
*Foreign language	6
H. E. & P. E. activity courses	1
	36

Third Year	Hrs.
Accntg. 201-202 Elementary Accounting I-II	6
Physics 101-101 & 101L-102L	8
Biol. 227-228 General Zoology	6
Econ. 305 Economic & Social Statistics I	3
Econ. 319 Economics of American Industry	3
**Electives	6
	32

Professional Curriculum at Duke University†

Summer Session	Hrs.
CE110 Plane Surveying	3
F.150 Forest Surveying and Aerial Photo Interpretation	3
F.151 Forest Mensuration	3
F.243 Silvics	3
	12

First Year	Hrs.
F.201 Forest-tree Physiology	3
F.212 Harvesting and Utilization of Forests	3
F.230 Forest Entomology	3
F.241 Dendorlogy	3
F.261 Forest Soils	3
F.270 Forest Economics	3
F.244 Theory and Practice of Silviculaure	3
F.218 Forest Products Field Seminar	1
F.223 Forest Pathology	3
F.276 Forest Policy	2
F.250 Forest Biometry	3
F.290 Wood Anatomy	3
F.281 Forest Management	3
	36

*Foreign language requirements are explained under **Requirements for the Degrees and Proficiency in a Foreign Language**, at the beginning of this section.

**Suggested electives: Biology 302, 303, 304, 319, 321; Economics 203, 304, 306.

†For a description of the following courses, consult the current **Bulletin of the School of Forestry**, of Duke University.

Second Year

During the latter part of the second semester of the first year the student will designate the subject matter field he wishes to pursue in the second year. Students who successfully complete the work of the first year will be assigned to a faculty advisory committee, who in consultation with the student, will develop his study plan for the second year. Qualified students may concentrate on the following areas:

Forest management
Forest business management
Silvics and silviculture
Forest influences
Forest economics
Forest-tree physiology
Mensuration and biometry
Forest soils
Wood anatomy
Physical and chemical properties of wood
Forest entomology
Forest pathology
Forest harvesting and utilization

Pre-Law Study

Following is a curriculum recommended for the student who expects to enter a school of law. In addition, he should consult the Chairman of the Department of Political Science.

Suggested Pre-Law Curriculum for the Degree of Bachelor of Arts

The major may be a combined major of 45 semester hours in social studies or a major of 30 semester hours in some department of the College of Arts and Sciences. This may vary with the requirements of the law school to which the student seeks entrance.

The University will accept a maximum of 25 credit hours of study in an approved law school toward the completion of the following curriculum *in absentia*, if the last 30 hours prior to these are taken at Youngstown University. The student is cautioned, however, that few law schools now accept candidates without the bachelor's degree.

First Year	Hrs.
Acctg. 201-202 & 201L-202L Elementry Accounting & E. A. Laboratory or Hist. 105, 106 Western Civilization	6
*Biology or chemistry	8
Comm. 105-106 Basic Course I-II	6
**Foreign language (or elective)	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences	6
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Comm. 107 Basic Course III	3
**Foreign language (or elective)	6
Hist. 201 & 202 The United States	6
Pol. Sc. 201 & 202 American Government or Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Psych. 201 General Psychology	3
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Electives	4
	31

Third Year	Hrs.
Engl. 200, 203, 204, 205, 206 or 275, or or Hum. 201	3
Hist. 306, 307 Constitutional History of England	6
History, political science, sociology, economics, accounting (in any selection or combination)	12
Mathematics or science	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Elective (Upper Division)	3
	30

Fourth Year	Hrs.
Electives (Upper Division)	30
	30

*Eight hours of biology cannot be completed in two semesters; the student electing it must rearrange this curriculum slightly, and should consult his adviser.

Foreign language requirements are explained under **Requirements for the Degrees and Proficiency in a Foreign Language, at the beginning of this section.

Pre-Medical Study and Allied Fields

Following are curriculums recommended for students planning to enter schools of medicine, nursing, and allied fields. The student following

one of these curriculums should consult with his adviser, who will be a member of the department indicated below for each field.

Suggested Pre-Medical and Pre-Veterinary Curriculum for the Degree of Bachelor of Arts

The major is a combined major of at least 45 hours in biology, chemistry, and physics, varying with the requirements of the medical school to which entrance is sought. *Advisement is provided by the Department of Biology.*

The University will accept a maximum of 25 credit hours of study in an approved medical school toward the completion of such a pre-medical curriculum *in absentia*, if the last 30 hours to these are taken at Youngstown University. See also *Combined Liberal Arts-Professional Courses: Medical Students*, at the beginning of this section.

First Semester	Hrs.
Chem. 123 General Chemistry	4
Math. 151 Introduction to Mathematical Analysis	5
Comm. 105 Basic Course I	3
Soc. Sci. 101 Introduction to the Social Sciences I	3
H. E. & P. E. activity courses	½
Orientation 100	1
	16½

Second Semester	Hrs.
Chem. 124 General Chemistry	4
Biol. 103 General Biology	3
Comm. 106 Basic Course II	3
Soc. Sci. 102 Introduction to the Social Sciences II	3
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	½
	15½

Third Semester	Hrs.
Chem. 205 Qualitative Analysis	3
Biol. 227 General Zoology	3
Comm. 107 Basic Course III	3
Physics 101 & 101L Fundamentals of Physics	4
*Foreign language	3
H. E. & P. E. activity courses	½
	16½

Fourth Semester	Hrs.
Biol. 228 General Zoology	3
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
Physics 102 & 102L Fundamentals of Physics	4
*Foreign language	3
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	½
	16½

Fifth Semester	Hrs.
Chem. 221 Organic Chemistry	4
Biol. 308 Embryology	4
*Foreign language or Upper Division elective	3
Philosophy and Religion elective, or Hum. 401 or 402	3
Hist. 201 The United States	3
	17

Sixth Semester	Hrs.
Chem. 222 Organic Chemistry	4
Biol 309 Vertebrate Anatomy I	3
*Foreign language or Upper Division elective	3
Hist. 202 The United States	3
Upper Division elective	3
	16

Seventh Semester	Hrs.
Biol. 310 Vertebrate Anatomy II	3
**Chem. 305 Quantitative Analysis	3
Upper Division electives	9
	15

Eighth Semester	Hrs.
Biol. 321 Genetics	3
†Biol. 313 Histology	3
Upper Division electives	8-11
	14-17

*Foreign language requirements are explained under **Requirements for the Degrees and Proficiency in a Foreign Language**, at the beginning of this section.

**Chemistry 305 is strongly recommended. Quantitative Analysis may be a requirement for some medical schools; the student should consult the catalog of the school he wants to enter.

†Biology 313 is not required or recommended by medical schools. It may be used as an Upper Division elective.

Pre-Dentistry, Pre-Pharmacy, Pre-Chiropody, and Pre-Osteopathy

The two-year curriculums suggested for these purposes are similar to the first two years of the pre-medical curriculum. *For details, consult the chairman of the Department of Biology.*

Nursing

Advisement for the pre-nursing and registered nurse programs is provided by the Department of Sociology.

Pre-Nursing.

For the student wishing two years of college as preparation for entering a nursing school, the following curriculum is suggested. These courses may be counted toward a bachelor's degree if the student wishes to resume college study after getting the nurse's certificate (see *For the Registered Nurse*, below.)

First Year	Hrs.
Biol. 103 General Biology	3
Biol. 227 General Zoology	3
Chem. 105, 106 Fundamentals of Chemistry	8
Comm. 105-106 Basic Course I-II	6
Soc. Sci. 101, 102 Introduction to the Social Sciences I, II	6
H. E. & P. E. 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	30

Second Year	Hrs.
Biol. 228 General Zoology	3
Biol. 130 The Human Body	3
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
Hist. 201 and 202 The United States	6
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
*Electives	10
	32

*Biology 250, Mathematics 151, and Chemistry 205 are suggested.

For the Registered Nurse.

Program Leading to the Degree of Bachelor of Science or the Degree of Bachelor of Arts

A registered nurse is allowed credit, on the basis of standard evaluations, for study at an accredited nursing school. A balance of 90 or more semester hours must be completed in college, with all other requirements for either (1) the degree of Bachelor of Science, except those in foreign language and in health education and physical education, or (2) the degree of Bachelor of Arts, except those in health education and physical education. See also *Requirements for the Degrees*, at the beginning of this section.

Public School Nursing.

For the curriculum leading to the degree of Bachelor of Science in Education for public school nurses, consult the Dean of the School of Education.

Medical Technology

The degree of Bachelor of Science with a major in medical technology is granted to those who have completed the requirements for the Bachelor of Science degree with the exception of the foreign language requirement, which is waived. 30 hours of the required 136 are granted for the technical training which must be taken in a medical technology laboratory accredited by the Council on Medical Education and Hospitals of the American Medical Association. The remaining 106 hours are in biology, chemistry, mathematics, physics, and non-science courses, as specified below. Proof of successful passing of the Registry Examination is required before the degree is granted. *Advisement is provided by the Department of Chemistry.*

Students interested in medical technology frequently prefer to obtain degrees with majors in biology or chemistry and to obtain their technology training afterward. Such students follow a regular curriculum as advised by their major department.

Required Curriculum Leading to the Degree of Bachelor of Science with a Major in Medical Technology

First Year

First Semester	Hrs.	Second Semester	Hrs.
Chem. 123 General Chemistry	4	Chem. 124 General Chemistry	4
Biol. 103 General Biology	3	Biol. 227 General Zoology	3
Math. 151 Introduction to Mathematical Analysis	5	Comm. 106 Basic Course II	3
Comm. 105 Basic Course I	3	Soc. Sci 101 Introduction to the Social Sciences I	3
H. E. & P. E. activity course	½	H. E. & P. E. 109M or 109W Health Education	2
Orientation 100	1	H. E. & P. E. activity course	½
	16½		15½

Second Year

First Semester	Hrs.	Second Semester	Hrs.
Chem. 205 Qualitative Analysis	3	Comm. 107 Basic Course III	3
Chem. 221 Organic Chemistry	4	Chem. 222 Organic Chemistry	4
Biol. 228 General Zoology	3	Biol. 250 Human Physiology	3
Soc Sci. 102 Introduction to the Social Sciences II	3	Hist. 201 The United States	3
H. E. & P. E. activity course	½	H. E. & P. E. activity course	½
*Electives	3	*Electives	3
	16½		16½

Third Year

First Semester	Hrs.	Second Semester	Hrs.
Hist. 202 The United States	3	Physics 102-102L Fundamentals of Physics	4
Physics 101-101L Fundamentals of Physics	4	Chem. 308 Biochemistry	4
Chem. 305 Quantitative Analysis	4	Philosophy and Religion elective, or Hum. 401 or 402	3
Biology 301 Bacteriology	5	*Electives	9-10
*Electives	3-4		**20-21
	**19-20		

Fourth Year

Technical training in an approved school of medical technology for which 30 hours of credit are allowed; 15 hours are calculated as of 200-level courses, 15 as of 300-level.

The minimum number of hours required for entry into an approved school of medical technology is 90. The above curriculum includes 104-108 hours which, when added to the 30 allowed for the training work, total 134-138. 136 are required for the B. S. degree.

---

*In order to accumulate the necessary 40 hours in 300-level or 400-level courses, at least 12 hours must be in courses so numbered. (18 hours are included in the curriculum, and 16 are allowed for the hospital training period.) **Suggested Electives:** Any Upper Division biology or chemistry courses for which prerequisites have been met; German or French; psychology, philosophy, and literature courses.

**Since this is an overload, a student must take courses during summer sessions or may, if his point average is high, apply to the Academic Standards Committee for permission to carry the extra hours.

Psychology

Professor Mayer (chairman); Associate Professors Painter and Scollon; Assistant Professors Beckman, Dehnbostel, Dobrich, Ebeling, and M. Smith; Instructors Cunningham, Guterba, and Quinby; Mrs. Hendricks, Mr. Kennedy, Mr. Mohn, Dr. Mowry, Dr. Powers, Mr. Shushereba, Mrs. G. Smith, and Mr. Wallace.

The major in psychology is designed primarily for students who will be going on to do graduate work in the field, although it is also suitable for those who want a terminal liberal arts degree. It consists of 30 semester hours, including Psychology 201, 220, and 221, each of which must be completed with a grade of C or better, and at least one course from each of the areas 1, 2, and 3 shown below; no more than two courses from Area 4 may be counted toward the major:

Area 1—Psychology 300, 305, 306, 403.

Area 2—Psychology 310, 322, 330, 428, 430.

Area 3—Psychology 302, 312, 402, 405, 410.

Area 4—Psychology 202, 303, 304, 307, 308, 332, 401, 406, 432.

Biology 321 and Sociology 405 may be counted toward the major in psychology.

PSYCHOLOGY 201 IS PREREQUISITE TO ALL OTHER PSYCHOLOGY COURSES EXCEPT PSYCHOLOGY 101.

Lower Division Courses

101. *Introduction to Psychology.* The basic principles of behavior. Motivation and learning; individual development; the role of conflict; the problems of human adjustment. Not applicable toward a major in psychology. Staff. *3 h. c.*

201. *General Psychology.* The fundamental principles of human behavior. The relationship of physiological structure to behavior; the nature and development of perception, emotion, behavior, and other factors in the integration of personality. Prereq.: Social Science 101 and 102. Not open to freshmen. Staff. *3 h. c.*

202. *Psychology of Education.* The psychological principles in learning, teaching, and the growth of a successful personality. Staff. *3 h. c.*

220. *Statistical Methods in Psychology.* An introductory course in frequency distributions, measures of central tendency, measures of variability, calculation and meaning of percentiles, the normal curves, reliability and validity of measures and simple correlation. Prereq.: C or better in Psychology 201 and one year of college algebra. Staff. *3 h. c.*

221. *Introduction to Experimental Psychology.* The application of scientific methodology to psychology. Introduction to apparatus, problems and techniques, with experiments in selected areas. Prereq.: C or better in Psychology 201 and 220. Staff. *3 h. c.*

Upper Division Courses

300. *Social Psychology.* The underlying psychological principles that give rise to the self, personality, and social-cultural reality; aspects of human conflict such as prejudice, revolution, and war; mass behavior; the crowd, fashion, public opinion, and propaganda; the psychology of social control and power. Listed also as Sociology 300. Staff. *3 h. c.*

302. *Psychology of the Abnormal.* The causes, nature, and trend of mental maladjustments and injured personality, especially the major illnesses; the place of mental hygiene. Staff. *3 h. c.*

303. *Psychology of Religion.* Identical with Philosophy and Religion 306G. Riley. *3 h. c.*

304. *Psychology of Music.* A study of important psychological investigations bearing upon musical composition, performance, and appreciation, as an aid to the understanding of individual differences in musical capabilities and to the application of such an understanding in teaching. Current psychological tests and measurements in music are also studied. R. Dehnbostel. *3 h. c.*

305. *Child Psychology.* A genetic study of child development from the prenatal period to puberty, stressing the characteristic behavior and suitable training methods for each period of development. Listed also as Home Economics 305 (in which the classroom study is supplemented by two hours a week of directed observation of children, for a total of four credit hours). Staff. *3 h. c.*

306. *Psychology of Adolescence.* Characteristics and behavior problems of teen-age children. Staff. *3 h. c.*

307. *Psychology of Marriage and Family Relations.* The social and psychological factors contributing to marital success and happiness in the modern family; processes of courtship, marriage, and parent-child interactions; sex relations, mental hygiene, homemaking with economic and religious correlations. Talks by a staff of guest lecturers. Prereq.: Psychology 201 and junior standing. Listed also as Home Economics 307 and Sociology 307. Staff. *3 h. c.*

308. *Psychology of Mental Health.* The principles and habits that insure a well-balanced personality and a sound mind. Staff. *3 h. c.*

310. *Psychological Measurement.* The construction, administering, scoring, and interpreting of the objective examination; the selection, administering, scoring, and interpretation of results of standardized tests and scales, and their use in vocational and educational guidance. Prereq.: C or better in Psychology 201 and junior or senior standing. Staff. *3 h. c.*

312. *Industrial Psychology.* An attempt to bring into a meaningful whole the major aspects of individual differences, improvement of work methods, training, fatigue, accident prevention, motivation, attitudes, morale, personnel counseling, labor relations, and supervision. Staff. *3 h. c.*

322. *Systematic Psychology.* A discussion of methodology, problems, and issues in psychology, including an introduction to the philosophy of science, especially as it relates to psychology. Prereq.: senior standing and consent of teacher. *3 h. c.*

330. *Learning.* A study of the learning process, with emphasis on factors such as forgetting, motivation, reinforcement, transfer, etc.; an introduction to modern learning theories. Staff. *3 h. c.*

332. *Psychology of Exceptional Children.* The discovery, psychology, and treatment of children having inferior or superior intellectual ability, defects of vision, hearing, or speech, or neurological or orthopedic handicaps; delinquent children. Their emotional needs, and programs of educational treatment and training. Prereq.: Psychology 305. Staff. *3 h. c.*

401. *Business Psychology.* The psychological factors in employment, selling, and advertising. Staff. *3 h. c.*

402. *Psychology of Personality.* An investigation of the variables which determine personality. Normal and abnormal patterns of behavior are discussed, and consideration is given to the more prominent theories of personality. Staff. *3 h. c.*

403. *Comparative Psychology.* The evolution of behavior from single-celled organisms to man; the relationship between various stages of behavior and the evolving nervous systems. Prereq.: Psychology 201 and Biology 103. Staff. *3 h. c.*

405. *Interviewing and Counseling.* The basic principles, purposes, and psychological problems of interviewing; special-purpose interviews and counseling; recording and evaluation of facts. Reporting and discussion of actual interviews; discussion of problems of class-members. Staff. *3 h. c.*

406. *Vocational Guidance.* Techniques of vocational guidance and their application to high school students, college students, vocational rehabilitation subjects, and adults in general. Staff. *3 h. c.*

410. *Introduction to Clinical Psychology.* A survey of diagnostic and treatment procedures and resources in clinical psychology including individual intelligence testing and projective personality techniques; consideration of professional problems in the field, and research design in the clinical area. Prereq.: Psychology 201, 302 and 402. Staff. *3 h. c.*

411, 412. *Psychology Seminar.* A description of major topics in psychology, *e.g.*, learning theories, motivation, professional problems in psychology, and of the current literature. Prereq.: 12 credit hours of psychology. Staff. *1 + 1 h. c.*

428. *Physiological Psychology.* The structuro-functional relationships of the various divisions and sub-divisions of the neural system, their relationships to the organism as a whole, and their contributions to human behavior. Prereq.: Psychology 302 and Biology 103. Staff. *3 h. c.*

430. *Contemporary Schools of Psychology.* A survey of psychological theories: their evolution, salient principles, and current status of acceptance. Prereq.: Psychology 302. Staff. *3 h. c.*

432. *The Psycho-Social Dynamics of Religion.* Identical with Philosophy and Religion 432G; listed also as Sociology 432. Riley. *3 h. c.*

Public Relations

A suggested curriculum leading to the degree of Bachelor of Science in Business Administration with the major in public relations will be found in the School of Business Administration section. It may be added that in view of the many kinds of public relations work that exist, the student, especially if his interest in not primarily in business or industry, should also consult members of the faculties of the Divisions of Language and Literature and of Social Sciences before planning a curriculum.

Religion

See *Philosophy and Religion.*

Romance Languages and Literature

See *French, Italian,* and *Spanish* separately. For literature in translation, see *Humanities.*

R. O. T. C.

See *Military Science.*

Russian

Associate Professor Richardson (chairman); Father Kovalchuk, Father Vansuch.

A major in Russian consists of 30 semester hours above the elementary level; or 24 hours above the elementary level, plus 6 hours in Latin, Italian, or Spanish. For a combined major in humanities, see *Humanities.*

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS RUSSIAN 202, OR THE CONSENT OF THE TEACHER. FRESHMEN WHO SATISFY THIS PREREQUISITE MAY ENTER UPPER DIVISION COURSES.

Lower Division Courses

101-102 *Elementary Russian.* The fundamental differences between Russian and English are explained graphically so as to afford a simplified approach to easy scientific texts and minimize the time needed for acquiring the essential vocabulary of conversation. No credit will be given for this course if the student has credit for two years of high school Russian. Fee: $5.00 each semester. *3 + 3 h. c.*

201. *Intermediate Russian.* Elementary composition based on grammar review. Reading material is chosen with the double purpose of furnishing a basis for the further study of Russian literature and providing practice in technical reading for those who wish it. Prereq.: C or better in Russian 102 or in second-year high school Russian. Fee: $5.00. *3 h. c.*

202. *Intermediate Russian.* A continuation of Russian 201, using texts of increasing difficulty; conversation and composition. Prereq.: Russian 201 or three years of high school Russian. Fee: $5.00. *3 h. c.*

Upper Division Courses

301, 302. *Advanced Russian.* Advanced training in written and oral expression. Special problems of grammar, sentence structure, and idiomatic expression. Analysis of texts from Russian classics, scientific publications, and journals. Russian 301 is prerequisite to 302. *3 + 3 h. c.*

305, 306. *Russian Literary Tradition.* A survey of the important writers of Russia up to the Revolution, with special attention to Pushkin, Turgenev, Tolstoy, Dostoyevsky, and Chekhov. Prereq.: Russian 202 or equivalent. *3 + 3 h. c.*

307. *Contemporary Russian Literature.* Readings in the works of Russian writers, both in the Soviet Union and abroad, since the Revolution. Prereq.: Russian 202 or equivalent. *3 h. c.*

308. *Informative Readings in Russian.* Reading of books and articles that serve the interests and requirements of the individual student. Prereq.: Russian 202 or equivalent. *3 h. c.*

309. *Journalistic Russian.* Selections from periodicals published in Russia will be studied with a view to enabling the student to follow Soviet opinion relating to contemporary problems. Prereq.: Russian 202 or equivalent. *3 h. c.*

310. *Readings in Russian History.* The history of Russia from its beginnings up to the present as presented in Russian texts. Prereq.: Russian 202 or equivalent. *3 h. c.*

311. *Pushkin, Lermontov, and Gogol.* The reading of selections from such works as *Boris Godunov, Eugene Onegin, Geroi Nashego Vremeni, Revizor, and Myortviye Dushi.* Prereq.: Russian 202 or equivalent. *3 h. c.*

312. *The Russian Novel.* The reading of selections from the novels of such writers as Turgenev, Tolstoy, and Dostoyevsky. Prereq.: Russian 202 or equivalent. *3 h. c.*

313. *Russian Phonetics.* Theory and practice of pronunciation and diction. Oral work based on practical and cultural topics recorded by native Russian speakers. Fee: $5.00. *3 h. c.*

Social Science

Professor Smith; Associate Professors Botty, Boyer, and Sterenberg; Assistant Professors Powers (supervisor), Crites, and Potemra; Instructors Battin, Boland, Eichenberger, Esterly, Fissell, Gonzalez, McKean, McLean, and Stoltzfus; Mr. Almgren, Mr. Balalis, Mr. Baughan, Mr. Belsan, Miss Berich, Mr. A. Brennan, Mr. W. Brennan, Mr. Catoline, Mr. A. Chambers, Mrs. Elster, Mr. Goterba, Mr. Gray, Mr. Klein, Mr. J. Miller, Mr. Olynyk, Mr. Rezek, Mr. Schumacher, Mr. Sedlacko, Mrs. A. M. Smith, Mrs. Taylor, Mr. Toti; staff.

Twelve credit hours in courses in the social sciences are required of every student graduating from Youngstown University; this requirement is met by taking the four courses listed below.

Candidates for the Bachelor of Engineering degree, however, need only nine hours; and a student completing Military Science 101-102 and 201-202 and working toward any degree except a Bachelor of Engineering may omit Social Science 102.

A transfer student with less than sixty-four but more than thirty-two credit hours acquired elsewhere may omit Social Science 101 and 102, and a transfer student with sixty-four or more hours acquired elsewhere may omit all four courses, provided his credits include twelve hours in the social sciences at the time he graduates.

Lower Division Courses

101. *Introduction to the Social Sciences I.* A scientific approach to the study of human individual and group behavior. The object is to familiarize the student with the contemporary approach to the various social studies, emphasizing anthropology, psychology, and sociology; to develop critical and analytical skills useful in philosophy; and to accumulate valid knowledge in other fields. (For certifiation and transfer purposes, this is regarded as a course in introductory sociology.) Staff. *3 h. c.*

102. *Introduction to the Social Sciences II.* A continuation of Social Science 101, but centered on concepts needed in an approach to economics and political science with emphasis on the application of the elementary principles of both fields to the contemporary United States. Prereq.: Social Science 101, though in cases of exceptionally effective preparation in secondary school, or of particularly burdensome schedule problems, departmental chairmen may approve enrollment in 102 before the completion of 101 or concurrently with 101. (For certification and transfer purposes, this is regarded as a course in introductory political science.) Staff. *3 h. c.*

201. *The United States to 1865.* Identical with History 201. Staff. *3 h. c.*

202. *The United States Since 1865.* Identical with History 202. Staff. *3 h. c.*

Combined Major in Social Studies

A combined major in social studies consists of Social Science 101 and 102, History 201 and 202, Psychology 201, and 30 semester hours in other courses in the Division of Social Sciences, which comprises the Departments of Economics, Geography, History, Philosophy and Religion, Political Science, Psychology, and Sociology.

This major is suitable for those who expect to teach in the public schools, to perform non-professional social work, or to enter the civil service, and for those whose ultimate aim is professional social work, the study of law, or graduate work in any of the social science fields. For public school teaching, the major must include specific courses required for certification.

Suggested Social Studies Curriculum

First Year	Hrs.
*Biol. 103 General Biology and 223 General Botany or 227 General Zoology	6
Comm. 105-106 Basic Course I-II	6
**Foreign language (or elective)	6
Hist. 105, 106 Western Civilization or 107 Eastern Civilizations (any two)	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
(Maximum load)	34

Second Year	Hrs.
*Biol 224 General Botany or 228 General Zoology	3
*Science elective	3
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
**Foreign language (or elective)	6
Hist. 201 and 202 The United States	6
Philosophy and Religion 203 Introduction to Philosophy or 220 Logic	3
Psych. 201 General Psychology	3
Elective: Econ. 202, Pol Sci. 201 or 202, or Sociology 203	3
H. E. & P. E. activity courses	1
(Maximum load)	34

*Chemistry or physics may be substituted, and other combinations of biology courses are appropriate; but eight hours must be in one laboratory science, with three additional hours in the same science, or in one of the other two, or in astronomy, geology, or mathematics.

**Foreign language requirements are explained under Requirements for the Degrees and Proficiency in a Foreign Language, at the beginning of this section. French or German is preferred for admission to graduate schools. The prospective graduate student should consider the advisability of two years' study in each.

Third and Fourth Years

A student may find it necessary to complete some of his second-year work in the third year, for often it is wise not to attempt the maximum load during the first year or until adequate skill has been developed with written English (see Proficiency in English, in the General Requirements and Regulations section) and until he knows the extent to which he may safely burden himself with outside employment and extracurricular activities. Otherwise, he may fulfill his major and other requirements according to his needs and aspirations from among the optional courses above, plus Sociology 204, and from Upper Division courses in sociology, political science, history (except History 333), and humanities; and from the following: Economics 304, 305, 319, 401, 402, and Philosophy and Religion 301G or 301S, 302G or 302S, 305G, 306G or 306P, 308J-P, 310G, 330G, 333G, or 333S. A rather wide selection is preferred.

Sociology

Associate Professor Botty (chairman); Assistant Professors Kiriazis and McDonald; Instructors Foster and Stoltzfus; Mrs. Battisti, Mr. W. Brennan, Mr. Goterba, Mr. Harris, Mr. Johnson, Mr. Kaplan, Mr. J. Miller, Mrs. Moore, and Mrs. A. Smith.

A major in sociology consists of 30 semester hours. The major is designed to furnish useful background for students contemplating professional training in social work, law, the teaching of sociology, and allied fields.

Economics 402, Comparative Economic Systems, and Political Science 308, Public Administration, may be counted toward a major in sociology; one-sixth credit will be allowed for any courses listed under Humanities.

Lower Division Courses

203. *Principles of Sociology.* Underlying principles of the science of society, with reference to types of societies, groups, and classes; development of culture; laws of population; structure and organization of social institutions; dynamics of social change. Prereq.: Social Science 101 and 102. *3 h. c.*

204. *Cultural Anthropology.* An approach to a science of culture. The origin, diffusion, and continuity of primitive social institutions, and their relation to contemporary social phenomena. Prereq.: Social Science 101 and 102. *3 h. c.*

205. *Social Pathology.* The causes and present status of a selected number of social maladjustments, and possible remedies for them. Defective social structure and control in their relation to youth, war, poverty, vice, suicide. Prereq.: Social Science 101 and 102. *3 h. c.*

Upper Division Courses

300. *Social Psychology.* Identical with Psychology 300. *3 h. c.*

303. *The Sociology of Aging.* The characteristics of our aging population, the problems arising from it, and their implications; personal adjustment to the aging process; the significance to older people of services performed for them; some basic skills needed for such service. Prereq.: junior standing, or current employment in an agency serving the aged, or consent of teacher. *3 h. c.*

305. *Economic and Social Statistics.* Identical with Economics 305. *3 h. c.*

306. *The Family.* Family and kinship systems as a major social institution; their development, functions, and relation to other basic institutions as found in different cultures and social strata. Prereq.: Sociology 203. *3 h. c.*

307. *Psychology of Marriage and Family Relations.* Prereq.: Psychology 201 and junior standing. Identical with Psychology 307. Listed also as Home Economics 307. *3 h. c.*

308. *Educational Sociology.* Identical with Education 308. *2 h. c.*

311. *Juvenile Delinquency.* Social and psychological factors underlying delinquency; the juvenile court and probation; treatment in the community and in institutions; preventive measures. Prereq.: junior standing. Listed also as Police Science 311. *3 h. c.*

312. *Historical Introduction to Social Welfare.* The historical background of social work as it functions in the United States. A survey of social and public welfare services, with analysis of programs of local agencies and their interrelationships with national welfare services and with other local organizations. Visits to local agencies. Prereq.: Sociology 203. *3 h. c.*

315. *Criminology.* The legal, psychological, and social factors underlying crime, criminal behavior, and crime prevention. Prereq.: Sociology 203. Listed also as Police Science 315. *3 h. c.*

316. *Corrections.* Modern thought concerning methods of apprehension, treatment, and institutional care of adult criminals. Procedures governing probation and parole. Prereq.: Sociology 203. Listed also as Police Science 316. *3 h. c.*

325. *Cultural Anthropology: New World Ethnography I.* An analysis of the origins, culture, and achievements of the Inca, Mayan, and Aztec civilizations with special emphasis on their art, symbolism, and social institutions. Prereq.: Sociology 204. *3 h. c.*

326. *Cultural Anthropology: New World Ethnography II.* An analysis of selected North American, Central American, and South American Indian tribes, with special emphasis on their art, symbolism, and social institutions. Prereq.: Sociology 204. *3 h. c.*

327. *Cultural Anthropology: Old World Ethnography.* An analysis of ancient and contemporary primitive cultures found throughout Asia, Africa, Australia, and the Pacific islands, with special emphasis on their art, symbolism, and social institutions. Prereq.: Sociology 204. *3 h. c.*

330. *Industrial Sociology.* Industrial social organization in our culture with consequent urbanization; small and large enterprises related to each other, to our social class system, to minority groups, and to other areas within our society such as the family, government, and power politics; social change; technological progress and its repercussions. Prereq.: Social Science 101 and 102 and junior standing. *3 h. c.*

331. *Urban Sociology.* The city in modern industrial civilization; its physical plant and land-use pattern; its changing social structure viewed from the perspectives of livelihood, stratification and power, family, school, church, health and welfare, mass communication, and government; the sociological aspects of planning redevelopment. (Recommended for civil engineers.) Prereq.: Sociology 203. *3 h. c.*

332. *Sociology of Religion.* An objective study of the interrelationship of religious institutions, culture, society, and personality. Comparative examination of religion in different social contexts. (This course is offered for students preparing for social work in both private and public agencies, and for pre-theological students.) Prereq.: Sociology 203. *3 h. c.*

404. *Political Sociology.* The social conditions that affect government and politics, determine political order, and regulate struggles for power; political behavior and phenomena such as pressure groups; associations, political parties, and movements to stabilize or change the political order. Special consideration of nineteenth and twentieth century movements. Prereq.: History 201 and 202, and junior standing. *3 h. c.*

405. *Social Control.* Means of control in primitive and advanced societies. The role of the family, school, church, clubs, leagues, corporations, labor unions, trade and professional associations, the press, radio, and movies. The modification of individual and group behavior by group valuations, praise, ridicule, rewards, punishments, symbols, slogans, and propaganda. Prereq.: Sociology 203 and Psychology 201. *3 h. c.*

406. *Social Research.* Seminar in methods of obtaining, interpreting, and presenting sociological data through the use of case studies, social surveys, etc. Each student makes an intensive study of an existing situation. Prereq.: Sociology 305, senior standing with major in sociology or social sciences, and consent of teacher. *3 h. c.*

409. *History of Social Philosophy.* The evolution of social theory, with emphasis upon various present-day schools of thought. Prereq.: Sociology 203 and nine semester hours of Upper Division sociology courses. Listed also as Philosophy and Religion 409G and 409S. *3 h. c.*

410. *Minority Groups.* A survey of the origin, characteristics, status, and adjustment of national and racial minority groups, with emphasis on the significance of membership in such a group for in-group, out-group, and community solidarity. Prereq.: Sociology 203 and junior standing. *3 h. c.*

413. *Introduction to Social Casework Methods.* Analysis of the major processes employed in social casework; the relation of these methods to other fields such as nursing, teaching, legal counseling, personnel, and business administration. Prereq.: Sociology 306 and 312, or senior standing with a major in sociology or social sciences. *2 h. c.*

414. *Introduction to Social Group Work Methods.* Analysis of the major processes employed in social group work; relation of social work methods to other fields such as teaching, recreational leadership, committee work, and participation in civic and community affairs. Prereq.: Sociology 312, or senior standing with a major in sociology or social sciences. *2 h. c.*

415. *Introduction to Community Organization Methods.* Analysis of the major processes employed in community organization and social action for the purpose of achieving a more effective adjustment between social welfare needs and community resources; relation of community organization methods to areas other than social work, such as civic leadership, industrial planning, political and legal services. Prereq.: Sociology 312, or senior standing with a major in sociology or social sciences. *2 h. c.*

432. *The Psycho-Social Dynamics of Religion.* Identical with Philosophy and Religion 432G; listed also as Psychology 432. *3 h. c.*

Spanish

Associate Professors Richardson (chairman) and Mills; Assistant Professor Garcia; Instructor Duca; Mr. Scavnicky.

A major in Spanish consists of 30 semester hours above the elementary level, including Spanish 301, 302; or 24 hours above the elementary level, including Spanish 301, 302, plus 6 hours of French, Italian, or Latin. For a combined major in humanities, see *Humanities*.

THE PREREQUISITE FOR ANY UPPER DIVISION COURSE IS SPANISH 202, OR FOUR YEARS OF HIGH SCHOOL SPANISH, OR THE CONSENT OF THE TEACHER. FRESHMEN WHO SATISFY THIS PREREQUISITE MAY ENTER UPPER DIVISION COURSES.

Lower Division Courses

101-102. *Elementary Spanish.* The essentials of Spanish grammar, taught through written and oral exercises and the reading of simple texts.

No credit is given for this course if the student has credit for two years of high school Spanish; but see *Proficiency in a Foreign Language*, at the beginning of this section. Fee: $5.00 each semester. *3 + 3 h. c.*

201. *Intermediate Spanish.* Review of grammar, with imitative exercises in composition. Reading of selected classics of Spanish and Spanish-American prose narration. Prereq.: C or better in Spanish 102 or in second-year high school Spanish. Fee: $5.00. *3 h. c.*

202. *Intermediate Spanish.* A continuation of Spanish 201, using modern stories and plays and conversational exercises based on the text. Prereq.: Spanish 201 or three years of high school Spanish, or consent of teacher. Fee: $5.00. *3 h. c.*

201L, 202L. *Spanish Conversation.* A laboratory course in oral Spanish, with the teacher using the direct conversational approach to help the student speak Spanish in practical, everyday situations. Prerequisite or concurrent: Spanish 201, 202. *1 + 1 h. c.*

205. *Oral Practice in Latin-American Countries.* Two weeks in one or more Spanish-speaking countries, accompanied by a teacher. One and a half hours of instruction daily for twelve days. Prereq.: Spanish 101-102, or consent of the teacher, with whom arrangements should be made. The student pays his own expenses. *1 h. c.*

211-212. *Commercial Spanish.* An introduction to the specialized field of commercial Spanish, with emphasis on the development of a vocabulary practical for all types of business. Practice in dictation, letter writing, and translation. Prereq.: C or better in Spanish 102 or in second-year high school Spanish. (This course does not satisfy the prerequisite for Upper Division courses in Spanish.) *3 + 3 h. c.*

Upper Division Courses

ALL UPPER DIVISION COURSES (EXCEPT 411, 412) ARE CONDUCTED IN SPANISH.

301, 302. *Survey of Spanish Literature.* An introduction to the study of Spanish literature, aimed at acquainting the student with the main classical works and writers and the principal literary tendencies and movements. First half: from the origins to 1700. Second half: from 1700 to the present. Required for the major in Spanish. *3 + 3 h. c.*

311. *Advanced Composition and Grammar.* A practical course in advanced composition and grammar. Study of peculiarities in Spanish style, vocabulary, and idiom. Translation into Spanish; free composition. *3 h. c.*

312. *Curso de Estilo.* Through translations from English to Spanish and from Spanish to English an insight is given into the fundamental differences in expression between the two languages. *3 h. c.*

313. *Spanish Civilization.* Spain: the land and the people; the Golden Age and the modern period. A study of the traditions, history, and geography of Spain, and the national character as expressed in everyday life—material fundamental to the understanding of Spanish literature. All assigned readings are in Spanish *3 h. c.*

314. *Latin-American Civilization.* A survey of the chief cultural characteristics of the Hispanic-American republics since their independence; their way of life, the evolution of their institutions, their social and political structure. Assigned readings are in Spanish. *3 h. c.*

351. *History of the Spanish Language.* The development of the Spanish language from Latin to Old Spanish to Modern Spanish with an intensive study of the development of the 2000 basic words in Modern Spanish—sounds, inflections, syntax, word meaning and usage. Prereq.: Spanish 202. *3 h. c.*

400. *Readings in Old Spanish.* An introduction to Spanish literature of the twelfth, thirteenth, and fourteenth centuries, with an intensive study of the epics and the old romances. Prereq.: Spanish 202. *3 h. c.*

401. *Classical Spanish Literature.* The literature of the Golden Age, with special emphasis on the dramatists, Cervantes, Tirso, Lope de Vega, Zorrilla, Calderon. *3 h. c.*

403, 404. *Nineteenth Century Spanish Literature.* The literary movements of the nineteenth century, studied through extensive reading, written and oral reports, and explanation of texts in class discussion. First half: romanticism, realism, naturalism, and the *costumbrista* movement; special study of the drama. Second half: the renaissance of the novel. *3 + 3 h. c.*

405. *The Generation of '98.* The principal writers of the early twentieth century: Baroja, Unamuno, Valle-Inclán, Azorin, Benavente, and others. *3 h. c.*

406. *Twentieth Century Spanish Literature.* A survey of the leading writers of the twentieth century with a special study of their principal work. Class discussion of representative novels, poems, and dramas. Oral and written reports. *3 h. c.*

407. *The Spanish-American Novel.* An outline of the development of the Spanish-American novel up to the present day. Reading and analysis of significant novels. *3 h. c.*

411, 412. *Comparative Grammar of the Romance Languages.* Identical with French 411, 412; listed also as Italian 411, 412. *3 + 3 h. c.*

Speech and Dramatics

Assistant Professors Elser (chairman) and Crites; Instructors Gmucs and Howland.

Majors are expected to complete the basic requirements for the English major, with emphasis on the courses in dramatic literature. Courses in speech and dramatics may be counted toward a major in English, with the approval of the Chairman of the Department of English. Students preparing to teach in high school will find Speech 219 especially valuable.

THE PREREQUISITE TO ALL OTHER COURSES IN SPEECH IS SPEECH AND DRAMATICS 115, OR COMMUNICATION 105-106-107, OR PREPARATION SATISFACTORY TO THE TEACHER.

Lower Division Courses

105-106-107. *Basic Course* in communication. See Communication.

115, 116. *Fundamentals of Speech.* This course aims to develop self-expression through mind, body, and voice, by means of a study of proper speech habits and practice in the delivery of numerous extemporaneous and prepared speeches. Speech and Dramatics 115 is prerequisite to 116. (The combination of these courses with English 101-102 is equivalent to Communication 105-106-107.) *2 + 2 h. c.*

213. *Public Speaking.* The effective construction and delivery of speeches. Frequent presentation of short talks before the class. Adaptable to the needs of professional and business men. *2 h. c.*

215, 216. *Public Speaking and Oral Interpretation.* A continuation of Speech and Dramatics 115, 116 on a more advanced level. Those who wish may concentrate on oral interpretation. *2 + 2 h. c.*

217. *Principles and Practices of Broadcasting.* A lecture and observation course designed to familiarize students with the principles, tools, and skills required in radio and television broadcasting. *2 h. c.*

219, 220. *Play Production I.* This course attempts to develop interest in and appreciation of legitimate drama, especially in the little theaters of today; to instruct in the production of such drama; and to provide practical experience through producing plays in class and for the public. Two hours of lecture and two hours of laboratory. *3 + 3 h. c.*

221. *Voice and Diction.* A fundamental study of the voice mechanism: breath control, tone, enunciation, articulation, vocal variety. *2 h. c.*

223, 224. *Rehearsal and Performance.* Detailed study of a play or opera through preparing it for public performance. The class is formed after casting and continues through the final production date. May be repeated. *½ to 2 + ½ to 2 h. c.*

Upper Division Courses

315. *Debating and Public Discussion.* The principles of argumentative and deliberative speaking, with practical training in analyzing questions, finding and selecting evidence, debating, and public discussion. *2 h. c.*

317. *Acting I.* Rehearsal and classroom performance of scenes and pantomimes. Students of Speech and Dramatics 421 and 422 assist in directing, under faculty supervision. *2 h. c.*

319, 320. *Play Production II.* Theory and practice of staging, scene design, lighting, and costuming of period productions. Construction of stages in miniature from drawings, after research into method. Prereq.: consent of teacher. *3 + 3 h. c.*

323. *Applied Public Speaking.* Preparation of speeches and their delivery before various groups. Conducted mainly through individual conferences. Prereq.: consent of teacher. *2 or 3 h. c.*

421. *Theater Directing I.* The director's interpretation of the play: its setting, movement, and dialogue. Class-members assist in the work of Speech and Dramatics 317. Prereq.: consent of teacher. *2 h. c.*

422. *Theater Directing II.* An advanced approach to the work of Speech and Dramatics 421. Each student directs a play. Prereq.: consent of teacher. *2 h. c.*

University Honors Seminar

Professors Smith (supervisor), T. Miner, and W. Miner; Associate Professors Roberts and Slavin.

301-302. *The University Honors Seminar.* A critical investigation of certain ideas underlying civilization, embracing and integrating the particular studies of science, society, and the humanities. The seminar is conducted by two teachers and occasional special lectures. Meetings are symposia in which individual papers are presented and criticized. Students completing the seminar with distinction are granted special honors by the University. Departmental chairmen will determine what credit can be applied toward the student's major. Limited to students selected by the Gould Society Committee and by the faculty members participating in the program. *3 + 3 h. c.*

Zoology

See *Biology*.

The School of Business Administration

Robert LaVelle Miller, Dean

ORGANIZATION AND DEGREES

The School of Business Administration has five departments: Accounting, Advertising, Business Organization, Merchandising, and Secretarial Studies.

Majors are offered in accounting, advertising, commercial art, general business, management, merchandising, public administration, public relations, traffic and transportation management and secretarial studies. Minors are offered in accounting, advertising, business organization (except when the majors are general business, management, public administration, public relations or traffic and transportation management), management, merchandising, and transportation.

The degrees to which courses in the fields may lead are those of Bachelor of Science in Business Administration, the requirements for which are listed below, and Bachelor of Science in Education with a major in business education, for which see the School of Education section. A two-year curriculum leading to the title of Associate in Business Administration is also offered.

Requirements for the Degree

Bachelor of Science in Business Administration

It is the student's responsibility to see that he satisfies all the graduation requirements for the degree he seeks. For the Bachelor of Science in Business Administration degree, these are:

1. The pre-college or preparatory courses, normally taken in high school. These are listed briefly below: for further information see the General Requirements and Regulations section.

2. The courses and other requirements to be completed in the University. They are explained in the General Requirements and Reglations section but are recapitulated below.

The curriculums leading to the degree require a minimum of 125 semester hours of credit (130 for general business, commercial art, traffic and transportation management, or secretarial studies, 136 for accounting, management, and public administration), and are designed to be completed in four

academic years. A student willing and able to carry heavier loads successfully may finish in less time.* If a student wishes to include summer courses in his program, he should consult his adviser.

R. O. T. C. students are allowed certain modifications of the requirements, as explained in the General Requirements and Regulations section.

PRE-COLLEGE

SUBJECT	HIGH SCHOOL UNITS
English	3
United States history and civics	1
Any mathematics (algebra for accounting and management majors) **	1
Science or additional mathematics	1
Others	10

IN THE UNIVERSITY

	SEMESTER HOURS OF CREDIT
REQUIREMENTS IN ADDITION TO COURSES	
Completion of the number of credit hours required for degree	125 to 136
Upper Division status (including completion of any specified preparatory courses not completed at time of entrance).	
Major and minor requirements. See the year-by-year curriculums at the end of this section.	
Course-level requirements.	
Point index requirement.	
Residence requirement.	
Application for graduation.	
COURSE REQUIREMENTS (OTHER THAN THE MAJOR AND MINOR)	
BASIC COURSES	
Communication 105-106-107, Basic Course I, II, III	9
Health Education and Physical Education 109M or 109W, Health Education	2
Health Education and Physical Education activity courses	2
Orientation 100, Freshman Orientation†	1
AREA COURSES	
Social studies:	
Social Science 101 and 102, Introduction to the Social Sciences I, II***	6
History 201 and 202, The United States	6
Religion:	
A course in the Philosophy and Religion department, or Humanities 401 or 402, Older Classics I, II	3
Science or mathematics‡	9
Six hours in any science course, and Business Organization 131, Mathematics of Business, or 141-142, Business Algebra I-II, or Mer-	

*This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while enrolled in courses.

**Two years of algebra is required for accounting and management majors. Such students who have only one year of high school algebra must take Business Organization 141R.

***Sociology 203, Principles of Sociology, is taken in place of Social Science 102 by the management major.

†Not required of part-time students until they have completed 64 semester hours.

‡For the secretarial studies major the science requirement is somewhat different, and some of the courses that follow may be replaced by courses taken in the Secretarial School. See the suggested curriculum for that major at the end of this section.

chandising 121, Merchandising Mathematics, where applicable. The science requirement for a major in management suggests a laboratory science of eight to ten hours.

NON-PROFESSIONAL COURSES

English 3
Any 200-level literature course, or Humanities 201, Mythology in Literature.

Psychology 201, General Psychology 3

PROFESSIONAL COURSES

Accounting 201-202, Elementary Accounting 6

Business Organization 111, Principles of Business 3

Business Organization 201 and 202, Business Law I, II 6
(Commercial art majors take only Business Organization 201)

Business Organization 322, Credits and Collections 3

Merchandising 224, Marketing 3

REQUIREMENTS FOR THE MAJOR AND MINOR

The courses required for the majors in accounting, advertising, and merchandising are stated in the announcements of those departments. Those required for the combined majors in commercial art or general business, and those suggested for a combined major in management, public relations, or traffic and transportation management, are stated in the announcements of the Business Organization department. The year-by-year curriculums that appear later in this section include all required courses. The minor for this degree must be in a field related to the major, or in one approved by the Dean of the School of Business Administration.

Requirements for the Title

Associate in Business Administration

The title of Associate in Business Administration will be granted to a student having a total of 60 to 66 semester hours (depending on the major) of acceptable academic credit with a point average of not less than 2.00, including Communication 105-106; Social Science 101; and Business Organization 201 and 202. A major in advertising, merchandising, or a combined major in public relations is 60 semester hours; a combined major in commercial art, general business, or traffic and transportation management requires 63 semester hours; and a major in accounting or a combined major in management or public administration requires 66 semester hours.

The title of Associate in Business Administration will also be granted to a student who completes the first two years of the four-year curriculum in secretarial studies for a total credit of 68 hours.

The grade in Communication 105-106 or its equivalent must be C or better in order to be certified in English proficiency by the Director of the Division of Language and Literature.

COURSES OF INSTRUCTION AND CURRICULUMS†

Curriculums for the several major fields open to business administration students will be found after the course descriptions for merchandising, except the one for secretarial studies, which follows the last course description in that subject.

Accounting

Professor Miller (chairman); Associate Professors Jenkins and Reilly; Assistant Professors P. Chuey, Evans, Magner, Neimi, and Petrych; Instructors Berquist, Donchess, Fortunato, Goldstein, Scheetz, and Walsh; Mr. Bannach, Mr. Elliott, Mr. Fuller, Mr. Goddard, Mr. Harshman, Mr. Hosick, Mr. Nicastro, Mr. Reali, Mr. Scheel, Mr. White, and Mr. Williams; Lecturer Rodkey.

Accounting courses provide a study of bookkeeping methods and the presentation, analysis, and interpretation of financial data. They also cover machine accounting, cost analysis, consolidated statements, auditing, taxes, systems of accounting, and other advanced work. They are designed for students who wish to become private accountants in business and industrial firms; to prepare for certification through experience in the employ of certified public accountants; to become cost analysts or general business executives; or to teach bookkeeping or accounting.

In view of this variety of aims and interests, the accounting curriculum diverges in its last two years. A major in accounting may be in either public accounting or private accounting. A major in public accounting consists of 40 semester hours; a major in private accounting consists of 44 semester hours; each includes Accounting 201-202, 300, 301-302, 303, 304, 401, 403, 404, 405, 407 and 415 and other courses included in the curriculums printed below. A student majoring in accounting must have a minor of 15 hours in a related field or in a field approved by the Dean of the School of Business Administration.

A grade of C in Accounting 202 is prerequisite to all more advanced courses in accounting. *A point index of at least 3.0 in accounting in the previous semester or in accumulated accounting courses is necessary to carry three or more accounting courses the following semester.*

Lower Division Courses

201-202. *Elementary Accounting I-II.* The theory and use of accounting statements, operating accounts, and working papers, with special attention to books of original entry and special ledger accounts. The complete accounting cycle is developed through practice sets and problems. Accounting 201L-202L must be taken concurrently. 3 + 3 *h. c.*

201L-202L. *Elementary Accounting Laboratory I-II.* For all students in Accounting 201-202. This requirement can be waived only on the approval of the dean of the school. The class meets two hours a week. *Evaluated as one hour for load and billing purposes.* *No credit.*

Upper Division Courses

300. *Basic Concepts of Machine Accounting.* An approach to accounting methods utilizing the unit record card. Fundamentals of punched

†The student should familiarize himself with the course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained at the end of the General Requirements and Regulations section.

card machine operations and a logical approach to systems and procedure developments involving the unit record. Applications include accounts receivable, accounts payable, payroll, materials and labor accounting, inventory control, and a case study of a mechanized installation. Prereq.: junior standing. *2 h. c.*

301-302. *Intermediate Accounting I-II.* Financial statements, classification of real and nominal accounts, and special features pertaining to partnerships and corporations. The theoretical background of accounting principles and procedures, with emphasis on profits, retained earnings, dividends, depreciation, funds, and reserves. Accounting 301L-302L must be taken concurrently. Prereq.: C or better in Accounting 202. *3 + 3 h. c.*

301L-302L. *Intermediate Accounting Laboratory I-II.* For all students in Accounting 301-302. This requirement can be waived only on the approval of the dean of the school. The class meets two hours a week. Prereq.: Accounting 202. *Evaluated as one hour for load and billing purposes. No credit.*

303. *Basic Cost Accounting.* The principles of cost-finding for manufacturing accounts, including the three-fold division of costing: material accounting, payroll records, and the recording and applying of manufacturing expense. Job order and process costs are covered, with emphasis on budgeting as a means of overhead control. Appropriate problems and practice sets are used. Prereq.: C or better in Accounting 202. *3 h. c.*

304. *Advanced Cost Accounting.* A continuation of Accounting 303, covering estimating, standard, distribution, differential, and by-product costing, with emphasis on the use of cost data as a means of managerial control. Prereq.: C or better in Accounting 303. *3 h. c.*

320. *Managerial Accounting.* Management's use of accounting information for control and planning purposes. Principles of financial accounting concerning basic concepts, income measurement and valuation methods. Statement analysis and fund flow statements. Some essential elements of cost accounting including the determination of variances and their interpretations. Management planning includes use of budget reports, deciding among alternative courses of action and planning capital acquisitions. (Not open to accounting majors.) Prereq.: C or better in Accounting 202. *3 h. c.*

400. *Principles of Business Computers.* An approach to business procedures and systems through the use of electronic computers. Basic techniques of computer programming: adaptation of data processing fundamentals to business problems; and a case study of an electronic computer installation. Prereq.: Accounting 300. *3 h. c.*

401. *Advanced Accounting.* Partnerships and liquidations in installments; joint ventures; installment sales; insurance; receivership; estates and trusts; branch accounting; consolidations and mergers. Prereq.: C or better in Accounting 302. *3 h. c.*

403. *Federal Taxes I.* The principles underlying our income tax law as it pertains to the individual. The student files specimen returns based on actual case studies. Prereq.: C or better in Accounting 302, or senior standing. *3 h. c.*

404. *Federal Taxes II.* The federal income tax for partnerships and corporations; the gift tax, the estate tax, and social security taxes. The student files specimen returns based on actual case studies. Prereq.: Accounting 403. *3 h. c.*

405. *State and Local Taxes.* A condensed study of all Ohio taxes, including sales, tangible, and intangible, personal property, franchise, stamp, and other related taxes. The student fills out forms required of business by various governmental agencies. Prereq.: standing as senior majoring in accounting. *3 h. c.*

407. *Auditing.* Methods of auditing, with emphasis on the verification of balance sheets and operating statements and the analysis and use

of prepared statements. A short audit case is worked through by the student. Prereq.: Accounting 304 and 401. *3 h. c.*

408. *Auditing Practice and Report Writing.* A practical case in auditing is worked through with emphasis on the special recommendations for procedures used in actual practice. Prereq.: Accounting 407. *2 h. c.*

410. *Statement Analysis.* The flow of funds as reflected in financial statements. The use of ratios and other indices in interpreting a concern's financial position, operating position, trends, and other variations. Each student prepares an analysis of some prominent corporation and makes comparisons with its principal competitors. Prereq.: Accounting 302 or 320 or junior standing. *2 h. c.*

411, 412. *C. P. A. Problems I, II.* All types of accounting and auditing problems are solved and discussed from the standpoints of both theory and practice, with special emphasis on accuracy and clarity in such problems as are encountered in C. P. A. examinations. Prereq.: grade of C or better in Accounting 407 or consent of teacher. Offered on demand. *3 + 3 h. c.*

415. *Systems.* Principles underlying the design and installation of accounting systems to meet the needs of all types of business concerns. Machine accounting methods and manuals of procedure are also studied. Prereq.: Accounting 401, 403 and 407. *3 h. c.*

416. *Budgetary Control.* Compilation and preparation of budget data, for managerial and administrative purposes. Various types of budgets are prepared and selected problems of budgeting worked. Prereq.: Accounting 304 and 401. *3 h. c.*

417. *Controllership.* The duties and responsibilities of the chief accounting officer in a private business concern. The use of accounting and statistical data in the planning, co-ordination, control, and protection of business. Prereq.: Accounting 304 and 401. *3 h. c.*

420. *Governmental Accounting.* The principles and standards of governmental accounting. Terminology. Classification of accounts. General and specific funds' applications as to budgets, revenue and expenditures, fixed assets, bonded debt and interest, and inter-fund relationships and transfers. Auditing and financial reporting of governmental funds. Prereq.: Accounting 320, or consent of teacher. *3 h. c.*

451. *Seminar.* Individual research in accounting problems. The student chooses his topics and prepares papers and talks for the benefit of the group. Prereq.: Accounting 304 and 401, and senior standing. *1 to 3 h. c.*

Advertising

Assistant Professors Flad (chairman), and Sinclair; Instructors Braden and Mamula; Mr. Berndt, Mr. Farragher, Mr. Meshel, Mr. Schafer, and Mr. Walls.

Advertising courses provide a study of the forms, methods, costs, and uses of advertising. They are designed both for students who plan to enter the advertising field and for those who wish a knowledge of advertising for other purposes.

A major in *advertising* consists of 30 semester hours: it includes Advertising 227, 228, 329, 330, 401, 411, 414, 415, and Art 110 and 223. The combined major in *commercial art* consists of 45 semester hours in advertising and art as prescribed in the curriculum printed below. A student majoring in either advertising or commercial art must have a minor of 15 semester hours in a related field or in a field approved by the Dean of the School of Business Administration.

Lower Division Courses

227. *Advertising Principles.* A survey of advertising as an instrument of modern business and selling, including the various forms of advertising. The course comprises the social and economic aspects of advertising, marketing research, consumer, product, and market analysis, with discussion of trade names and trademarks, media selection, newspapers, magazines, radio and television. Prereq.: sophomore standing. *3 h. c.*

228. *Advertising Procedures.* This course completes the basic first year advertising program, and deals with such problems as the proper use of direct mail, outdoor advertising, trade shows and expositions, point-of-purchase material, specialties, premiums, and sampling. The course also considers copywriting, visual elements and layouts, the mechanics of printing and photoengraving, the functions of the modern advertising agency, advertising campaigns and budgets, the testing of advertising effectiveness, and the role of creativity in advertising. Prereq.: Advertising 227. *3 h. c.*

Upper Division Courses

329. *Advertising Copy.* Practical, creative applications of basic advertising objectives. Newspaper, magazine, trade paper, billboard, transportation, television, and radio copy are written as outside assignments and classroom projects. Prereq.: Advertising 228. *3 h. c.*

330. *Advertising Layout.* Graphic presentation of an advertising idea. Study of composition, design, balance, and the arrangement of such elements as illustration, headline, sub-headline, body copy, and signature according to their importance. Prereq.: Art 223 and Advertising 329. *3 h. c.*

335. *Display and Exhibits. Identical with Merchandising* 335. Prereq.: junior standing. *3 h. c.*

401. *Advertising Problems.* Application of fundamental theories and practices to various advertising and merchandising problems, including the development of budgets and the planning and proper use of advertising campaigns for retail, consumer, and industrial advertising. Prereq.: Advertising 330 and senior standing. *3 h. c.*

411. *Direct Mail Advertising.* The planning and preparation of the major forms of direct advertising, including discussion and writing of sales letters, folders, leaflets, booklets, catalogs, house magazines, etc., and a study of multigraphing, mimeographing, printing, and engraving. Prereq.: Advertising 330. *3 h. c.*

414. *Advertising Case Studies.* A study of case histories taken from leading business firms. Analyses of these cases and their backgrounds provide an understanding of the application of advertising to specific business situations. The student is in the position of the business executive who must make decisions on advertising problems. Prereq.: Advertising 330. *3 h. c.*

415. *Radio and Television Advertising.* Its history, organization, and practice from the viewpoints both of the advertiser and of the stations and networks. Consideration of such problems as choosing the station, the time and method of broadcast, types of programs, the writing and production of commercials, and merchandising the campaign. Prereq.: Advertising 329. *3 h. c.*

451. *Seminar.* Each student undertakes original research in some phase of advertising or the advertising business, and presents his findings to his classmates, who study and discuss them. Prereq.: senior standing with major in advertising. *1 to 3 h. c.*

Business Education

For the major in Business Education, see the School of Education section.

Business Organization

Associate Professors Reilly (chairman), Jenkins, and Kermani; Assistant Professors M. Browne, P. Chuey, S. Einstein, Long, Magner, C. Painter, Petrych, Potemra, Provance, Rees, Sinclair, and Teodorescu; Instructors Berquist, Boland, Brennan, Dastoli, Fortunato, Goldstein, Gutknecht, Lacich, Mathews, Meiners, and Walsh; Mr. Davidson, Mr. Desing, Mr. Edwards, Mr. Ferro, Miss Hamady, Mr. Hulme, Mr. Macejko, Mr. Millhone, Mr. D. Nelson, Mr. Pickens, Mr. Roberts, Mr. Rudibaugh, Mr. P. Smith, Mr. Swaney, Mr. Wharton, and Mr. Zerbonia; Lecturers Amedari and Beil.

The Department of Business Organization offers courses in various business subjects which (a) complement those of the other departments of the School of Business Administration, (b) provide many of the courses for the combined majors in general business, management, public administration, public relations, and traffic and transportation management, and for the major in business education, (c) provide for the minor in business organization, and (d) by the selection of specified courses in business organization, provide for a minor in management or transportation.

The combined major in *general business* consists of a total of 50 semester hours in advertising, business organization and merchandising. The combined major in *management* consists of a total of 45 semester hours in business organization, economics and merchandising. The combined major in *public administration* consists of a total of 45 semester hours in accounting, business organization, political science and sociology. The combined major in *public relations* consists of a total of 45 semester hours in accounting, advertising, business organization, English, and merchandising. The combined major in *traffic and transportation management* consists of a total of 45 hours in accounting and business organization. The minor for each of these majors consists of 15 additional semester hours in a related field or in a field approved by the Dean of the School of Business Administration. The major in *business education* is done under the direction of the School of Education.

Lower Division Courses

111. *Mathematics of Business I.* An introductory course covering the development of forms of business enterprises, management, employer-employee relationship, credit, banking, and elementary accounting. *3 h. c.*

131. *Mathematics of Business II.* General study of business mathematics, embracing fundamental number and algebraic concepts, percentage applications including mark-ups, mark-downs, discounts and simple interest, first degree and quadratic equations. *3 h. c.*

141R. *Business Algebra I.* Designed for students who are deficient in mathematics. Basically the course covers the same subject matter as Business Organization 141, but it is suited to the needs of the slower mathematics student since each topic is dealt with more intensively. Five hours a week. Prereq.: C or better in one year of high school algebra. *2 h. c. + 3 n. c.*

141. *Business Algebra I.* A review of elementary algebraic operations, logarithms, algebraic functions and their graphs, and the solution of linear and quadratic equations. Prereq.: C or better in two years of high school algebra. *2 h. c.*

142. *Business Algebra II.* Includes permutations and combinations, binominal theorem, arithmetic and geometric progressions, inequalities, determinants, theory of equations, and other topics. Prereq.: Business Organization 141 or 141R. *3 h. c.*

201. *Business Law I.* A study of legally binding agreements between persons and of their enforcement, including the making of a contract, the effect of fraud, duress, etc.: designed to provide a practical knowledge of contracts, agency, negotiable instruments, bailments, carriers, and sales. Prereq.: Communication 106 and Social Science 101. *3 h. c.*

202. *Business Law II.* A study of the law of partnerships, corporations, property, bankruptcy, and insurance. The course covers wills, estates, and the relationships of debtor and creditor. Prereq.: Business Organization 201. *3 h. c.*

210. *Public Relations.* An introduction to public relations and the media thereof, emphasizing management-labor-community relationships. Prereq.: sophomore standing. *3 h. c.*

212. *Business Letters and Reports.* A study of sound business letters and reports, stressing semantics, intelligent punctuation, effective sentences, psychology of tone, and the internal structure of the business letter. The location of information on any business subject in writing reports is also covered. Prereq.: Communication 107. *3 h. c.*

215. *Principles of Transportation.* The historical, economic, and regulatory background of transportation is studied. Emphasis is placed on the economic basis of rates and market centers. The valuation of property assets and their rate of return is given consideration. Prereq.: Economics 202. *3 h. c.*

221. *Mathematics of Finance.* Designed for students majoring in accounting and for advanced general business students. Graphs and index numbers, progression, foreign exchange, compound interest, annuities, bonds and bond interest valuation, asset valuation accounts, building and loan associations, permutations and combinations, probability and mortality, life annuities, net premiums, and valuation of life insurance policies. Prereq.: Business Organization 131 or 142, or Mathematics 102. *3 h. c.*

222. *Insurance.* Considerations essential in the purchase of insurance by the individual and by business enterprises: kinds of risk to be covered: types of coverage offered: evaluation of types of insurance companies: self-insurance: and methods used by insurance companies to establish rates. Prereq.: Business Organization 201. *3 h. c.*

229. *Freight Traffic.* Designed to cover shipping documents: freight classification: shipping rules: tariff publishing rules and interpretation. *3 h. c.*

230. *Transportation Rates.* Detailed analysis of rates, tariffs and classification. Application is made of class and commodity rates, exceptions, etc. Rate problems are used as a practical application of rates, tariffs and classification. Prereq.: Business Organization 229. *3 h. c.*

241. *Linear Mathematics.* An introduction to Boolean algebra, covering such topics as compound statements, sets and subsets, permutations, theory of probability, vectors and matrices, linear programming and the theory of games. Prereq.: Business Organization 142 or Mathematics 102. *3 h. c.*

Upper Division Courses

301. *Air Transportation.* An introductory course in air transportation, with emphasis on its historical background, federal regulation, and problems of monopoly, expansion, and government subsidies. *3 h. c.*

307. *Commercial Motor Transportation.* Passenger and freight operations of road vehicles, financing and leasing of vehicles for delivery, rate-making constructions and economics of motor carrier services, insurance

and proper protection for carriage, and liability for cargo and passengers; terminal methods and procedure, and federal, state and municipal regulations and restrictions as to weight, length, and public liability. *3 h. c.*

308. *Water Transportation.* The history of water transportation is studied. Other objectives of the course are to acquaint the student with the mechanics of making shipments through ocean transport; maritime law; cargo insurance; Federal regulations; and rate conferences. Prereq.: Business Organization 215. *3 h. c.*

317. *Real Estate Principles.* Principles of real property ownership and real estate practices; types of deeds, leases, restriction; real estate brokerage, selling, advertising; property management; subdividing and developing; zoning and its effects. Prereq.: Business Organization 202. *3 h. c.*

318. *Real Estate Finance and Problems.* Methods of financing the ownership or occupancy of real property. Real estate and real estate paper as a field of investment. Problems involved in appraisal, and practical methods of appraisal. Individual research. Prereq.: Business Organization 317. *2 h. c.*

320. *Advanced Public Relations.* Practical application of the principles of public relations, with attention to organization of ideas, writing for all types of media, psychology and timeliness of presentation, and extemporaneous speaking. Prereq.: standing as a junior. Advertising 227, Business Organization 210 and 212. *3 h. c.*

322. *Credits and Collections.* Credit instruments and classes of credits; credit agencies, collection agencies, collections, collection methods, and the place of the credit man in business. Prereq.: Business Organization 202 and Accounting 202. *3 h. c.*

325. *Fundamentals of Management.* A general introduction to the principles and problems of business organization and management; study and analysis of the four basic functions of management: planning, organizing, actuating, and controlling; further study of some basic problems of management, particularly the co-ordination of production, finance, marketing, personnel, and accounting in an established concern. Prereq.: Accounting 202, Business Organization 202, and Economics 202. *3 h. c.*

330. *Investment Analysis and Management.* General considerations for the buying of insurance, real estate, securities, etc., from an investment standpoint, with emphasis on the purchase of securities by individuals. Operational procedure of stock exchanges and brokers, use of various types of trusts, sources of investment data and their interpretation, collateral loans, and margin operations. Prereq.: Business Organization 131 or 142 and 201 and junior standing, or consent of teacher. *2 h. c.*

335 *Financial Management.* The policies and practices required for effectively planning and controlling the sources and uses of a company's funds are analyzed, with emphasis on the adaptation of financial principle promotion, long-term financing, income administration, expansion, and reorganization. Prereq.: Accounting 202 and Business Organization 202. *3 h. c.*

340. *Office Management and Methods.* Office organization, personnel, plan, and layout; office operation and control; time and duty analysis in office operations, including work flow and incentive methods; executive techniques required of an office manager. Prereq.: Business Organization 212. *3 h. c.*

346. *Industrial Traffic Management.* The nature and function of the traffic manager in industrial organizations; classification, tariffs, and rate formulation, routing, transit privileges, carriers, terminal services, claims procedure, regulation and regulatory procedure, warehousing, material handling, export and import phases of traffic management. Prereq.: Business Organization 215. *3 h. c.*

355. *News Writing and Reporting.* A beginning course with emphasis on beat and spot news reporting for newspapers and house organs.

Consideration of material related to newspaper offices, sources of news, writing styles, and public relations. Prereq.: junior standing. *3 h. c.*

355L. *News Writing and Reporting Workshop.* Identical with English 355L. *1 h. c.*

357. *Editing and Make-Up.* Emphasis on active preparation of newspaper and house organ stories, evaluation of news, news-gathering methods, plus principles of copyreading, editing, make-up, headlines, typography, illustrations, page-layout. Prereq.: Business Organization 355. *3 h. c.*

357L. *Editing and Make-Up Workshop.* Identical with English 357L. *1 h. c.*

404. *Personnel Management.* Deals with objectives, functions and organization of typical personnel programs, including problems involved in personnel administration, emphasizing job analysis, job evaluation and description, selection and placement, education and training, safety and health, employee services, employee relations, administration of wages and hours. Prereq.: Business Organization 325 or approval of department chairman. Listed also as Economics 404. *3 h. c.*

416. *Advanced Transportation.* Transportation theory regarding rate making, discriminatory practices and government regulations; combination of carriers; subsidy to carriers; labor problems and their control. Pereq.: Business Organization 215 and senior standing. *3 h. c.*

419. *Production Management.* An examination of the functions of a typical production planning and control department. Specific work on the techniques of scientific management, such as co-ordinating manufacturing plans with sales budgets, analysing production budgets for job scheduling, work flow and distribution, and keeping records. Discussion and analysis of specific types of management controls. Prereq.: Accounting 303 or 320, Business Organization 325, and Economics 305. *3 h. c.*

422. *Advanced Credits and Collections.* Credit policy determination in business and industry; planning an effective credit investigation program; analysis of financial statements for credit purposes, and control of accounts receivable in relation to sales, inventory, and working capital; collection of delinquent accounts, legal aids for credit departments. Prereq.: Business Organization 322. *2 h. c.*

433. *Public Utilities.* Development and importance of the public utility industry. The legal basis for its regulation and control. Public utility financing and problems concerning public utility economics. Prereq.: Economics 202. *3 h. c.*

450. *Development of Executive Ability.* The development of the nature, goals and limits in planning administrative actions, proper organization by departmentation of activities, delegation of authority, the role of staff members, decentralization versus centralization, the use of organizational charts and manuals, and the direction and control of administrative actions through budgets, standards, appraisals of performance, and test checks. Business Organization 450L must be taken concurrently. Prereq.: Business Organization 325 and senior standing, or consent of teacher. *2 h. c.*

450L. *Development of Executive Ability Laboratory.* A two hour a week discussion forum in which actual business case studies are presented. The class is divided into small groups for discussion and solving of a particular management problem. Each group presents its decision. Each student has a chance to conduct group discussions, presents his group's decisions to the class and participate in his group's decisions. Prereq.: Business Organization 325 and senior standing, or consent of teacher. *1 h. c.*

Commercial Art

For the combined major in Commercial Art, see *Advertising.*

General Business

For the combined major in General Business, see *Business Organization.*

Management

For the combined major in Management, see *Business Organization.*

Merchandising

Assistant Professors McK. Browne (chairman), M. Browne, Gillespie, Hanks, and Sinclair; Instructors Braden, Brickley, Buttar, Deiderick, Gran, Mathews, and Seifert; Mr. Balog, Mr. Crutcher, Mr. Hulme, Mr. LaLumia, Mrs. Roby, Mr. Roth, Mr. Sheppa, and Mr. Zetterquist.

Merchandising courses, retail and industrial, comprise a study of materials and their sources, retail and industrial buying and selling methods, quality analyses, fashions, and methods of promotion. They are designed for the student who wishes to become an owner, department manager, buyer, stylist, or sales executive.

A major in merchandising may be in either retail merchandising or industrial merchandising. A major in retail merchandising consists of 31 semester hours and a major in industrial merchandising consists of 30 semester hours. They include Merchandising 224, 225, 420 and other courses included in the curriculums printed below. A student majoring in retail merchandising or in industrial merchandising must have a minor of 15 hours in a related field or in a field approved by the Dean of the School of Business Administration.

Lower Division Courses

121. *Merchandising Mathematics.* This course is designed to provide complete, detailed and yet simple explanations of the mathematics of the many merchandising problems. The primary objective of the course is to aid the student to understand and apply merchandising mathematics to practical situations. *3 h. c.*

224. *Marketing.* A general survey, with attention to marketing functions and policies and marketing institutions. *3 h. c.*

225. *Salesmanship.* Knowledge of goods; study of customers and their wants, buying motives, and attitudes; planning a sale, meeting objections, closing the sale; cultivation of personality; problems in sales management, organization, planning, and research. May be counted as an Upper Division course in the business education curriculum. *3 h. c.*

Upper Division Courses

309. *Retail Marketing.* The entire marketing system considered from the consumer's viewpoint, with the retailer as his purchasing agent. Consumer attitude toward marketing institutions and their policies; sales promotion, publicity, and public relations as they affect consumer choice; government control as protection to the consumer. Prereq.: Merchandising 224 and 225. *2 h. c.*

320. *Industrial Marketing.* Characteristicts of manufacturers' goods; channels of distribution; function of middlemen; distribution costs; marketing research; government control and legal limitations. Product policies; service policies; packaging policies; price policies. Industrial advertising organization, planning and budgeting; use of advertising agencies and

national advertising media; sales manuals; dealer helps. Prereq.: Merchandising 224 and 225. *3 h. c.*

326. *Applied Salesmanship.* Practical application of the principles of salesmanship. Students prepare sales talks and demonstrations for class work, emphasizing house-to-house canvassing, over-the-counter selling, mail-order selling, direct-mail selling, and variations in selling techniques in different types of industries. Prereq.: Merchandising 225. *3 h. c.*

331. *Non-Textiles: Apparel Accessories.* This course is designed to meet the needs of buyers, copywriters, training departments, comparison shoppers, and instructors in the consumer or distributive education fields. Sources of raw materials, manufacturing processes, care, use, and selling points of the following types of merchandise are studied: leather, shoes, handbags, luggage, furs, jewelry, metals, precious and semi-precious stones, cosmetics, soaps, and perfume. *3 h. c.*

332. *Textile Fabrics.* Textile fibers: cotton, silk, linen, wool, nylon, rayon, and other new materials; methods of dyeing and printing; weaves: twill, plain, satin, jacquard; tests to distinguish the fibers. Government rulings are studied; uses and wearability of materials are investigated. Swatches of materials are used as illustrations. *3 h. c.*

333. *Furnishings.* A detailed study of furnishings for the home and industries. Consideration is given raw materials, the finished product, quality, selling points, government rulings, and the care of furnishings. Designed for buyers, purchasing agents, sales people and teachers. *3 h. c.*

335. *Display and Exhibits.* The principles of interior and window display. Selection and preparation of merchandise for display. Planning, selecting, and preparing merchandising arrangements and seasonal backgrounds. Selection, care, and employment of display fixtures and forms. Discussion of display department organization, functions, and management; merchandise promotion through display; window and departmental signs and price tickets; window and case illumination; and display rooms and work shop. Prereq.: junior standing. Listed also as Advertising 335. *3 h. c.*

407. *Chain Store Operation.* General merchandising for all types of chain stores; public relations, legal aspects of store operation, organization, personnel work in customer-employee relations, personnel training, buying, managers' most common problems; past, present, and future trends, and other phases. Prereq.: senior standing. *3 h. c.*

411. *Management of Retail Buying.* Study of principles and philosophy that determines excellence in merchandise selection. Management of buying functions, breadth of assortment, depth of stock and development of buying cycles. Gives ethical and legal considerations in buying. Suggests what to buy through consumer behavior, customer wants, and sales experiences. Prereq.: Merchandising 309. *3 h. c.*

412. *Problems in Retail Merchandising.* A collection of up-to-date mathematical problems faced by retailers. Gives ample definitions and background material, cases and discussion material for managerial decisions. Prereq.: Merchandising 411. *3 h. c.*

413. *Marketing Research.* Introduction to the major areas of research in marketing including definition of problems, sources of information, steps in the research process, market and sales analyses, market and sales potential studies, sampling, sales forecasting, product development, advertising, and qualitative research problems and procedures. Description of survey, observational and experimental types of research techniques. Review of research problems, approaches, and trends in industrial, retailing, wholesaling, trade association, advertising agency, publishing and consulting firms. Prereq.: Merchandising 309 or 320. *3 h. c.*

420. *Sales Promotion.* A critical analysis of the range and activities of sales promotion: determining what and where to promote, and selecting

merchandise for promotion; budgeting, planning, and executing promotional activities; external and internal methods of promotion; and co-ordination of all sales promotion activities. Prereq.: senior standing. *3 h. c.*

425. *Marketing Management.* A comprehensive study of the management functions in marketing including organization, planning, research, merchandising, sales, advertising and promotion, marketing channels, and control related to corporate policies and objectives. Detailed coverage of sales management practices including recruiting, selecting, training, equipping, compensating, and supervising. Review of the development and implementation of the marketing concept and the significance of product planning to an individual business firm. Prereq.: Merchandising 309 or 320. *3 h. c.*

430. *Women's Fashions.* The merchandising of women's fashions. A course designed to familiarize the student with trends and cycles in European and American markets, the co-ordination of styling and fashion promotion for women's apparel, and the determination of value in buying and selling women's merchandise. *2 h. c*

431. *Men's Fashions in Apparel.* A comprehensive study of men's clothing materials, their use, and when to wear them, and of day and night formal, summer formal, dinner, business, and play attire with the correct accessories. For fashion merchandise buyers and salespeople. *2 h. c.*

432. *Advanced Textile Fabrics.* An intensive study of materials used in women's, men's, infants', and children's wearing apparel and in house furnishings and domestics. Designed both to enable buyers and salespeople to select the correct materials and to provide the necessary mrechandising information. Prereq.: Merchandising 332 or consent of teacher. *3 h. c.*

440. *Blueprint Reading.* To be taken with Merchandising 441 for the purpose of teaching basic skills needed for reading and interpreting blue prints as an aid in industrial purchasing. Prereq.: senior standing. *2 h. c.*

441. *Industrial Purchasing I.* To present the organization, principles and procedures of industrial purchasing. Case studies are used and field trips are taken to various industries in the area. Purchasing agents are guest lecturers. Prereq.: Merchandising 320. *3 h. c.*

442. *Industrial Purchasing II.* Consideration of unit control, legal aspects, tools and industrial purchasing policies. Purchasing agents are guest lecturers. Prereq.: Merchandising 441. *3 h. c.*

451. *Seminar.* Each student undertakes original research in some phase of merchandising or the merchandising business and presents his findings to the class, who study and discuss them. Prereq.: senior standing with major in merchandising. *1 to 3 h. c.*

Public Administration, Public Relations, and Traffic and Transportation Management

For the combined major in Public Administration, Public Relations or Traffic and Transportation Management, see *Business Organization.*

Curriculums

Required Curriculums for the Degree of Bachelor of Science in Business Administration with the Major as Indicated

The following curriculums all lead to the degree of Bachelor of Science in Business Administration. Each curriculum contains all the courses prescribed for a major in the field indicated, and enables the student to complete a minor in a related field. It also provides the 125 to 136 credit hours (as specified) needed for graduation and includes courses that meet all general

course-requirements, all degree course-requirements, and the general course-level requirements.

R. O. T. C. students may have certain course-requirements waived or modified; see *Modifications for R. O. T. C. Students*, in the General Requirements and Regulations section.

Accounting

Attendance is required in the non-credit laboratory courses taken in conjunction with Accounting 201-202 and 301-302.

The Accounting curriculum requires a total of 136 hours.

First Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Bus. Org. 111 Principles of Business I	3
Bus. Org. 141-142 Business Algebra I-II	5
Comm. 105-106 Basic Course I-II	6
Mdsg. 224 Marketing	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	33

Second Year	Hrs.
Acctg. 301-302 & 301L-302L Intermediate Accounting & I. A. Laboratory	6
Bus. Org. 201 & 202 Business Law I and II	6
Bus. Org. 241 Linear Mathematics	3
Comm. 107 Basic Course III	3
Econ. 202 Principles of Economics	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Science	6
H. E. & P. E. activity courses	1
	37

Specialization in Public Accounting

Third Year	Hrs.
Acctg. 300 Basic Concepts of Machine Accounting	2
Acctg. 303 Basic Cost Accounting	3
Acctg. 304 Advanced Cost Accounting	3
Acctg. 401 Advanced Accounting	3
Acctg. 403 & 404 Federal Taxes I & II	6
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 222 Insurance	3
Bus. Org. 322 Credits and Collections	3
Econ. 203 Principles of Economics	3
Econ. 305 Economic and Social Statistics	3
Psych. 201 General Psychology	3
	35

Fourth Year	Hrs.
Acctg. 405 State and Local Taxes	3
Acct. 407 Auditing	3
Acctg. 408 Auditing Practice and Report Writing	2
Acctg. 415 Systems	3
Bus Org. 325 Fundamentals of Management	3
Bus. Org. 450 & 450L Development of Executive Ability and Laboratory	3
Econ. 304 Public Finance, or 306 Intermediate Economic Analysis, or 403 Business and Government	3
Economics elective	3
Philosophy and Religion elective or Humanities 401 or 402	3
Liberal Arts elective	3
Elective	2
	31

Specialization in Private Accounting

Third Year	Hrs.
Acctg. 300 Basic Concepts of Machine Accounting	2
Acctg. 303 Basic Cost Accounting	3
Acctg. 304 Advanced Cost Accounting	3
Acctg. 401 Advanced Accounting	3
Acctg. 403 & 404 Federal Taxes I & II	6
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 322 Credits and Collections	3
Econ. 203 Principles of Economics	3
Econ. 305 Economics and Social Statistics	3
Psych. 201, General Psychology	3
Liberal Arts elective	3
	35

Fourth Year	Hrs.
Acctg. 405 State and Local Taxes	3
Acctg. 407 Auditing	3
Acctg. 415 Systems	3
Acctg. 416 Budgetary Control	3
Acctg. 417 Controllership	3
Bus. Org. 325 Fundamentals of Management	3
Bus. Org. 419 Production Management	3
Philosophy and Religion elective or Humanities 401 or 402	3
Liberal Arts elective	3
Electives	4
	31

Advertising

The Advertising curriculum requires a total of 125 hours.

First Year	Hrs.
Art 110 Color and Design I	3
Bus. Org. 111 Principles of Business I	3
Geog. 119 Economic Geography	3
Bus. Org. 131 Mathematics of Business	3
Comm. 105-106 Basic Course I-II	6
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Adv. 227 Advertising Principles	3
Adv. 228 Advertising Procedures	3
Art 223 Advertising Art I	3
Comm. 107 Basic Course III	3
Hist. 201 & 202 The United States	6
Mdsg. 224 Marketing	3
Mdsg. 225 Salesmanship	3
H. E. & P. E. activity courses	1
	31

Third Year	Hrs.
Adv. 329 Advertising Copy	3
Adv. 330 Advertising Layout	3
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 210 Public Relations	3
Bus. Org. 212 Business Letters and Reports	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Mdsg. 331 Non-Textiles, 332 Textiles, or 333 Furnishings	3
Philosophy and Religion Elective or Humanities 401 or 402	3
Psych. 201 General Psychology	3
	30

Fourth Year	Hrs.
Adv. 401 Advertising Problems	3
Adv. 411 Direct Mail Advertising	3
Adv. 414 Advertising Case Studies	3
Adv. 415 Radio and Television Advertising	3
Bus. Org. 322 Credits and Collections	3
Econ. 305 Economic and Social Statistics	3
Mdsg. 413 Marketing Research	3
Electives (Upper Division)	9
	30

Commercial Art

The Commercial Art curriculum requires a total of 130 hours.

First Year	Hrs.
Art 110, 111 Color and Design I	6
Art 113, 114 History and Appreciation of Art: General	6
Bus. Org. 111 Principles of Business I	3
Bus. Org. 131 Mathematics of Business II	3
Comm. 105-106 Basic Course I-II	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Adv. 227 Advertising Principles	3
Adv. 228 Advertising Procedures	3
Art 201 Life Drawing and Painting, or 203 Drawing	3
Art 223 Advertising Art I	3
Comm. 107 Basic Course III	3
Mdsg. 224 Marketing	3
Mdsg. 225 Salesmanship	3
Science	6
H. E. & P. E. activity courses	1
	34

Third Year	Hrs.
Adv. 329 Advertising Copy	3
Adv. 330 Advertising Layout	3
Art 224 Advertising Art I	3
Art 303 Painting I	3
Art 327 Advertising Art II	3
Bus. Org. 201 Business Law I	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Mdsg. 332 Textile Fabrics	3
Psych. 201 General Psychology	3
	33

Fourth Year	Hrs.
Adv. 401 Advertising Problems	3
Art 301, 302 Technical Problems in Art	6
Art 306 History and Appreciation of Art: Modern	3
Econ. elective (Upper Division)	3
Mdsg. 333 Non-textiles: Home Furnishings	3
Merchandising elective (Upper Division)	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives (Upper Division)	6
	29

General Business

The General Business curriculum requires a total of 130 hours.

First Year	Hrs.
Bus. Org. 111 Principles of Business I	3
Bus. Org. 131 Mathematics of Business II	3
Comm. 105-106 Basic Course I-II	6
Geog. 119 Economic Geography	3
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	31

Second Year	Hrs.
Acctg. 201-202 and 201L-202L Elementary Accounting & E. A. Laboratory	6
Adv. 227 Advertising Principles	3
Adv. 228 Advertising Procedures	3
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 210 Public Relations	3
Comm. 107 Basic Course III	3
Econ. 202 Principles of Economics	3
Mdsg. 224 Marketing	3
Mdsg. 225 Salesmanship	3
H. E. & P. E. activity courses	1
	34

Third Year	Hrs.
Acctg. 303 Basic Cost Accounting or Acctg. 320 Managerial Accounting	3
Adv. 329 Advertising Copy or elective (Upper Division)	3
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 215, 301, 307, or 308	3
Bus. Org. 222 Insurance	3
Bus. Org 325 Fundamentals of Management	3
Bus. Org. 330 Investment Analysis and Management	2
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Psych. 201 General Psychology	3
	32

Fourth Year	Hrs.
Bus. Org. 322 Credits and Collections	3
Bus. Org. 335 Financial Management	3
Bus. Org. 404 Personnel Management	3
Bus. Org. elective (400 level)	3
Econ. 305 Economic and Social Statistics	3
Econ. 319 Economics of American Industry or elective (Upper Division)	3
Economics elective (Upper Division)	3
Mdsg. 411 Management of Retail Buying or 441 Industrial Purchasing I	3
Msdg. 412 Problems in Retail Merchandising or 442 Industrial Purchasing II	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Elective (Upper Division)	3
	33

Management

Suggested Curriculum for the Degree of Bachelor of Science in Business Administration with the Major in Managment and the Minor in Accounting

The Management curriculum requires 136 hours.

First Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Comm. 105-106 Basic Course I-II	6
Bus. Org. 111 Principles of Business I	3
Bus. Org. 141-142 Business Algebra I-II	5
Mdsg. 224 Marketing	3
Soc. Sci. 101 Introduction to the Social Sciences I	3
Soc. 203 Principles of Sociology	3
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	33

Second Year	Hrs.
Acctg. 301-302 & 301L-302L Intermediate Accounting & I. A. Laboratory	6
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 210 Public Relations	3
Bus. Org. 241 Linear Mathematics	3
Comm. 107 Basic Course III	3
Econ. 202 Principles of Economics	3
Science (laboratory)	8-10
H. E. & P. E. activity courses	1
	33-35

Third Year	Hrs.
Acctg. 303 Basic Cost Accounting	3
Acctg. 304 Advanced Cost Accounting	3
Adv. 227 Advertising Principles	3
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 215 Principles of Transportation or 222 Insurance	3
Econ. 203 Principles of Economics	3
Econ. 305 Economic and Social Statistics	3
Econ. 306 Intermediate Economic Analysis	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Psych. 201 General Psychology	3
	36

Fourth Year	Hrs.
Bus. Org. 322 Credits and Collections	3
Bus. Org. 325 Fundamentals of Management	3
Bus. Org. 335 Financial Management	3
Bus. Org. 404 Personnel Management	3
Bus. Org. 419 Production Management	3
Bus. Org. 450 and 450L Development of Executive Ability and Laboratory	3
Hist. 388 History of American Business	3
Merchandising elective (Upper Division)	3
Philosophy and Religion elective or Humanities 401 or 402	3
Electives	6-8
	33-35

The following courses are suggested as electives:

Acctg. 416 Budgetary Control
Acctg. 417 Controllership
Bus. Org. 320 Advanced Public Relations
Econ. 303 Financial Organization
Econ. 304 Public Finance
Econ. 319 Economics of American Industry
Econ. 401 Labor Problems
Pol. Sci. 201 American National Government and Politics
Pol. Sci. 202 American State & Local Government
Pol. Sci 307 American Political Parties
Pol. Sci. 308 Public Administration
Psych. 300 Social Psychology
Psych. 308 Personality and Mental Hygiene
Sp. & Dram. 213 Public Speaking
Sp. & Dram. 315 Debating & Public Discussion

Merchandising

The Merchandising curriculums require 125 hours.

First Year	Hrs.
Bus. Org. 111 Principles of Business I	3
Comm. 105-106 Basic Course I-II	6
Geog. 119 Economic Geography	3
Mdsg. 121 Merchandising Mathematics	3
Mdsg. 224 Marketing	3
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Adv. 227 Advertising Principles	3
Adv. 228 Advertising Procedures	3
Bus. Org. 210 Public Relations	3
Bus. Org. 212 Business Letters and Reports	3
Comm. 107 Basic Course III	3
Econ. 202 Principles of Economics	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Mdsg. 225 Salesmanship	3
H. E. & P. E. activity courses	1
	31

Specialization in Retail Merchandising

Third Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting and E. A. Laboratory	6
Adv. 329 Advertising Copy	3
Bus. Org. 201 & 202 Business Law I & II	6
Mdsg. 309 Retail Marketing	2
Mdsg. 326 Applied Salesmanship or 425 Marketing Management, or Merchandising elective	3
Mdsg. 331 Non-Textiles: Apparel Accessories or 333 Furnishings	3
Psych. 201 General Psychology	3
Elective (Upper Division)	3
	29

Fourth Year	Hrs.
Acct. 303 Basic Cost Accounting, or 320 Managerial Accounting	3
Bus. Org. 322 Credits and Collections	3
Econ. 305 Economic and Social Statistics	3
Mdsg. 332 Textile Fabrics	3
Msdg. 411 Management in Retail Buying	3
Msdg. 412 Problems in Retail Merchandising	3
Mdsg. 413 Marketing Research or 432 Advanced Textile Fabrics	3
Mdsg. 420 Sales Promotion	3
Mdsg. 430 Women's Fashions or 431 Men's Fashions in Apparel	2
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives	2
	31

Specialization in Industrial Merchandising

Third Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 215 Principles of Transportation, or 301 Air Transportation, or 307 Commercial Motor Transportation	3
Bus. Org. 325 Fundamentals of Management	3
Mdsg. 320 Industrial Marketing	3
Mdsg. 331 Non-Textiles: Apparel Accessories, or 332 Textile Fabrics, or 333 Furnishings	3
Psych. 201 General Psychology	3
Philosophy and Religion Upper Division elective or Humanities 401 or 402	3
	30

Fourth Year	Hrs.
Acctg. 303 Basic Cost Accounting, or 320 Managerial Accounting	3
Bus. Org. 322 Credits and Collections	3
Bus. Org. 419 Production Management	3
Econ. 305 Economic and Social Statistics	3
Mdsg. 413 Marketing Research	3
Mdsg. 420 Sales Promotion	3
Mdsg. 440 Blueprint Reading	2
Mdsg. 441 & 442 Industrial Purchasing I & II	6
Merchandising Upper Division elective	4
	30

Public Administration

Suggested Curriculum for the Degree of Bachelor of Science in Business Administration with the Major in Public Administration and a Suggested Minor in Economics

The Public Administration curriculum requires a total of 136 hours.

First Year	Hrs.
Bus. Org. 111 Principles of Business I	3
Bus. Org. 131 Mathematics of Business II	3
Comm. 105-106 Basic Course I-II	6
Geog. 119 Economic Geography	3
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	31

Second Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Bus. Org. 201 & 202 Business Law I & II	6
Comm. 107 Basic Course III	3
Econ. 202 & 203 Principles of Economics	6
Engl. 200, 203, 204, 205, 206, 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Mdsg. 224 Marketing	3
Pol. Sci. 201 American National Government & Politics, or 202 American State & Local Government	3
H. E. & P. E. activity courses	1
	37

Third Year	Hrs.
Acctg. 320 Managerial Accounting	3
Bus. Org. 210 Public Relations	3
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 322 Credits & Collections	3
Econ. 304 Public Finance	3
Econ. 305 Economic and Social Statistic	3
Pol. Sci. 308 Public Administration	3
Psych. 201 General Psychology	3
Philosophy and Religion elective or Humanities 401 or 402	3
Sp. & Dram. 213 Public Speaking	2
Soc. 203 Principles of Sociology	3
	3
	35

Fourth Year	Hrs.
Acctg. 420 Governmental Accounting	3
Bus. Org. 325 Fundamentals of Management	3
Bus. Org. 404 Personnel Management	3
Bus. Org. 450 & 450L Development of Executive Ability and Laboratory	3
Econ. 403 Business and Government	4
Hist. 388 History of Business	3
Mdsg. 320 Industrial Marketing	3
Pol. Sci. 312 Municipal Government and Administration	3
Soc. 330 Industrial Sociology	3
Soc. 406 Social Control	3
Electives	3
	34

owing courses are suggested as electives:

eal Estate Principles
dvanced Public Relations
vestments
inancial Management
ffice Management
Problems
Since 1900
manship

Mdsg. 440 Blueprint Reading
Mdsg. 441 Purchasing I
Pol. Sci. 304 International Politics
Pol. Sci. 307 Am. Political Parties
Pol. Sci. 403 Comparative Government
Psych. 300 Social Psychology
Sp. & Dram. 217 Broadcasting
Soc. 311 Juvenile Delinquency
Soc. 331 Urban Sociology

Public Relations

d Curriculum for the Degree of Bachelor of Science in ss Administration with the Major in Public Relations

blic Relations curriculum requires 125 hours. At least nine ives, including three hours of literature, must be courses in the rts and Sciences. Suggested electives are listed below the cur- ıe student should see also *Public Relations*, in the College of nces section.

First Year	Hrs.
Bus. Org. 111 Principles of Business I	3
Bus. Org. 131 Mathematics of Business II	3
Comm. 105-106 Basic Course I-II	6
Geog. 119 Economic Geography	3
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	31

Second Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Adv. 227 Advertising Principles	3
Adv. 228 Advertising Procedures	3
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 210 Public Relations	3
Comm. 107 Basic Course III	3
Mdsg. 224 Marketing	3
Econ. 202 Principles of Economics	3
H. E. & P. E. activity courses	1
	31

Third Year	Hrs.
Acctg. 303 Basic Cost Accounting or Acctg. 320 Managerial Accounting	3
Adv. 329 Advertising Copy	3
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 325 Fundamentals of Management	3
Econ. 203 Principles of Economics	3
Econ. 305 Economic and Social Statistics	3
Engl. 200, 203, 204, 205, 206 or 275	3
Hist. 201 & 202 The United States	6
Psych. 201 General Psychology	3
Elective (Upper Division)	3
	33

Fourth Year	Hrs.
Bus. Org. 320 Advanced Public Relations	3
Bus. Org. 322 Credits and Collections	3
Bus. Org. 355 News Writing and Reporting	3
Bus. Org. 357 Editing and Make-Up	3
Bus. Org. 404 Personnel Management	3
Econ. 319 Economics of American Industry	3
Econ. 401 Labor Problems	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives (Upper Division)	6
	30

The following courses are suggested as electives:

Bus. Org. 335 Financial Management
Econ. 303 Financial Organization
Hist. 252 Latin America
Hist. 302 Economic History of the U.S.
Hist. 308 The Far East
Hist. 388 The History of American Business
Literature courses (English or foreign)
Philosophy and Religion 201C-J-O-P Contemporary Religion and its Backgrounds
Philosophy and Religion 301G or 301S History of Philosophy and 302G or 302S History of Modern Philosophy
Pol. Sci. 304 International Politics
Pol. Sci. 305 Foreign Policies of the Great Powers
Psych. 300 Social Psychology
Psych. 401 Business Psychology
Psych. 405 Interviewing and Counseling
Soc. 203 Principles of Sociology
Soc. 404 Modern Social Movements
Soc. 405 Social Control
Sp. and Dram. 213 Public Speaking
Sp. and Dram. 217 Principles and Practices of Broadcasting
Sp. and Dram. 315 Debating and Public Discussion

Traffic and Transportation Management

Suggested Curriculum for the Degree of Bachelor of Science in Business Administration with the Major in Traffic and Transportation Managment

The Traffic and Transportation Management curriculum requires 130 hours. There may be substitution of courses or waiver of courses because of experience at the discretion of the adviser and the chairman of the Department of Business Organization.

First Year	Hrs.
Bus. Org. 111 Principles of Business I	3
Bus. Org. 131 Mathematics of Business II	3
Comm. 105-106 Basic Course I-II	6
Geog. 119 Economic Geography	3
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. 109M or 109W Health Orientation 100	1
	31

Second Year	Hrs.
Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory	6
Bus. Org. 201 & 202 Business Law I & II	6
Bus. Org. 210 Public Relations	3
Bus. Org. 215 Principles of Transportation	3
Bus. Org. 229 Freight Traffic	3
Bus. Org. 230 Transportation Rates	3
Comm. 107 Basic Course III	3
Econ. 202, 203 Principles of Economics	6
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	37

Third Year	Hrs.
Acctg. 303 Basic Cost, or 320 Managerial Accounting	3
Bus. Org. 212 Business Letters and Reports	3
Bus. Org. 222 Insurance	3
Bus. Org. 307 Motor Transportation	3
Bus. Org. 308 Water Transportation	3
Econ. 305 Economic and Social Statistics	3
Econ. 319 Economics of American Industry	3
Engl. 200, 203, 204, 205, 206, 251, 253, or 275	3
Hist. 201 & 202 The United States	6
Sp. & Dram. 213 Public Speaking	2
	32

Fourth Year	Hrs.
Bus. Org. 322 Credits and Collections	3
Bus. Org. 335 Financial Management	3
Bus. Org. 346 Industrial Traffic Management	3
Bus. Org. 404 Personnel Management	3
Bus. Org. 416 Advanced Transportation	3
Bus. Org. 433 Public Utilities	3
Econ. 321 International Trade and Finance	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives (Upper Division)	6
	30

The following courses are suggested as electives:

Engl. 370 Major American Authors
Engl. 382 The American Novel
Engl. 406 Modern Drama
Hist. 388 The History of American Business
Philosophy and Religion 305G Ethics
Philosophy and Religion 309G or 309S Aesthetics
Philosophy and Religion 310G Making of the Modern Mind
Philosophy and Religion 327S Moral Conduct
Philosophy and Religion 329S Contemporary Philosophy
Philosophy and Religion 331G Philosophy in America
Pol. Sci. 350 The Government of the Soviet
Soc. 330 Industrial Sociology

Secretarial Studies

Instructors Craig (registrar and head of the Evening Division), Turner (head of the Day Division), Cortese, Hanna, Powell, Sebestyen, and Williamson: Mr. Broderick, Miss Cebak, Mrs. Davies, Miss Fisher, Mr. Janosik, Mr. Lapin, Mr. Litty, Mr. Maslen, Mr. T. Murphy, Miss Olenich, Mrs. Spiker, and Mr. Zupp.

The courses described below are offered in the Secretarial School. They are designed for students interested in secretarial positions and the more advanced types of office work. They give credit only toward (1) the degree of Bachelor of Science in Business Administration with a major in secretarial studies, (2) the degree of Bachelor of Science in Education with a major in business education, and (3) the title of Associate in Business Administration.

For the first of these, a curriculum is suggested following the course descriptions below; for the second, consult the School of Education section; for the third, see the first two years of the curriculum below.

Lower Division Courses

020. *Notehand.* A notetaking system for personal use with integrated instruction and practice on how to take and organize notes. Not for vocational use. *Evaluated as two hours for load and billing purposes. No credit.*

100. *Typewriting.* For beginners. The basic principles of touch typewriting are presented. A speed of 20 words a minute must be attained. *Evaluated as two hours for load and billing purposes. No credit.*

101. *Typewriting.* Application of typing skill to business problems, including letter-writing, legal papers, tabulating, forms, manuscript writing, mimeographing, and speed work. Prereq.: Secretarial Studies 100, or equivalent. *2 h. c.*

104, 105. *Secretarial Accounting.* Designed to give students a foundation in the theory and practice of accounting principles as these principles apply to single proprietorship, partnership, and corporations. *3 + 3 h. c.*

104L, 105L. *Secretarial Accounting Laboratory.* Required of all students in Secretarial Studies 104 and 105. *No credit.*

200. *Shorthand.* For beginners. The fundamental principles of the Gregg system are presented. Volume I is completed. Open only to day students. *Evaluated as four hours for load and billing purposes. No credit.*

200A-200B. *Shorthand.* Identical with Secretarial Studies 200. Open only to evening students. *Evaluated as two hours each semester for load and billing purposes. No credit.*

201. *Typewriting.* Advanced typewriting with emphasis on speed and accuracy. A speed of 65 words a minute should be attained. Prereq.: Secretarial Studies 101, or equivalent. *2 h. c.*

202. *Business Mathematics.* The application of the fundamental processes of mathematics to business transactions, including payrolls, taxes, percent, discounts, banking, marketing, investments, insurance, merchandising, and general office situations. *3 h. c.*

207. *Business Communication.* A study of spelling, business vocabulary, punctuation, and correct word usage needed in shorthand transcription. The mechanics, psychology, and principles of effective letter writing. *3 h. c.*

208. *Business Law.* A brief survey of business law as it relates to contracts, agencies, negotiable instruments, bailments, sales, real and personal property, wills, partnerships, corporations, and insurance. *3 h. c.*

209. *Clerical Office Practice.* Office practices and procedures for students who are not taking Secretarial Studies 403. Includes office problems, mailing, filling in forms, letter writing, general office procedures, etc. Prereq.: Secretarial Studies 101. *2 h. c.*

210. *Production Typing.* Intensive drill for speed and accuracy on typewriting production problems. Prereq.: Secretarial Studies 101. *2 h. c.*

215. *Business Machines.* The operation of key-driven, printing, and rotary calculators. Addition, subtraction, multiplication and division, with application to business problems. *3 h. c.*

216. *Business Machines.* The operation of transcribing and bookkeeping machines. *3 h. c.*

217. *Comprehensive Business Machines.* The operation of adding, calculating, bookkeeping, and transcribing machines. For business education majors. Prereq.: Secretarial Studies 101, or equivalent. *3 h. c.*

Upper Division Courses

300. *Shorthand.* Beginning dictation and transcription. A speed of 80 words a minute must be attained. Open only to day students. Prereq.: Secretarial Studies 100 and 200, or passing a qualifying test. *4 h. c.*

300A-300B. *Shorthand.* Beginning dictation and transcription. A speed of 60 words a minute must be attained in the first course, 80 words a minute in the second. Prereq.: Secretarial Studies 100 and 200, or passing a qualifying test. Open only to evening students. *2 + 2 h. c.*

302. *Shorthand.* A speed of 100 words a minute in dictation and a speed of 25 words a minute in transcription should be attained. Prereq.: Secretarial Studies 201 and 300 or 300B. *2 h. c.*

303. *Shorthand.* A dictation speed of 120 words a minute and a transcription speed of 35 words a minute should be attained. Prereq.: Secretarial Studies 302. *2 h. c.*

304. *Advanced Dictation and Transcription.* For increased speed and accuracy in transcription from shorthand notes. Prereq.: Secretarial Studies 302. *2 h. c.*

305. *Specialized Dictation.* Dictation and transcription in specialized fields: law, medicine, etc. Prereq.: Secretarial Studies 304. 2 *h. c.*

310. *Introduction to Data Processing.* A study of the vocabulary and media of data processing. Problems in procedures and applications of basic current uses. Prereq.: Secretarial Studies 104 and 217. 2 *h. c.*

320. *Personal Relations in Business.* A study of the secretary in business: her effectiveness as related to her personality and to her concept of the fundamental purposes of business. Prereq.: Psychology 201. 3 *h. c.*

403. *Office Practice.* Application of theory to practice: typical office problems, dictation, transcription, copy-work, answering letters, filling in forms, and discussion of office procedure. Prereq.: Secretarial Studies 300 or 300B. 3 *h. c.*

404. *Filing.* Basic filing systems, location of material, installation and reorganization of filing systems, with emphasis on greater efficiency of materials management. *1 h. c.*

405. *Shorthand and Typewriting Seminar.* The correlation of shorthand, typewriting, and transcription for teachers. For Business Education majors. Prereq.: Secretarial Studies 101 and 301, or equivalent. *1 h. c.*

Curriculum

Suggested Curriculum Leading to the Degree of Bachelor of Science in Business Administration with a Major in Secretarial Studies

A student may receive the title of Associate in Business Administration after satisfactorily completing the first two years of this curriculum.

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Sec. St. 101 and 201 Typewriting	4
Sec. St. 202 Business Mathematics	3
Sec. St. 215 Business Machines	3
Sec. St. 300 Shorthand	4
Sec. St. 302 Shorthand	2
Bus. Org. 111 Principles of Business	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	35

Second Year	Hrs.
*Comm. 107 Basic Course III	3
Sec. St. 104 & 105 Secretarial Accounting	6
Sec. St. 207 Business Communication	3
Sec. St. 208 Business Law	3
Sec. St. 303 Shorthand	2
Sec. St. 304 Advanced Dictation and Transcription	2
Sec. St. 403 Office Practice	3
Sec. St. 404 Filing	1
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
Electives	8
	35

Third Year	Hrs.
**Acctg. 303 Basic Cost Accounting or 320 Managerial Accounting	3
Bus. Org. 210 Public Relations	3
Econ. 202, 203 Principles of Economics	6
Engl. 202, 203, 204, 205, 206 251, 253, or 275, or Hum. 201	3
Hist. 201 & 202 The United States	6
Mdsg. 224 Marketing	3
Science	6
	30

Fourth Year	Hrs.
Adv. 227 Advertising Principles	3
Bus. Org. 322 Credits and Collections	3
Bus. Org. 325 Fundamentals of Management	3
Bus. Org. 335 Financial Management	3
Bus. Org. elective (Upper Division)	3
Econ. 305 Economic and Social Statistics	3
Philosophy and Religion elective or Humanities 401 or 402	3
Electives (Upper Division)	11
	32

*Not required for the title of Associate in Business Administration.

**The student's qualifications for entering this course will be determined by the chairman of the Department of Accounting.

The School of Education

Joseph Franklin Swartz, Dean

ORGANIZATION AND DEGREES

The School of Education is primarily an Upper Division school and has four departments: General Education, Elementary Education, Secondary Education, and Special Education. With the cooperation of the College of Arts and Sciences, the School of Business Administration, and the Dana School of Music, it prepares teachers for both public and private schools.

Professional courses are offered leading to teacher certification and to either of two degrees: Bachelor of Science in Education or Bachelor of Arts. Majors may be earned in one of the four departments of the school or in a teaching field. The degree may be conferred either by the School of Education, by the College of Arts and Sciences, or by the Dana School of Music, according to the course or the degree the student seeks, as outlined below. A two-year curriculum leading to a cadet certificate is also offered.

The student who wants to qualify for a teaching certificate normally enrolls in the College of Arts and Sciences for the first two years and must be admitted to the School of Education by his junior year in order to become a candidate for certification. (The candidate for the cadet certificate, however, enrolls in the School of Education after completing 30 hours. A special bulletin for the cadet program is available from the School of Education.)

All candidates for any form of teaching certificate must meet the requirements for admission to the School of Education, but the degree earned may be conferred in accordance with the area of major emphasis:

1. The candidate for the elementary or kindergarten-primary certificate normally earns a Bachelor of Science in Education degree. He may qualify for the Bachelor of Arts degree, but this will usually entail a greater number of credit hours. The degree is conferred by the School of Education.

2. The candidate for the high school certificate may major either in secondary education or in a subject-matter field, and may earn either degree with either type of major. If the major is in secondary education the degree is conferred by the School of Education; if it is in a subject-matter field, it is conferred by the College of Arts and Sciences, with the following exceptions:

   a. If the major is in business education, the degree is conferred by the School of Education.

b. If the major is in music, the degree is conferred by the Dana School of Music.

3. The student who majors in general education normally qualifies for the Bachelor of Arts degree conferred by the School of Education.

4. The student in the Dual Program, leading to both high school and elementary teaching certificates, majors in elementary education and receives his degree from the School of Education.

5. The degree of Bachelor of Science in Education is granted only to the student who qualifies for a teaching certificate.

6. Certificates are awarded only upon application. The appropriate application form is available at the School of Education office. Students anticipating certification must get an application form and file it in the Education office at the beginning of the semester or term which the requirements are to be completed in.

Requirements for the Degrees

Bachelor of Science in Education and Bachelor of Arts

It is the student's responsibility to see that he satisfies all the graduation requirements for the degree he seeks. These consist of:

1. The pre-college or preparatory courses for each degree. These are normally taken in high school, but if not, they may be made up before the junior year in the University. They are listed briefly below; for further information see the General Requirements and Regulations section.

2. The courses and other requirements to be completed in the University. They are explained in the General Requirements and Regulations section but are recapitulated below.

The curriculums leading to these degrees require a minimum of 125 semester hours of credit and are designed to be completed in four academic years. A student willing and able to carry heavier loads successfully may finish in less time.* If a student wishes to include summer courses in his program, he should consult his adviser.

R. O. T. C. students are allowed certain modifications of the requirements, as explained in the General Requirements and Regulations section.

---

*This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while in college.

PRE-COLLEGE

SUBJECT	B. S. in Ed. HIGH SCHOOL UNITS	A. B. HIGH SCHOOL UNITS
English	3	3
United States history and civics	1	1
A foreign language	—	2
Algebra	—	1 or 2*
Geometry	—	1
Any mathematics	1	—
Biology, chemistry, or physics	—	1
Any science subjects or additional mathematics	1	—

IN THE UNIVERSITY

	SEMESTER HOURS OF CREDIT	
REQUIREMENTS IN ADDITION TO COURSES		
Completion of the minimum number of semester hours of credit required for graduation	125	125
Upper Division status (including completion of any specified preparatory units lacking at entrance)		
Major and minor requirements: For either the A. B. degree or the B. S. in Ed. degree the major may be in Education, or in any teaching field; the minor, unless determined by a prescribed curriculum, may be in any subject or subjects in which it is possible to take 15 semester hours. See the year-by-year curriculums at the end of this section.		
Course-level requirements		
Point index requirements		
Residence requirement		
Application for graduation		
COURSE REQUIREMENTS (OTHER THAN THE MAJOR AND MINOR)		
BASIC COURSES		
Communication 105-106-107, Basic Course I, II, III	9	9
Health Education and Physical Education 109M or 109W, Health Education	2	2
Health Education and Physical Education activity courses	2	2
Orientation 100, Freshman Orientation**	1	1
AREA COURSES		
Social studies:		
Social Science 101 and 102, Introduction to the Social Sciences I, II	6	6
History 201 and 202, The United States	6	6
Religion:		
A course in the Philosophy and Religion department, or Humanities 401 or 402, Older Classics I, II***	3	3

*One is enough for the student taking mathematics 107 or 151, or for a mathematics minor.

**Not required of a part-time student until he has completed 64 semester hours.

***For students working for high school certification, six hours of philosophy or three each of philosophy and fine arts are required.

	B. S. in Ed.	A. B.
Science	9	11
For the B. S. in Ed. degree: six hours in any science subjects plus an additional three hours in mathematics or science.		
For the A. B. degree: eight hours in one laboratory science (in the departments of biology, chemistry, geology, or physics) plus three hours of course work in the departments of astronomy, biology, chemistry, geology, mathematics, or physics.		
OTHER COURSES		
A foreign language (ancient or modern)	—	6 or 12
For the A. B. degree: the requirement is a reading knowledge of the language, defined as what a student should know after two years of successful college study or its equivalent. Whether a student will need six or twelve semester hours to attain this knowledge depends on his high school language courses: see *Proficiency in a Foreign Language* in the College of Arts and Sciences section.		
English	3	3
Any 200-level literature course, or Humanities 201, Mythology in Literature.		
Psychology 201, General Psychology, and 202, Educational Psychology	6	6
Balance required for graduation (including Education courses)	78	64-70

COURSES OF INSTRUCTION AND CURRICULUMS†

Faculty

Professors Swartz and Wilcox; Associate Professors Chrisp and Shipman; Assistant Professors Babisch, Baker, Braden, Christopher, and Walter; Instructors Beckett, D'Isa, Jewett, Miller, Reese, and Turner; Mr. Abramovitz, Mr. Baehler, Miss Bailey, Miss Batham, Mr. Bishop, Mr. Burke, Mrs. Collingwood, Miss A. Davis, Miss S. Davis, Mr. Fedor, Mrs. Flood, Miss Garrison, Mr. Honey, Miss Jacobs, Miss Juhasz, Mr. Knisely, Miss Laughbaum, Miss Ledger, Dr. Liggitt, Mr. MacDonald, Mrs. Martin, Miss McCune, Mr. McEvoy, Mr. Mecak, Miss E. Miller, Dr. Moore, Mr. W. Moore, Miss Powers, Miss Reese, Miss Robertson, Mrs. Roderick, Dr. Schoenhard, Mr. P. Smith, Mrs. Sutton, Mr. Trucksis, Dr. Vanaman, Dr. Varkonda, Dr. Wagenhorst, Mr. Weber, Mr. Whan, Mrs. Wilder, Mr. Winsen, Mr. Wrenn, and Mr. Yeany.

Each curriculum leads to an Ohio State Provisional Certificate. Minimum requirements for teachers' certificates are determined by the Ohio Department of Education; if those requirements change, they become effective immediately at Youngstown University. State Department minimal requirements may be and usually are exceeded by University requirements. The teaching candidate in the University must exhibit better than average grades

†The student should familiarize himself with the course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained at the end of the General Requirements and Regulations section.

in all his courses, and a capacity for successful college work as determined by entrance tests. (Currently a point average of 2.5 and a percentile score of 40 by national freshman norms on a comprehensive English test are required of each candidate. The elementary candidate must also exhibit competence in elementary school subject fields.) *Admission to the University does not guarantee admission to candidacy for a teaching certificate:* this is controlled by the School of Education. The student must apply for admission to the School of Education, and he must be admitted before he enrolls in Upper Division education courses. Before admission, he is considered a pre-education student enrolled in the College of Arts and Sciences or in the school of his special field. Requirements for admission to the School of Education should normally be met by the end of the sophomore year. If they have not been met at this time the student is advised to reconsider his program and plan for some objective other than teaching. In any case, later qualifications for admission to the School of Education will not constitute justification for waiving any course prerequisites or planned sequences and will almost certainly result in prolongation of the preparatory period beyond the normal four years. The degree of Bachelor of Science in Education is granted only to the student who qualifies for a teaching certificate. He should take Education 101 in his freshman year; this course explains the requirements fully. Requirements for admission to the School of Education are the same for transfer students as they are for regular students of Youngstown University, and the point index calculated for admission is based on all course work regardless of where it is completed.

The pre-education student is advised by the faculty of the College of Arts and Sciences or by the faculty of his special school or department. Upon admission to the School of Education, the candidate is advised by the faculty of the School of Education if his major is in education, or by this faculty in co-operation with the faculty of his major department or school if his major is in a teaching field.

The candidate for the Provisional High School Certificate must complete the requirements for at least one teaching field; he should prepare for more, if possible. He should observe carefully the requirements in the various fields as stated in pamphlets available from the School of Education. The student who expects to teach in high school or elementary school should participate in extracurricular activities in order to be qualified to direct such activities.

All majors in education require at least 30 semester hours of appropriate education courses. Courses in student teaching (Education 304 or 305 and 404 or 405) are required in each curriculum, and the candidate should read the prerequisites in the course description section that follows.

Within the limits permitted by certification requirements, credit toward the education major may be granted for the following courses in other schools.

For all majors:

Psychology 201, General Psychology
Psychology 202, Psychology of Education

Psychology 308, Psychology of Mental Health
Psychology 310, Psychological Measurement

For the Elementary Education major:

English 251, Modern American English
Health Education and Physical Education 321C, Health Education in Elementary Schools
Health Education and Physical Education 322C, Physical Education for Elementary Grades
Music 321, Music Education for Elementary Teachers
Music 323, Music Methods for the First Six Grades

For the Secondary Education major:

Music 424, Junior and Senior High School Methods

For the Elementary or Secondary Education major:

Health Education and Physical Education 415C, School Health Education
Psychology 305, Child Psychology

For the General or Secondary Education major:

Psychology 306, Psychology of Adolescence
Psychology 405, Interviewing and Counseling
Psychology 406, Vocational Guidance

EDUCATION 101 IS PREREQUISITE TO ANY OTHER COURSE IN EDUCATION UNLESS WAIVED BY THE DEAN OF THE SCHOOL OF EDUCATION.

General Education

Professor Swartz (chairman)

GENERAL EDUCATION COURSES MAY APPLY TOWARD EITHER THE ELEMENTARY OR SECONDARY EDUCATION MAJOR.

Non-Credit Courses

10. *English for Proficiency.* A course for prospective teachers who need improvement in English usage and proficiency. Enrollment is by permission of the School of Education only. *Students who exhibit English weaknesses as evidenced by required test scores may be required to enroll in the course as a condition of admission to the School of Education,* provided that they have shown promise as interpreted by course marks and other entrance criteria. Evaluated as *three hours for load and billing purposes.* *No Credit.*

20. *Arithmetic for Proficiency.* A remedial and drill course for elementary teachers. *May be required as a prerequisite for* Education 113 or 313, where need is shown. Evaluated as *three hours for load and billing purposes.* *No Credit*

Lower Division Courses

101. *Introduction to Education.* Thorough orientation in state, institutional, and School of Education policies pertaining to graduation and certification requirements, and presentation of a broad background for subsequent courses in education, with wide supplementary reading. Required of all candidates for any form of teaching certificate and/or the education major. A prerequisite for any higher numbered education course unless waived by the Dean of the School of Education. *2 h. c.*

220. *Statistical Methods in Psychology.* Identical with Psychology 220. Elective. *3 h. c.*

Upper Division Courses

(OPEN ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE SCHOOL OF EDUCATION)

307. *History of Education.* The historical development of educational organizations, objectives, curriculums, and methods, studied with a view to a better understanding of modern educational conditions and problems. The place of education in various civilizations, especially modern Western civilization. Elective. Post-graduate students may substitute Education 307 for 101. *3 h. c.*

308. *Educational Sociology.* The sociological foundations of education; the relation of the individual and the social group; the school as a social institution; the relations between education and the home, the community, the state, social control, social progress, democracy, efficiency, and culture. The social aspects of specific school problems: the selection of educational objectives, the educative process, the curriculum, educational guidance, school control, moral education, and the selection and improvement of teachers. Required of all candidates for any form of teaching certificate. Listed also as Sociology 308. *2 h. c.*

310. *Educational Measurement and Guidance.* Construction, administration, scoring, and interpreting of objective examinations; selection, administration, scoring, and interpretation of results of standardized tests and scales, and their use in vocational and educational guidance. Prereq.: junior or senior standing. Required of elementary candidates, except dual curriculum candidates. Elective for secondary, special field, and dual curriculum candidates. *3 h. c.*

321. *Speech Education for the Classroom Teacher.* A consideration both of speech improvement for all pupils and speech correction for pupils with speech and hearing problems, on the kindergarten, elementary, and secondary levels. Types of speech and voice difficulties; techniques and materials for development and continued use of good voice and acceptable speech. Demonstration of therapy techniques by the instructor with children exhibiting speech difficulties. Prereq.: junior standing. Elective. *3 h. c.*

330. *Audio-Visual Education.* The aims and theory of audio-visual aids, and the use of various kinds of materials and projects; the relation of teaching practices to such aids, and their correlation with other aspects of teaching. Reports, demonstrations, and practice as operators. Elective. *3 h. c.*

333. *Philosophy of Education.* Identical with Philosophy and Religion 333G and 333S. Elective. *3 h. c.*

420. *Problems of the Classroom Teacher.* Adjustment to teaching surroundings; seeking practical and acceptable solutions to problems through re-thinking of philosophy, instruction methods, and ethics; the professional, legal, and social status of the teacher; teacher-pupil relations, and other problems. Elective. *3 h. c.*

434. *Teaching the Mentally Retarded Child.* Materials, equipment, and general course of study applicable for severely retarded children. Emphasis on children with intelligence quotients lower than 50. Prereq.: successful teaching experience or Psychology 305 plus at least six hours of elementary methods. Elective. *3 h. c.*

441. *Pupil Problems.* The problems of school routine, such as discipline, attendance, public school delinquency, child labor, and school-parent relationship; practical cases. Social agencies as auxiliaries to the school program. Elective. *3 h. c.*

Elementary Education

Associate Professor Chrisp (chairman)

Lower Division Courses

113. *Mathematics for Elementary Teachers.* Functional mathematics. Demonstrated competency in mathematics taught in the elementary school, including modern concepts. Required of all candidates for an elementary certificate. Acceptable for 3 hours of the required science or mathematics sequence. *3 h. c.*

214. *Children's Literature.* Familiarization with children's literature; methods of helping children use and enjoy books, with emphasis on recent books. Principles of selection, historical development, authors, illustrators; visits to books departments, libraries, and classrooms. Required of all elementary candidates. *3 h. c.*

225. *General Art for Elementary Teachers.* Drawing, painting, lettering, and design in many different materials such as crayons, chalk, water color, tempera paints and cut paper to give experiences in the media used in elementary schools. Making illustrations, using portraits and figures, also making murals and dioramas to fill specific needs. Required of all elementary candidates. *3 h. c.*

Upper Division Courses

(OPEN ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE SCHOOL OF EDUCATION)

305. *Student Teaching Laboratory: Elementary.* Observational and participatory experiences in actual elementary school situations under the direction of regular school teachers and administrative personnel. Students work as "teachers' aides" in assigned schools for six hours weekly throughout the entire semester. In addition, two hours of campus conferences are required weekly. Course should be scheduled during the first semester following admission to the School of Education and should precede the basic methods courses. Required of all regular elementary and cadet candidates. Dual curriculum candidates select Education 304. Prereq.: admission to the School of Education, or consent of the Dean of the School of Education. *4 h. c.*

312. *The Teaching of Handwriting.* Methods of teaching penmanship; improving the student's own handwriting. Elective. *1 h. c.*

313. *The Teaching of Arithmetic.* Principles in the learning of arithmetic and their application to its effective teaching. Required of all elementary candidates. *3 h. c.*

314. *Teaching of the Social Sciences and the Natural Sciences in the Elementary School.* Principles effective in the learning of history, geography, elementary school science, and related subjects, and their application to the teaching of these subjects. Required of all elementary candidates. *3 h. c.*

322. *Crafts.* Creative experiences in many kinds of material used in elementary and high schools, such as paper, cloth, wood, clay, metal, and scrap materials. Required of all elementary candidates. *3 h. c.*

323. *Advanced Crafts.* A continuation of Education 322. Prereq.: Education 322. Elective. *3 h. c.*

324. *Teaching of Art.* A study of the needs of children at different age levels and the means of providing desirable art experiences. Objectives and procedures considered from the standpoint of the child's level of development. Children's paintings and drawing evaluated. Two hours required for elementary teaching. The third hour presents a continuation of the study of the art needs of children on the secondary level. Third hour optional for elementary teaching. The full three hours are required for special art students, who register for Education 324X. *2 or 3 h. c.*

401. *Purposes and Practices of the Elementary School.* An analysis of current education, its aims, its sources, its strengths and weaknesses. Current practices are traced to their contributors, from Pestalozzi and Froebel to the modern group, but the focus is on the means by which modern education promotes the growth of the whole child in a democratic society. *3 h. c.*

405. *Supervised Student Teaching: Elementary.* Actual classroom teaching under the direction of experienced teachers and campus supervisors. Required of all elementary candidates including those on the dual curriculum. Scheduled during the last regular semester preceding the completion of any elementary program.

Application. Application to take this course must be made on a special form available at the School of Education not later than the end of the fourth week of the preceding semester.

Prerequisites. Completion of the major methods courses (specifically Education 313 and 413) and Education 305 (except that dual curriculum candidates should have completed Education 304 instead); admission to the School of Education (this requires that the candidate have a point index of 2.50 in all college work; a percentile rank of 40 or higher in the American Council of Education Cooperative English Test or its equivalent; the percentile rank in terms of National College Freshman Norms; and a satisfactory record on a Standardized Elementary Achievement test); and the recommendation and unqualified approval of the candidate's assigned School of Education adviser.

Quality and Nature of Work and Schedule. All classroom teaching and participatory experiences must be satisfactory at all times or the work may be discontinued without warning. Weekly campus conferences are required and attendance at these conferences is *mandatory.* (Students failing to attend the first regularly scheduled conference will be automatically dropped.) Additional individual conferences with the campus supervisor, the course teacher, or with the regular classroom teacher may be called as needed, and must follow any supervisory visits. Mornings must be left entirely free each day and the total campus load should be kept at the lowest feasible level because of the demanding nature of the responsibilities involved.

Fees: $10.00 for each student, to cover administrative expenses. *Additional fees may be required at the discretion of the participating school districts. Where such additional fees are required, a student is assigned only at his own request.* *6 h. c.*

413. *Reading and Language Arts.* The principles and techniques of teaching reading, and the function of reading in the day's program. Oral, silent, and audience reading, and diagnostic and remedial measures. *3 h. c.*

431. *Childhood Education I.* Analysis of and provision for the physical, emotional, intellectual, and social needs of kindergarten-primary children. Required for the kindergarten certificate. *3 h. c.*

432. *Childhood Education II.* The findings of Education 431 are applied to the practical and specific phases of the kindergarten-primary period, with attention to school and community environment, curriculum, equipment, daily program, and materials. Required for the kindergarten certificate. *3 h. c.*

Secondary Education

Associate Professor Shipman (chairman)

Upper Division Courses

(OPEN ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE SCHOOL OF EDUCATION)

304. *Student Teaching Laboratory: High School and Special Field.* Observational and participatory experiences under the direction of regular high

school teachers and administrative personnel. Students work as "teachers' aides" in assigned schools for six hours weekly throughout the entire semester. In addition, two hours of campus conferences are required weekly. Course should be scheduled during the first semester following admission to the School of Education and should precede or be scheduled concurrently with Education 306. Required of all regular high school and special field candidates, and of dual curriculum candidates. Prereq.: admission to the School of Education, or consent of the Dean of the School of Education. *4 h. c.*

306. *Principles of Teaching.* General methods of high school teaching: classroom procedures, methods utilized by superior teachers, attention to individual differences, measuring the results of teaching, planning the instruction. Observation of teaching in high schools. Required of all secondary and special fields candidates. Prerequisite or concurrent: Education 304. *3 h. c.*

317. *Extracurricular Activities.* Various points of view on extracurricular activities, development of satisfactory personal attitudes toward them, and discussion of the best practices in the organization, supervision and administration of such activities as student council, dramatics, clubs, etc. Elective. *3 h. c.*

400. *Special Methods.* A study of the problems involved in the teaching of different high school subjects. Each student specializes in the subject of his main interest. Observation of teaching in public secondary schools; reports; term paper. Each student confers with the chairman of the department of his major teaching subject. (When the number of students justifies it, the course may be organized into seminars of students having the same field of subject preparation. In such cases the course will be listed as Education 400L for foreign languages, 400E for English, etc.) Prerequisite to Education 404. Prereq.: Education 306 and senior standing. *3 h. c.*

404. *Supervised Student Teaching: High School and Special Field.* Actual classroom teaching under the direction of experienced teachers and campus supervisors. Required of all candidates for high school and special certificates (elective for dual curriculum candidates). Scheduled ordinarily during the last regular semester on the campus. Exceptions may be made by the Dean of the School of Education when all prerequisites have been satisfactorily met. Not offered during the Summer terms.

Application. Application to take this course must be made on a special form available at the School of Education not later than the end of the fourth week of the preceding semester.

Prerequisites. Admission to the School of Education and completion of Education 400 or the equivalent special methods course in the special fields concerned—*i.e.*, health education and physical education, art, music, or home economics. (Waiver of the Education 400 prerequisite will normally not be allowed except to post-graduate students who are willing to take Education 400 concurrently. To do so, however, is not recommended, since both Education 400 and 404 make many demands upon the student.) A point index of 2.5 in all college work and an average of B in two-thirds of the minimum subject field requirements, with no subject field course below C. The unqualified approval of the chairman of the department of each of the student's teaching fields and of the Dean of the School of Education.

Quality and Nature of Work and Schedule. All classroom teaching and participatory experiences must be satisfactory at all times or the work may be discontinued without warning. Weekly campus conferences are required and attendance at these conferences is *mandatory*. (Students failing to attend the first regularly scheduled conference will be dropped automatically.) Additional individual conferences with the campus supervisor, the course instructor, or with the regular classroom teacher may be called as needed, and must follow any supervisory visits. A half day should be left entirely free each day and the total campus load should be kept at the lowest feasible level because of the demanding nature of the responsibilities involved.

Fees: $10.00 for each student, to cover administrative expenses. *Additional fees may be required at the discretion of the participating school districts. Where such additional fees are required, a student is assigned only at his own request.* *4 h. c.*

414. *Teaching of Reading in Secondary and Advanced Subject Matter Areas.* A comprehensive survey of the elementary reading program as a basis for understanding and improving techniques that develop skills applicable to secondary students, with major emphasis, through secondary academic subject matter, on readiness, comprehension (factual, critical, organizational, reading-study), vocabulary development, word meaning, context, configuration, and picture clues, phonetic and structural analysis, dictionary usage, and silent and oral reading. Required for certification in the state of Pennsylvania. *3 h. c.*

Special Education

Professor Swartz (chairman)

Upper Division Courses

(OPEN ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE SCHOOL OF EDUCATION).

332. *Exceptional Children.* Identical with Psychology 332. Prereq.: Psychology 305. Required for special program in slow learners. *3 h. c.*

433. *Teaching Slow Learners.* Problems, techniques, and aids, with opportunity to study individual problems; attention to curricular units, guidance, and planning. *3 h. c.*

434. *Teaching the Mentally Retarded Child.* Materials, equipment, and general course of study applicable for severely retarded children. Emphasis on children with intelligence quotients lower than 50. Prereq.: successful teaching experience or Psychology 305, and at least six hours of elementary methods. *3 h. c.*

451. *Principles and Practices in Curriculum Planning and Development for Slow Learners: Social Studies.* Principles, practices, materials, and aids in teaching social studies to slow learners; opportunities to study individual problems; attention to curriculum units, guidance, and planning. Prereq.: Education 332 and 433, or equivalent. *2 h. c.*

452. *Principles and Practices in Curriculum Planning and Development for Slow Learners: Language Arts.* Principles, practices, materials, and aids in teaching language arts to slow learners; opportunities to study individual problems; attention to curriculum units, guidance, and planning. Prereq.: Education 332 and 433, or equivalent. *2 h. c.*

453. *Principles and Practices in Curriculum Planning and Development for Slow Learners: Arithmetic.* Principles, practices, and aids in teaching arithmetic to slow learners; opportunity to study individual problems; attention to curriculum units, guidance, and planning. Prereq.: Education 332 and 433, or equivalent. *2 h. c.*

454. *Preparation, Selection and Adaptation of Instructional Materials for Slow Learners.* A survey course of suitable instructional material for slow learners including administrative procedures, grouping principles, state standards, and textbooks. Prereq.: Education 332 and 433, or equivalent. *2 h. c.*

455. *Occupational Orientation and Job Training.* Background and development of job training programs, covering aspects of occupational adjustment in terms of practical academic experiences and employment opportunities. Prereq.: Education 332 and 433, or equivalent. *2 h. c.*

Curriculums

Semester-by-semester curriculums may be obtained from the School of Education.

Art Education

Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Art Education and to a Provisional Special Certificate in Art Education

First Year	Hrs.
Art 110, 111 Color and Design I	6
Art 113, 114 History and Appreciation of Art: General	6
Comm. 105-106 Basic Course I-II	6
Educ. 101 Introduction to Education	2
Soc. Sci. 101 & 102 Introduction to The Social Sciences I & II	6
Science	3
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	33

Second Year	Hrs.
Art 203, 204 Drawing and Painting	6
Art 211, 212 Color and Design II	6
Comm. 107 Basic Course III	3
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
Hist. 201 and 202 The United States	6
Psych. 201 General Psychology	3
Psych. 202 Psychology of Education	3
H. E. & P. E. activity courses	1
	31

Application for admission to the School of Education must be approved at the end of the sophomore year or the curriculum dropped.

Third Year	Hrs.
Art 223 Advertising Art I	3
Art 303, 304 Figure Drawing and Painting	6
Educ. 304 Student Teaching Laboratory: High School and Special Field	4
Educ. 306 Principles of Teaching	3
Educ. 322 Crafts	3
Educ. 324X Teaching of Art	3
Science	6
Elective (Upper Division)	3
	31

Fourth Year	Hrs.
Art 306 History and Appreciation of Art: Modern	3
Art 319 Jewelry and Metal Work I	3
Art 325 Pottery and Modeling	3
Art 329 Sculpture	3
Art 350 Architectural Drawing	3
Educ. 404 Supervised Student Teaching: High School and Special Field	4
Educ. 308 Education Sociology	2
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives (Upper Division)	6
	30

Dual Curriculum

Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Elementary Education and to both the Elementary and the High School Provisional Certificates

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Educ. 101 Introduction to Education	2
*Educ. 113 Mathematics for Elementary Teachers	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
Mus. 121 Introduction to Music, For Elementary Teachers	2
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
High school teaching field courses	6
*Science	3
	32

Second Year	Hrs.
Comm. 107 Basic Course III	3
Educ. 214 Children's Literature	3
Educ. 225 General Art for Elementary Teachers	3
**Engl. (any 200 level literature course), or Hum. 201	3
Hist. 201 and 202 The United States	6
Psych. 201 General Psychology	3
Psych. 202 Psychology of Education	3
*Science	3
H. E. & P. E. activity courses	1
High school teaching field courses	3 to 6
	31 to 34

Application for admission to the School of Education must be approved at the end of the sophomore year or the curriculum dropped.

*Education 113 may count toward the nine hour sequence in science or mathematics. Students expecting to teach science on the high school level should choose additional science courses from their teaching field.

**For the teaching field in English, see English in the College of Arts and Sciences section.

Third Year	Hrs.
Educ. 304 Student Teaching Laboratory: High School and Special Field	4
Educ. 306 Principles of Teaching	3
Educ. 313 Teaching of Arithmetic	3
Educ. 314 Teaching of the Social Sciences and the Natural Sciences in the Elementary School	3
Educ. 322 Crafts	3
Educ. 324 Teaching of Art	2
Educ. 413 Reading and the Language Arts	3
H. E. & P. E. 321C Health Education in Elementary Schools	2
H. E. & P. E. 322C Physical Education in Elementary Schools	2
Mus. 321 Music Education for Elementary Teachers	2
Philosophy and Religion elective, or Humanities 401 or 402	3
High school teaching field course	3
	33

Fourth Year	Hrs.
Educ. 308 Educational Sociology	2
Educ. 400 Special Methods	3
Educ. 401 Purposes and Practices of the Elementary School	3
Educ. 405 Supervised Student Teaching: Elementary	6
High school teaching field courses	15
	29

Elementary Education

Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Elementary Education and to a Provisional Elementary Certificate

Every candidate following this curriculum must take a comprehensive examination covering the content and skills of the elementary school. A student found deficient in any elementary school subject must take a review course in it until he reaches a satisfactory standard.

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Educ. 101 Introduction to Education	2
Educ. 113 Mathematics for Elementary Teachers	3
Geog. 102 Principles of Geography	3
Hist. 105 or 106 History of Western Civilization	3
Mus. 121 Introduction to Music for Elementary Teachers	2
Science	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	32

Second Year	Hrs.
Comm. 107 Basic Course III	3
Educ. 214 Children's Literature	3
Educ. 225 General Art	3
Engl. 200, 203, 204, 205, 206 or 275, or Hum. 201	3
Engl. 251 Modern American English	3
Hist. 201 and 202 The United States	6
Mus. 221 Music Literature and Appreciation for Elementary Teachers	2
Psych. 201 General Psychology	3
Psych. 202 Psychology of Education	3
Science	3
H. E. & P. E. activity courses	1
	33

Application for admission to the School of Education must be approved at the end of the sophomore year or the curriculum dropped.

Third Year	Hrs.
Educ. 305 Student Teaching Laboratory: Elementary	4
Educ. 310 Educational Measurement and Guidance	3
Educ. 313 Teaching of Arithmetic	3
Educ. 314 Teaching of the Social Sciences and the Natural Sciences in the Elementary School	3
Educ. 322 Crafts	3
Educ. 324 Teaching of Art	2
H. E. & P. E. 321C Health Education in Elementary Schools	2
H. E. & P. E. 322C Physical Education for Elementary Grades	2
Mus. 321 Music Education for Elementary Teachers	2
Psych. 305 Child Psychology	3
Science elective	3
	30

Fourth Year	Hrs.
Educ. 308 Educational Sociology	2
Educ. 401 Purposes and Practices of the Elementary School	3
Educ. 405 Supervised Student Teaching: Elementary	6
Educ. 413 Reading and Language Arts	3
Philosophy and Religion elective, or Humanities 401 or 402	3
Electives (or, for Kindergarten-Primary, Educ. 431 & 432 Childhood Education I & II	6
Electives (Upper Division)	7
	30

Kindergarten-Primary Education

A Kindergarten-Primary Certificate may be earned by taking Education 431 and 432 in addition to the elementary education curriculum, and taking three semester hours of the student teaching credit in student teaching in the kindergarten and three in a primary grade, preferably the first grade.

Business Education

For a business education curriculum, consult the Dean of the School of Education.

Health Education and Physical Education

For a health education and physical education curriculum, see *Health Education and Physical Education* in the College of Arts and Sciences section.

Music Education

For music education curriculums, see the Dana School of Music section.

Public School Nursing and Nursing Education

There are several possibilities in the field of nursing education. Many school districts in Ohio require school nurses to possess a degree in addition to the nursing certificate. Some school nurses combine teaching with nursing duties and complete the requirements for a teaching certificate. Others prepare to teach in schools of nursing. A registered nurse seeking a degree in nursing education should consult the Dean of the School of Education. See also *Pre-Medical Sciences and Allied Fields,* in the College of Arts and Sciences section.

Secondary Education

Required Curriculum Leading to the Degree of Bachelor of Science in Education or Bachelor of Arts and a Provisional High School Certificate

The student seeking the Bachelor of Arts degree should follow this curriculum except that a foreign language must be included in the teaching field electives and 11 hours of science as specified for the Bachelor of Arts degree. (See the College of Arts and Sciences section.) The student should read carefully the information on science requirements for the degree.

The major may be in education or in a teaching field. Electives should be chosen carefully to provide one or more teaching fields, as required for the Provisional High School Certificate.

First Year	Hrs.
Comm. 105-106 Basic Course I-II	6
Educ. 101 Introduction to Education	2
Science	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
High school teaching field electives	9
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	33

Second Year	Hrs.
Comm. 107 Basic Course III	3
*Engl. 200, 203, 204, 205, 206, or 275, or Hum 201	3
Hist. 201 and 202 The United States	6
Psych. 201 General Psychology	3
Psych. 202 Psychology of Education	3
Science	3
H. E. & P. E. activity courses	1
High school teaching field electives	11
	33

Application for admission to the School of Education must be approved at the end of the sophomore year or the curriculum dropped.

Third Year	Hrs.
Educ. 306 Principles of Teaching	3
Educ. 304 Student Teaching Laboratory: High School and Special Field	4
Philosophy and Religion elective, or Humanities 401 or 402	3
High school teaching field electives	17
Applied or Fine Arts	3
	30

Fourth Year	Hrs.
Educ. 308 Educational Sociology	2
Educ. 400 Special Methods	3
Educ. 404 Supervised Student Teaching: High School	4
High school teaching field electives	20
	29

*For the teaching field in English, see English in the College of Arts and Sciences section.

The William Rayen School of Engineering

Michael Jean Charignon, Dean

ORGANIZATION AND DEGREES

Objectives

The aim of the William Rayen School of Engineering is to complete the general objectives of the University by providing a rigorous discipline in engineering based on a sound understanding of the fundamental sciences and arts upon which all engineering rests.

Each curriculum therefore combines three interrelated programs: in basic science, in a technical field, and in liberal arts. The basic science program, consisting of mathematics and the physical sciences, provides the basis for the technical program and increases the student's knowledge of the physical world around him. The technical program teaches the application of science to the problems of engineering. The liberal arts program is designed to teach the student to express himself clearly and to understand better both himself and other people, and thus deal more intelligently with the problems he will face as an engineer, as a citizen, and as an individual.

The student may major in chemical, civil, electrical, industrial, mechanical, or metallurgical engineering. Curriculums for these major fields are given at the end of this section.

Facilities

Rayen Building, the former home of Rayen School, was made available to Youngstown University in 1945, and after it had been remodeled and reinforced to enable it to house heavy machinery, the William Rayen School of Engineering was established there as a main unit of the University. It is on Wick Avenue between Rayen Avenue and Wood Street.

The school's laboratories have up-to-date equipment for all standard experiments and for much advanced study in most fields. Its ample drawing rooms, classrooms, study, and offices are entirely modern. The school has its own power-generating equipment, steam supply, and machine shop.

The *Electrical Engineering Laboratories* comprise a machinery laboratory, a networks and measurement laboratory, and an electronics laboratory.

The *Electrical Machinery Laboratory* has a variety of a. c. and d. c. machines such as d.c. motors and generators, induction motors, alternators, synchronous motors and converters, transformers, an induction frequency converter, an induction regulator, and an

ignition rectifier. There is a large selection of meters and other instruments, loading resistors and reactors, and other apparatus.

The *Networks and Measurement Laboratory* has an artificial telephone line, oscillators, oscilloscopes, measuring instruments, and the necessary resistors, inductors, and capacitors for the study of electrical networks. It also contains bridges, standard meters, resistors and cells, potentiometers, mircowave equipment, and an electronic computer.

The *Electronics Laboratory* is equipped with vacuum, gas-filled, and special-purpose tubes; impedance bridges; vacuum-tube voltmeters; cathode-ray oscilloscopes; signal generators; audio oscillators; an electronic switch; radio transmitters and receivers; power supplies; and a wide variety of resistors, condensers, inductors, transformers, and precision meters.

The *Energy Conversion Laboratory* has a variety of equipment for the study of electrical circuits, electromagnetic fields and electromagnetic apparatus. There are several generalized rotating machines, cathode-ray oscilloscopes, photographic and mechanical recording equipment, harmonic analyzers and signal generators. There is also a variety of electrical metering and test equipment.

The *Elementary Strength of Materials Laboratory* has three Universal testing machines: a 400,000-pound hydraulic Olsen and two motor-driven Riehles, one 60,000-pound, and one 20,000-pound; a 10,000-pound Baldwin-Southwark tester; Fairbanks-Morse concrete-briquet-testing equipment; Rockwell, Brinell, and Scleroscope hardness-testing equipment; and high-precision measuring instruments.

The *Mechanical Engineering Heat Laboratories* at the Rayen building are equipped for laboratory work in four areas: applied thermodynamics, steam power engineering, heat transfer, and internal combustion engines. Located on the first floor and in the basement, these laboratories feature such major apparatus as large and small complete steam power plants including turbines, steam engines, pumps, condensers, and a cooling tower; commercial refrigeration and air conditioning units; air compressors; several internal combustion units mounted with a variety of dynamometers; convection and radiation type furnaces; and a motor-driven wind tunnel. There is also a variety of necessary items such as heat exchangers, calorimeters, gage testers, gas analysers, etc.

The *Mechanical Engineering Design Laboratories*, located on the first floor of the Rayen building, maintain facilities for laboratory work in advanced strength of materials and mechanical vibrations. They are equipped with apparatus necessary for stress analysis by methods employing electrical strain gages, photoelasticity, and brittle lacquers; long-time creep testers; and several vibration sources, pickups, analysers, and recorders.

The Department of Metallurgical Engineering is located in Clingan-Waddell Hall on nearby Rayen Avenue. Of its five laboratories, the first, a furnace room, houses grinding equipment, electric resistance heat-treating furnaces and a gas-fired welding unit with precision pyrometers and automatic temperature controls. The second laboratory contains two specimen

mounting presses, three motorized specimen polishers, sectioning tools and chemical laboratory facilities for specimen etching. The third laboratory consists of a fully equipped darkroom for developing and printing photomicrographic and X-ray diffraction plates and films. The fourth laboratory is an elemental metallographic laboratory equipped with a collection of approximately 400 prepared metallic specimens, sixteen metallurgical microscopes and one wide-field stereoscope microscope. The fifth laboratory is an advanced metallographic laboratory containing a research metallograph with cameras, a Rockwell hardness tester, a micro hardness tester, X-ray diffractometer and an X-ray spectrograph with autographic electronic recorders. Also available to the department is a high speed metal cut-off machine and a 250,000 volt X-ray radiographic machine, both located in the main engineering building.

Adjunct Faculty

Most of the school's courses may be taken in either day or evening sections. This is possible in part because of the number of highly qualified engineers and other technologists in the Youngstown area who are available as teachers to supplement the permanent staff. These men hold important posts with such firms as the United States Steel Corporation, Jones and Laughlin Steel Corporation, General Fireproofing Company, Ohio Edison Company, Sharon Steel Corporation, Truscon Steel Company, Westinghouse Electric Corporation, William P. Pollock Company, Youngstown Foundry and Machine Company, and Youngstown Sheet and Tube Company. Their number embraces engineers, designers, metallurgists, draftsmen, and other technical specialists, and includes men in such positions as plant engineer, district engineer, chief metallurgist, division industrial engineer, and general foreman. The interest of these people in the academic side of their professions provides a staff in whom expert training and up-to-the-minute practical experience are combined to an unusual degree, and the student is thus brought into closer contact with the professional world he is preparing to enter.

Awards and Prizes

Awards and prizes for engineering students are listed in the General Information section.

Tuition and Fees

See *Fees and Expenses* in the General Requirements and Regulations section.

Scholarships and Loans

Scholarships and loan funds applicable to engineering students are listed in the General Information section.

Admission

For admission to the William Rayen School of Engineering see *Admission* in the General Requirements and Regulations section. For courses leading to the degree of Bachelor of Engineering, see the pages that follow.

Grade Requirements

An engineering student whose point index is less than 2.00 at the end of any semester will be on probation the following semester. If he fails to raise his point index to 2.00 during the probationary semester, he will not be readmitted as a student for the Bachelor of Engineering degree. No student shall carry more than 16 semester hours unless his point index for the previous semester is 3.00 or more. A cumulative point average of 2.00 is required for the degree. (See *Student Load*, in the General Requirements and Regulations section; for the significance of the point index, see *Point Index and Scholastic Standing*, in the same section.)

Requirements for the Degree

Bachelor of Engineering

It is the student's responsibility to see that he satisfies all the graduation requirements for the degree he seeks. For the Bachelor of Engineering degree, these consist of:

1. The pre-college or preparatory courses. These are normally taken in high school, but any deficiencies may be made up before the junior year in the University. They are listed briefly below; for further information see the General Requirements and Regulations section.

2. The courses and other requirements to be completed in the University. They are explained in the General Requirements and Regulations section but are recapitulated below.

The curriculums leading to this degree require a minimum of 152 semester hours of credit and are designed to be completed in five academic years. The program can be accelerated for completion in four calendar years by the student willing and able to carry heavier loads.* A student planning to take summer courses should consult his adviser.**

R. O. T. C. students may meet the health education and physical education *activity* course requirement by completing Military Science 101-102 and 201-202, but no other courses are waived for such students who are working toward the B. E.

---

*This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while enrolled in classes.

**It is recommended that such courses be the non-science courses, such as Social Science 101 and 102 and Business Organization 201 and 202.

PRE-COLLEGE

SUBJECT	HIGH SCHOOL UNITS
English	3
United States history and civics	1
Algebra	2
Geometry	1
Physics	1
Others*	8

IN THE UNIVERSITY

REQUIREMENTS IN ADDITION TO COURSES

Completion of at least 152 semester hours.
Upper Division status (including completion of any specified preparatory courses not completed at time of entrance).
Major and minor requirements
The major is a specialization in a branch of engineering. The minor is completed through the required courses in mathematics. See the year-by-year curriculums at the end of this section.
Course-level requirements.
Point index of 2.00 (C) *at all times.*
Residence requirement.
Application for graduation.

COURSE REQUIREMENTS
(OTHER THAN THE MAJOR AND MINOR)

	SEMESTER HOURS OF CREDIT
BASIC COURSES	
Communication 105-106-107, Basic Course I, II, III	9
Health Education and Physical Education 109M or 109W, Health Education	2
Health Education and Physical Education activity courses	2
Orientation 100, Freshman Orientation**	1
AREA COURSES	
Social studies:	
Social Science 101 and 102, Introduction to the Social Sciences I, II	6
History	3
Any 200-level history course. Chemical engineering majors are excluded from this requirement.	
Economics 319, Economics of American Industry	3
Religion:	
A course in the Philosophy and Religion department, or Humanities 401 or 402, Older Classics I, II	3
Science:	
Chemistry 123-124, General Chemistry	8
Physics 201-202, General Physics	8
ENGINEERING COURSES	
Engineering 102, Engineering Drawing	3
Engineering 202, Engineering Drawing, Descriptive Geometry	3
Engineering 220, Analytical Mechanics: Statics	3
Engineering 301, Report Writing	2
Engineering 326 and 326L, Elementary Strength of Materials	4
Engineering 401-402, Thesis	4

*A unit of mechanical drawing and a half-unit of trigonometry or solid geometry, or both, are strongely advised.
**Not required of part-time students until they have completed 64 semester hours.

OTHER COURSES

English 3
Any 200-level literature course, or Humanities 201, Mythology in Literature. Chemical engineering majors are excluded from this requirement.
Mathematics 151, Introduction to Mathematical Analysis 5
Mathematics 152, 251, 252, Analytic Geometry and Calculus I, II, III 15

COURSES OF INSTRUCTION AND CURRICULUMS†

Faculty

Chemical Engineering: *Associate Professor Luginbill (chairman); Assistant Professor Shadduck; Instructor Chrobak.*

Civil Engineering: *Professor Cernica (chairman); Associate Professor Fok; Assistant Professors Paraska and Solomon; Instructor Ritter; Mr. Ault, and Mr. Mosure.*

Electrical Engineering: *Associate Professor Kramer (chairman); Assistant Professors Goncz, McNamee, Richley, Siman, and Vojtko; Mr. Kowalczyk.*

Industrial Engineering: *Professor Charignon (chairman); Mr. McGuffey, Mr. Marcone, Mr. Schwager, and Mr. Varraux.*

Mechanical Engineering: *Professors D'Isa (chairman) and Charignon; Assistant Professors Johnson, Petrek, Tarantine, and Sorokach; Instructor Arnett; Mr. Browne, Mr. D'Angelo, and Mr. Erzurum.*

Metallurgical Engineering: *Assistant Professors Fisher (chairman) and Ahmed; Mr. Heindlhofer, Mr. Jeffers, Mr. Phillips, and Mr. Terlecki.*

Lower Division Courses

102. *Engineering Drawing.* The study and use of drafting instruments, slide rule, blue prints, orthographic projection, auxiliary and oblique views, sections and conventions, technical sketching, and detail and assembly drawings of machine parts. Particular attention is paid to the fundamentals of dimensioning. One hour of lecture and five hours of laboratory a week. Fee: $25.00. *3 h. c.*

130. *Surveying.* The theory of surveying, and the use of instruments. Practical problems in leveling, traversing, and topography. Maps are drawn from field notes. Three hours of recitation and three hours of laboratory. Prereq.: Mathematics 152 and Engineering 102. Fee: $25.00. *3 h. c.*

202. *Descriptive Geometry.* Exercises involving points, oblique lines and oblique planes in space. Determination of distances, intersections and angles. The intersection of fundamental geometric shapes and the development of their surfaces. One hour of lecture and five hours of laboratory a week. Prereq.: Engineering 102. Fee: $25.00. *3 h. c.*

213. *Principles of Electrical Engineering.* A presentation of the fundamental theories of electrical engineering—laws of coulomb, gauss, Faraday and ampere and their relationship to Maxwell's equations. The relationship between fields and networks—resistance capacitance, inductance and

†The student should familiarize himself with the course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained at the end of the General Requirements and Regulations section.

sources. The elementary properties of electric and magnetic fields, field mapping, ferromagnetism, magnetic circuits, forces and torques in fields; energy storage and flow; Maxwell's equations and electrical measurements. Vector notation used throughout. For electrical engineering majors. Prereq.: Mathematics 252 and Physics 202; prerequisite or concurrent: Mathematics 309. *3 h. c.*

213L. *Principles of Electrical Engineering Laboratory.* Three hours a week; taken concurrently with Engineering 213. Fee: $25.00. *1 h. c.*

220. *Analytical Mechanics: Statics.* The fundamental principles of mechanics and their application to problems of engineering. Forces, components, vectors, moments, couples, cables, and friction. Moments of inertia are introduced in preparation for the strength of materials course. Prereq.: Mathematics 251 and Physics 201. Prerequisite or concurrent: Physics 202. *3 h. c.*

230. *Route Surveying.* A study of the surveying field and office work involved in the location, design, and construction of any transportation system including route selection, horizontal and vertical alignment, earthwork calculation, and layout. Three hours of recitation a week. Prereq.: Engineering 130. *3 h. c.*

251. *General Metallurgy: Adaptive.* An introductory study of the constitutional structure, physical properties, and thermal and mechanical behavior of the metals and their alloys as related to the adaptive process of casting, hot and cold working, heat treatment, welding, etc. Includes a comparative consideration of non-metallic materials of construction. Prereq.: Chemistry 123-124. *3 h. c.*

252. *General Metallurgy: Extractive.* An introductory study of the principles of extraction of metals from their ores and the principles of refining as applied in the ferrous and nonferrous metallurgical industries. Prereq.: Chemistry 123-124. *3 h. c.*

255. *Metallurgical Calculations.* Problems and calculations in pyrometallurgical fuel production and combustion, endothermic and exothermic process reactions, and charge: product balance for the iron blast furnace and the Bessemer, open hearth, and electric steel-making processes. Prereq.: Mathematics 152 and Engineering 251 and 252. *3 h. c.*

Upper Division Courses

301. *Report Writing.* The content of the engineering report, and methods of presenting it; construction of a comprehensive report, using data from previous studies. Prereq.: Communication 107 and junior standing in engineering. *2 h. c.*

311. *Electrical Circuits.* D.C. and A.C. currents in linear bilateral circuits in the steady-state. Application of complex numbers. Generalized solutions using nodal and loop methods of analysis, duality, network theorems, polyphase A.C. circuits. Frequency dependence of network response, Fourier analysis of non-sinusoidal periodic waves, and electrical measurements. Prereq.: Mathematics 252 and Physics 202; prerequisite or concurrent: Engineering 213. *3 h. c.*

311L. *Electrical Laboratory I.* Theory and application of electrical instruments, measurement of resistance, inductance, capacitance and impedance at audio frequencies; field plotting in two dimensional static fields; laboratory study of electric circuits, coupled circuits, polyphase circuits, power measurement, network theorems, and circuit transients. Three hours a week; taken concurrently with Engineering 311. Fee: $25.00. *1 h. c.*

312. *Electrical Networks.* Methods of network analysis, duality, four-terminal networks, coupled circuits. Impedance as a function of applied and natural frequencies of the circuit and its geometric interpretation in the complex frequency plane. Transmission lines, infinite line reflection, transient and steady-state behavior of lines. Prereq.: Engineering 311 and 311L. *3 h. c.*

312L. *Electrical Laboratory II.* A laboratory study of electric circuits including resonant circuits, filters, reflected waves, transmission line and wave guide characteristics and techniques, antenna characteristics, Fourier analysis of non-sinusoidal waves. Three hours a week; taken concurrently with Engineering 312. Fee: $25.00. *1 h. c.*

313. *Fundamentals of Electrical Engineering.* An introductory course in electrical engineering for non-electrical engineering majors. Conductors and insulators; network solution of direct current circuits, network theorems; magnetic fields, inductance, solutions of magnetic circuits; electric fields and capacitance; simple transients; electrodynamic principles; elementary theory of alternating current circuits. Prereq.: Mathematics 251 and Physics 202. *4 h. c.*

314. *Elements of Electrical Devices.* A course in direct and alternating current devices for non-electrical majors. Theory and application of direct current motors and generators, transformers, alternators, synchronous motors and induction motors, and electronic devices. Prereq.: Engineering 313. *3 h. c.*

314L. *Elements of Electrical Devices Laboratory.* Three hours a week; taken concurrently with Engineering 314. Fee: $25.00. *1 r. c.*

315. *Transient Analysis.* General linear differential equation solutions in engineering problems by classical method, Fourier series and integrals, La-Place transforms, and super-position integrals. Prereq.: Engineering 325 and Mathematics 309. Prerequisite or concurrent: Engineering 312. *3 h. c.*

315L. *Transient Analysis Laboratory.* Three hours of laboratory a week; taken concurrently with Engineering 315. Fee: $25.00. *1 h. c.*

317. *Applied Thermodynamics.* Thermal properties and their relationship in flow and non-flow first law energy transformations. Equations of state, compression and expansion processes, and cycles of ideal gases. Second and third laws. Processes and cycles of vapors and superheated steam. Gaseous mixtures and psychrometry. Prereq.: Physics 202 and Mathematics 252. *3 h. c.*

318. *Thermodynamics and Heat Transfer.* A course for non-mechanical engineering majors covering the subject matter outlined in Engineering 317 plus an introduction to fuels, combustion, and heat transfer by conduction, convection, and radiation. Prereq.: Physics 202 and Mathematics 252. *4 h. c.*

320. *Heat Transfer.* The fundamentals of heat transfer by conduction, convection, and radiation, followed by the investigation of combinations of these modes of energy transfer. Prereq.: Engineering 317; prerequisite or concurrent: Mathematics 310. *3 h. c.*

320L. *Heat Transfer Laboratory.* Three hours of laboratory a week; taken concurrently with Engineering 320. Fee: $25.00. *1 h. c.*

325. *Analytical Mechanics: Dynamics.* The absolute and relative motion phases of kinematics; and kinetics by the methods of force, mass and acceleration; work and energy; and impulse and momentum. Vector notation is introduced where applicable. Prereq.: Mathematics 252 and Engineering 220. *3 h. c.*

326. *Elementary Strength of Materials.* Application of elementary theory to problems of tension and compression, direct and torsional shear, bending, and columns. Statically determinate and indeterminate and combined stress problems are considered. Prereq.: Engineering 220. *3 h. c.*

326L. *Elementary Strength of Materials Laboratory.* Principles of testing applied to tension and compression, direct and torsional shear, bending, hardness, and impact. Materials tested include ferrous and nonferrous metals, wood, and concrete. Taken concurrently with Engineering 326. Fee: $25.00. *1 h. c.*

327. *Advanced Strength of Materials.* Theories of failure for combined stresses; fatigue, impact and creep properties of materials; structure of materials and the control of material properties. Prereq.: Engineering 326 and 326L. *3 h. c.*

327L. *Advanced Strength of Materials Laboratory.* Elementary theory and application of electrical strain gages, photoelasticity, and brittle lacquers; long-time creep testing. Three hours of laboratory a week. Taken concurrently with Engineering 327. Fee: $25.00. *1 h. c.*

328. *Hydraulics.* The laws of fluid mechanics and their application: properties of fluids; statics of fluids, compressible and incompressible; accelerated liquids; dynamics of fluids, flow of fluids in pipes; flow with free surface; orifices and nozzles; impulse and momentum; resistance to immersed and floating bodies; dynamical similitude. Prereq.: Engineering 220 and 325 or may be taken concurrently with Engineering 325. *3 h. c.*

328L. *Hydraulics Laboratory.* Three hours a week. Taken concurrently with Engineering 328. Fee: $25.00. *1 h. c.*

329. *Dynamics of Machinery.* Applications of analytical mechanics, with particular emphasis on machines. One hour of lecture and three hours of laboratory a week. Taken concurrently with Engineering 325. Fee: $25.00. *2 h. c.*

330. *Theory of Structures.* Reactions, shears, bending moments, and deflections in beams, frames, and trusses due to external fixed and moving loads; design of simple trusses, frames, and beams; analytical and graphical methods of solution. Prereq.: Engineering 220, and 326-326L. *3 h. c.*

331. *Design of Steel Structures.* Structural mechanics of steel and other metal beams, girders, and columns. Checking and proportioning of members and connections in accord with assigned specifications. Prereq.: Engineering 330. *3 h. c.*

332. *Highway Design.* A study of the elements which affect the design and construction of modern and existing highways, roads, and pavements (*i.e.*, traffic flows, finance, administration, location, needs, and materials). Emphasis is placed on the planning, geometric design, location design, types and design of pavements, procedures of design, and preparation of construction plans and drawings. Prereq.: Engineering 230 and 328. *3 h. c.*

334. *Sanitary I.* Study of the elements of water supply and sewage disposal, with emphasis on the determination of sources, quantity of flow and the hydraulics of water and sewer pipe. Methods and design of collection, transmission, and distribution systems of water; and the methods and design of collection and transmission of systems of sewage are included in the study of this course. Prereq.: Chemistry 123-124, and Engineering 328 and 328L. *3 h. c.*

351, 352. *Physical Metallurgy.* The crystal structure of pure metals and alloys, the freezing of metals, phase diagrams for metallic systems, solid solution alloys, intermetallic compounds, eutectic systems, the plastic deformation of metals and the principles of hot and cold working, recrystallization, X-ray diffraction for study of metal structures, diffusion in metals, the mechanical properties of metals and alloys, flow of heat in metals, magnetic properties, damping capacity, other physical properties of metals, powder metallurgy. Prereq.: Engineering 251 and 252. *3 + 3 h. c.*

351L, 352L. *Metallography Laboratory.* Study of the more common microstructures of both ferrous and nonferrous metals and alloys. The student studies approximately fifty prepared specimens under the microscope, writes a description of each, and draws its typical microstructure. Instruction in microscope technique. One three-hour period a week. Prereq.: Engineering 251. Fee: $25.00 each semester. *1 + 1 h. c.*

364. *Job Analysis and Evaluation.* The fundamentals and techniques of job descriptions, job specifications, salary determination, and the use of

charts in setting up labor grades, locality surveys, and merit ratings for purposes of wage determination, with examples from actual practice. The mechanics of making a plant job evaluation. Prereq.: Mathematics 340 and Engineering 366. *2 h. c.*

365. *Quality Control.* Objectives of statistical quality control in manufacturing, through sampling methods. Control charts for variables, attributes, and defects per unit. A statistical approach to acceptance procedures. Applications of statistical quality control to various types of manufeaturing operations. Prereq.: Mathematics 340 and Engineering 366. *3 h. c.*

366, 367. *Industrial Organization and Management I and II.* The general principles of industrial organization and management. Prereq.: Mathematics 340. *3 + 3 h. c.*

371. *Elementary Machine Design.* The design and use of machine elements such as shafts, keys, couplings, springs, screws, bolts, brakes, clutches, and welded and riveted connections. Prereq.: Engineering 202, 327, 327L, and 329. *3 h. c.*

371L. *Elementary Machine Design Laboratory.* Two or three practical design problems, each incorporating the design of several machine elements. Three hours of laboratory a week. Taken concurrently with Engineering 371. Fee: $25.00. *1 h. c.*

374. *Steam Power Engineering.* Steam power plant cycle analysis, fuels and combustion, steady-state and furnace heat transfer. Steam generators and prime movers. Fluid handling. Instruments and controls. Power plant economics. Prereq.: Engineering 320 and 320L. *3 h. c.*

374L. *Steam Power Engineering Laboratory.* Three hours of laboratory a week. Taken concurrently with Engineering 374. Fee: $25.00. *1 h. c.*

380-381. *Principles of Chemical Engineering.* Orientation in the philosophy and attitudes needed in practice. An overall appraisal of the profession in terms of the practical application of theoretical physio-chemical principles. Illustrations of the proper analytical and evaluating procedures for solutions of problems in process design. The flow sheet: material, energy, and economic balances; static and dynamic equilibria; the transfer and transmission rates of heat. Prerequisite or concurrent: Chemistry 205. *3 + 3 h. c.*

382. *Chemical Engineering Techniques.* A systematic survey of well-established and readily available methods for implementing the usual types of operational or process procedure. Where several techniques may be applicable, the advantages and limitations of each are considered. Prerequisite or concurrent: Chemistry 205. *3 h. c.*

383, 384, 385, 386. *Unit Operations I, II, III, IV.* A study of the development and application of the theoretical concepts involved in the physical conversions of matter in respect to its state, flow, particle size, separation, diffusion, and absorption, in relation to the energy transformation and transfer requirements accompanying or affecting such changes. Prereq.: Engineering 381 and 382. *3 + 3 + 3 + 3 h. c.*

383L, 384L, 385L, 386L. *Unit Operations Laboratory I, II, III, IV.* Three hours of laboratory a week. Taken concurrently with Engineering 383, 384, 385, 386. Fee: $25.00 each semester. *1 + 1 + 1 + 1 h. c.*

387-388. *Thermodynamics.* Macroscopic approach of the first and second laws of thermodynamics based on the open-system. Applications of both laws to fluid dynamics, refrigeration, power cycles, phase and chemical equilibria. Expanded treatment of energy balances and pressure-volume-temperature relations. Prereq.: Engineering 381. *2 + 2 h. c.*

389. *Kinetics.* Theoretical developments and methods of interpreting experimental data pertaining to chemical kinetics. General design principles

and construction features of reactors with application of these principles to the design of specific reactors. Prereq.: Mathematics 309. *3 h. c.*

401-402. *Thesis.* The student prepares a written report of at least 2,500 words on an investigation of a subject selected by either the student or the dean of the engineering school. Three bound copies are required; specifications are available on request. For credit, the thesis must be accepted by both the dean and the adviser. Prereq.: senior standing. Estimated thesis expense: $50.00-$60.00. *2 + 2 h. c.*

406. *Metallurgical Processes: Extractive.* Advanced lectures and problems in the technology of ore dressing, smelting, refining, roasting, leaching, electrodeposition, and other extractive processes used in the production of ferrous and nonferrous metals. Prereq.: Engineering 255 and 351, 352, and 351L, 352L. *3 h. c.*

407. *Metallurgical Processes: Adaptive.* Advanced lectures and problems relating to the technology of casting, hot working, cold working, welding, cementation, coating, compacting, and heat treatment of the ferrous and nonferrous metals and alloys. Prereq.: Engineering 351, 351L, and 352, 352L. *3 h. c.*

413. *Electromagnetic Apparatus I.* Introduction to energy conversion principles. Electromagnetic transducers, electromechanical systems, electromagnetic transmission. Energy functions, Lagange's equations and equivalent circuits are used. Prereq.: Engineering 312, 325 and 418. Prerequisite or concurrent: Engineering 315. *1 h. c.*

413L. *Electromagnetic Apparatus I Laboratory.* Three hours of laboratory a week; taken concurrently with Engineering 413. Fee: $25.00. *1 h. c.*

414. *Electromagnetic Apparatus II.* Rotating electromagnetic energy conversion devices, multiple excited electromagnetic energy converters under steady state and transient conditions, and control systems. Prereq.: Engineering 413. *3 h. c.*

414L. *Electrical Laboratory V.* Study of generalized machine, including selected transient and steady state performance of direct current, synchronous induction machines; saturable core devices and transformers. Three hours of laboratory a week; taken concurrently with Engineering 414. Fee: $25.00. *1 h. c.*

415. *Physical Electronics.* A study of the theory of high vacuum, gaseous and crystal devices. Contingent field theory, electron ballistics and optics, emission at metallic surfaces and boundaries, gaseous conduction, parametric circuit equations of devices, characteristic curves, and basic utilization circuits. Prereq.: Engineering 311. Prerequisite or concurrent: Engineering 312 and 418. *3 h. c.*

415L. *Electrical Laboratory III.* Determination of characteristics of vacuum, gaseous, and solid state electron devices, non-sinusoidal wave and circuit transient analysis, power supplies, single stage amplifiers. Three hours of laboratory a week; taken concurrently with Engineering 415. Fee: $25.00. *1 h. c.*

416. *Electronic Circuits.* The analysis of feedback and class C amplifiers, multiple-phase rectifiers, oscillators, modulators, detectors; pulse and wave forming, triggering and timing circuits; utilization of high-vacuum gas-filled and crystal elements. Prereq.: Engineering 415 and 415L, or equivalent. *3 h. c.*

416L. *Electrical Laboratory IV.* Study of feedback amplifiers, selective amplifiers, oscillators, wave-forming circuits, modulation and detection, transformers, transients, and Fourier analysis. Three hours a week; taken concurrently with Engineering 416. Fee: $25.00. *1 h. c.*

417. *Electric Power Transmission.* Transmission line parameters: solution of the short and long line; circle diagrams: symmetrical components and their application to fault calculations and sequence impedance of machines; and other topics relating to power transmission. Prereq.: Engineering 312, 413. *3 h. c.*

418. *Electromagnetic Field Theory.* Definitions of fields and potentials, study of the static electric and magnetic field, steady currents and the associated magnetic field, changing electric and magnetic fields. Maxwell's equations and their applications to waves in dielectric and conducting media, reflection, radiation, Poynting's vector. Vector notation is used throughout the course. Prereq.: Mathematics 309, Engineering 213 and 213L. *3 h. c.*

420. *Industrial Electronics.* The application of electronic devices to industrial controls. Regulators; induction heating; rectifiers; servomechanisms; magnetic amplifiers and other systems. Prereq.: Engineering 413 and 416. *3 h. c.*

421. *Control Analysis I.* The characteristics of closed loop automatic control systems, system behavior from classical and Laplace transform methods; stability, compensation methods, components for use in servo systems, and analog computers. Prereq.: Engineering 414 and 415, and Mathematics 309. *3 h. c.*

421L. *Electrical Laboratory VI.* Three hours of laboratory a week; taken concurrently with Engineering 421. Fee: $25.00. *1 h. c.*

422. *Control Analysis II.* Linear and non-linear control systems; compensation techniques in time and frequency domain; signal flow diagrams; multiple loop and multiple input feedback control systems. *3 h. c.*

423. *Electronic Circuits, Signals, and Systems.* Continuation of Engineering 416, with emphasis on problems arising from communications and electron control areas. Correlation of classical differential equation approach to time and frequency domain interrelationships with Fourier and Laplace methods, and application of these concepts to problems in communications and control arts. Numerical evaluation methods, including impulse-train techniques. *3 h. c.*

424. *Molecular Engineering.* Treatment of materials of electrical engineering in terms of atomic, nuclear, and molecular phenomena. Interaction between electromagnetic fields and material; classical treatment and quantum effects; particle statistics in thermal equalibrium. Conduction in metals, semiconductors, and super conductors; electric and magnetic polarization; ferroelectricity and ferromagnetism; electromechanical and magnetomechanical effects; influence of material properties on energy storage, conversion and control. *3 h. c.*

430. *Concrete Design.* Structural mechanics of concrete beams, slabs, columns, walls, and footings. Checking and proportioning of members and connections in accord with the assigned specifications for elastic, ultimate, and prestressed designed concrete. Introduction to continuity in plane frames and elementary application to design. Prerequisite or concurrent: Engineering 330. *3 h. c.*

431. *Sanitary II.* Advance study of the elements of water supply and sewage disposal, with emphasis on the treatment of both water and sewage. Methods and design of treatment plants are included in the study of this course. Prereq.: Engineering 334. *3 h. c.*

433. *Indeterminate Structures.* Analysis of statically indeterminate structures: elastic arches, closed rings, rigid frames, continuous beams. Prereq.: Engineering 330. *3 h. c.*

434. *Soil Mechanics.* The mechanical properties of soils, soil classification: capillarity and permeability, stresses and strains, consolidation, shear; stability of footings, retaining walls, cuts, and embankments. Prereq.: Mathematics 309 and Engineering 326. *3 h. c.*

434L. *Soil Mechanics Laboratory.* Principles of testing applied to soil. Soil laboratory procedure: water content: field density of a cohesive soil: specific gravity: sieve analysis: Atterburg limits: optimum moisture content for maximum compaction: permeability — falling head, and unconfined compressive strength—Cohesive soils. Taken concurrently with Engineering 434. Fee: $25.00. *1 h. c.*

436. *Sanitary III.* Discussion and study of those aspects of chemistry which apply to the analysis of sewage and water treatment. Water, sewage, and industrial waste analysis are studied and conducted according to standard methods set up by the American Public Health Association. Two hours of lecture and one hour of laboratory per week. Prereq.: Engineering 334 and Engineering 431, or may be taken concurrently with Engineering 431. *3 h. c.*

437. *Seminar.* Reports on library studies and research on special topics selected with the advice and approval of the faculty. Review of recent publications in the field of civil engineering. Discussions of civil engineering problems. Prereq.: Engineering 326 and 328. *2 h. c.*

438. *Civil Engineering Surveying.* A continuation of Engineering 130 and 230 with emphasis on instruments and methods for large surveys, operations, procedures for precise control, photogrammetry, and assembling essential field data preliminary to the design and construction of engineering projects. Prereq.: Engineering 130 and 230. Fee: $25.00. *3 h. c.*

440. *Advanced Concrete Design.* Analysis of continuous concrete structures, details, and applications of principles to design. Analysis and design of prestressed concrete members. Prereq.: Engineering 430. *3 h. c.*

441. *Computer Techniques.* Principles and uses of computing machines to solve engineering problems. Analysis, development, and programming of data and interpretation of solutions. Prereq.: engineering, science, and mathematics majors—junior standing; other majors—junior standing and consent of teacher. Fee: $25.00. *3 h. c.*

453, 454. *Advanced Metallography.* Group work in the techniques of selecting, processing, sectioning, grinding, polishing, etching, and photomicrography of metallographic specimens. Correlation of physical properties and micro-structure of ferrous and nonferrous metals and alloy specimens and preparation of project reports, including photomicrographic illustrations. Projects cover heat-treatment of cast, forged, hot-rolled, extruded, and coldworked steels and commercial alloys of copper, aluminum, nickel, zinc, tin, and other metals. One hour of discussion and five hours of laboratory a week. Prereq.: Engineering 351, 352, and 351L, 352L. Fee: $25.00 each semester. *2 + 2 h. c.*

455. *Ferrous Production Metallurgy.* Study of the raw materials required for the production of iron and steel. Ore concentration, by-products, oven, blast furnaces, Bessemer processes, open hearth, and refractories. Prereq.: Engineering 251, 252, and 255. *3 h. c.*

456. *Nonferrous Production Metallurgy.* The production of nonferrous metals, including cadmium, chromium, copper, aluminum, gold, silver, tin, and zinc. Types of ores, types of blast furnace melting, converters; continuous decantation and cyanide processes. Prereq.: Engineering 251, 252, and 255. *3 h. c.*

457. *X-ray Metallography.* Lectures, problems and laboratory demonstrations in the application of X-radiography, X-ray diffraction and X-ray spectroscopy to the non-destructive internal inspection, crystallographic analysis and spectrographic analysis of the metals and their alloys as they are affected by casting, mechanical working, heat treatment, etc. One hour of lecture and three hours of laboratory work a week. Prereq.: Engineering 453 and 454. Fee: $25.00. *2 h. c.*

458. *Advanced Materials Science.* An advanced discussion of the structure and properties of solid materials including theory of cohesive bond-

ing: free electron, band and zone theory; magnetic properties; electrical properties of conductors, nonconductors and semiconductors; imperfections in crystals and dislocation theory; theory of alloys and kinetics of phase changes. Prereq.: Engineering 351 and 352. *3 h. c.*

461. *Production Planning and Control.* The fundmentals and techniques of planning and control required in the co-ordination of products engineering, production engineering, quality control, material control, expediting, purchasing, scheduling, and dispatching. Applications to seasonal and non-seasonal business. Economic lot size calculations and formulas. Plant capacity and plant layout; material handling. Prereq.: Engineering 366 and 367. *3 h. c.*

465. *Methods Engineering I.* Fundamentals and elements of motion study, construction and use of process charts and operation analysis, work simplification and standardization, characteristics of motions, and basic divisions of accomplishment. Visits to local plants are arranged. Prereq.: Mathematics 340 and Engineering 366. *2 h. c.*

466. *Methods Engineering II.* Tools and methods of time study, practice in making time-study observations, determination of constants and variables, leveling for efforts and skill allowances for delays and fatigue, construction and use of formula standards. Time studies are made of actual plant operations. Prereq.: Engineering 465. *2 h. c.*

470. *Advanced Machine Design.* A continuation of Engineering 371, including lubrication; ball and roller bearings; spur, bevel, worm and helical gears, curved beams, thick-walled pressure vessels, and flywheels; selected problems solved by the energy method of Castigliano. Prereq.: Mathematics 310 and Engineering 371-371L. *3 h. c.*

470L. *Advanced Machine Design Laboratory.* One or two practical design problems involving all of the material covered in Engineering 371 and 470. Three hours of laboratory a week. Taken concurrently with Engineering 470. *1 h. c.*

471. *Refrigeration and Air Conditioning.* The application of thermodynamic, fluid flow and heat transfer principles to domestic and industrial refrigeration and air conditioning systems for purposes of material processes and human comfort. Prereq.: Engineering 328, 374, and 374L; prerequisite or concurrent: Engineering 374 and 374L. *3 h. c.*

472. *Principles of Nuclear Reactors.* Basic engineering science of the nuclear fission process applied to the generation of power. The course serves as background material for work in various phases of nuclear engineering: the chain reaction; vocabulary of nuclear reactions; multiplication, slowdown and diffusion of neutrons; shielding; kinetics; criticality; and theory of reactor control. Prereq.: Physics 426 and Mathematics 309. *3 h. c.*

472L. *Principles of Nuclear Reactors Laboratory.* Detection and measurement of radioactivity using Guger-Muller tubes. Scintillation and gas flow detectors, and radiation analyzer. Isotype production using the reactor and decay of same. Flux distribution in the reactor. Taken concurrently with Engineering 472. Fee: $25.00. *1 h. c.*

475. *Internal Combustion Engines.* Thermodynamic analysis of internal combustion engine and gas turbine cycles; fuels; combustion; carburetion, cooling, lubrication, and effect of supercharging on internal combustion engine performance. Prereq.: Engineering 374 and 374L. *3 h. c.*

476. *Mechanical Vibrations.* The analysis, isolation and control of free and forced vibrations, with and without damping, for systems having one degree of freedom. Free vibrations are considered for systems having several degrees of freedom. Vibrations in continuous media are introduced. Prereq.: Mathematics 310, and Engineering 327-327L, and 329. *3 h. c.*

476L. *Mechanical Vibrations Laboratory.* Experiments involving mechanical systems and some electrical analogies. Analog computer applica-

tions are introduced. Three hours of laboratory a week: taken concurrently with Engineering 476. Fee: $25.00. *1 h. c.*

477. *Compressible Fluid Flow.* One dimensional applications of adiabatic and diabatic gas flow in the subsonic and supersonic regions. Prereq.: Engineering 317, 328, and 328L. *3 h. c.*

480. *Process Dynamics.* Introduction to automatic control and control loop concepts, measurement of variables, dynamic properties of instruments, process response, discussion of controller types, derivation of equations for first and second order control systems, and derivation of equations for first and second order process. Prereq.: Engineering 381. *3 h. c.*

481. *Operations Research.* Problem formulation, Queing theory, linear programming, computer programming, and design of research. Prereq.: Mathematics 340. *3 h. c.*

Curriculums

Semester-by-semester curriculums are available in the offices of the William Rayen School of Engineering.

Chemical Engineering

The following five-year curriculum requires 152 semester hours.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. activity courses	1
Orientation 100	1
	32

Second Year	Hrs.
Chem. 205 Qualitative Analysis	3
Comm. 107 Basic Course III	3
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
H. E. & P. E. activity courses	1
	31

Third Year	Hrs.
Chem. 221, 222 Organic Chemistry	8
H. E. & P. E. 109M or 109W Health Education	2
Engr. 220 Analytical Mechanics: Statics	3
Engr. 251 General Metallurgy: Adaptive	3
Engr. 301 Report Writing	2
Engr. 326 & 326L Elementary Strength of Materials	4
Engr. 380-381 Principles of Chemical Engineering	6
Engr. 382 Chemical Engineering Techniques	3
	31

Fourth Year	Hrs.
Chem. 306 Quantitative Analysis	4
History (any 200 level course)	3
Engr. 313 Fundamentals of Electrical Engineering	4
Engr. 314 & 314L Elements of Electrical Devices	4
Engr. 317 Applied Thermodynamics	3
Eng. 374 & 374L Steam Power Engineering	4
Engr. 383 & 384 Unit Operations I & II	6
Philosophy and Religion elective or Humanities 401 or 402	3
	31

Fifth Year	
English elective (any 200 level course)	3
Econ. 319 Economics of American Industry	3
Chem 401, 402 & 401L, 402L Physical Chemistry	8
Engr. 328 & 328L Hydraulics	4
Engr. 385 Unit Operations III	3
Engr. 401 402 Thesis	4
Engr. 480 Process Dynamics	3
	28

Civil Engineering

The Civil Engineering curriculum requires a total of 154 semester hours. In addition to the required 142 hours, each student must complete 12 hours (six technical and six liberal arts) from the list of electives following the curriculum below.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Engineering Drawing: Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. activity courses	1
Orientation 100	1
	32

Second Year	Hrs.
Comm. 107 Basic Course III	3
Soc. Sci. 101 Introduction to the Social Sciences I	3
Engr. 220 Analytical Mechanics: Statics	3
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
	30

Third Year	Hrs.
Engl. 200, 203, 204, 205, 206, or 275, or Hum. 201	3
Engr. 130 Surveying	3
Engr. 230 Route Surveying	3
Engr. 318 Thermodynamics	4
Engr. 325 Analytical Mechanics: Dynamics	3
Engr. 326 & 326L Strength of Materials	4
Engr. 328 & 328L Hydraulics	4
Hist. 200, 201, 202, 213, 214, 252, or 254	3
Math. 309 Differential Equations	3
Soc. Sci. 102 Introduction to the Social Sciences II	3
	33

Fourth Year	Hrs.
Econ. 319 Economics of American Industry	3
Engr. 301 Report Writing	2
Engr. 313 Fundamentals of Electrical Engineering	4
Engr. 314 & 314L Elements of Electrical Devices	4
Engr. 330 Theory of Structures	3
Engr. 331 Design of Steel Structures	3
Engr. 332 Highway Design	3
Engr. 334 Sanitary I	3
Engr. 433 Indeterminate Structures	3
Philosophy and Religion elective or Humanities 401 or 402	3
	31

Fifth Year	Hrs.
Engr. 401-402 Thesis	4
Engr. 430 Concrete Design	3
Engr. 431 Sanitary II	3
Engr. 434 & 434L Soil Mechanics	4
Engr. 437 Seminar	2
Electives (technical)	6
Electives (liberal arts)	6
	28

Electives

	Hrs.
Engr. 213 & 213L Principles of Electrical Engineering	4
Engr. 251 General Metallurgy	3
Engr. 311 Electrical Circuits & 311L Electrical Laboratory I	4
Engr. 327 & 327L Advanced Strength of Materials	4
Engr. 365 Quality Control	3
Engr. 366 Industrial Organization and Management I	3
Engr. 436 Sanitary III	3
Engr. 438 Civil Engineering Surveying	3
Engr. 440 Advanced Concrete Design	3
Engr. 441 Computer Techniques	3
Engr. 472 Principles of Nuclear Reactors	3
Engr. 476 Mechanical Vibrations	3
Engr. 477 Compressible Fluid Flow	3

	Hrs.
Bus. Org. 221 Mathematics of Finance	3
Math. 310 Partial Differential Equations	3
Math. 320 Vector Analysis	3
Math. 340 Statistics	3
Math. 341 Mathematical Statistics	3
Math. 360 Numerical Analysis	3
Humanities	3
Social Science (200-level or above)	3
Geol. 101 Physical Geology	3
Chem. 205 Qualitative Analysis	3
Physics 301 Classical Mechanics	4
Physics 304 Introduction to Modern Physics	3
Physics 403 Electricity and Magnetism	3
Physics 426 Elements of Nuclear Physics	3
Foreign language (German, French, or Russian)	6

Electrical Engineering

The Electrical Engineering curriculum requires a total of 154 hours. In addition to the required 142 hours, each student must complete 12 hours (six technical and six liberal arts) from the list of electives following the curriculum below.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Comm. 107 Basic Course III	3
Engr. 251 General Metallurgy: Adaptive	3
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. activity courses	1
	31

Third Year	Hrs.
Engr. 213 Principles of Electrical Engineering	3
Engr. 220 Analytical Mechanics: Statics	3
Engr. 311 Alternating Current Circuits & 311L Electrical Laboratory I	4
Engr. 312 Electrical Networks & 312L Electrical Laboratory II	4
Engr. 325 Analytical Mechanics: Dynamics	3
Engr. 418 Electromagnetic Field Theory	3
English (any 200-level literature course), or Hum. 201	3
History (any 200-level course)	3
Math. 309 Ordinary Differential Equations	3
Math 310 Partial Differential Equations or 320 Vector Analysis	3
	33

Fourth Year	Hrs.
Econ. 319 Economics of American Industry	3
Engr. 315 & 315L Transient Analysis	4
Engr. 318 Thermodynamics and Heat Transfer	4
Engr. 326L Elementary Strength of Materials Laboratory	1
Engr. 413 Electromagnetic Apparatus I	3
Engr. 415 Electronic Circuit Elements & 415L Electrical Laboratory III	4
Engr. 416 Electronic Circuits and 416L Electrical Laboratory IV	4
Philosophy and Religion elective or Hum. 401 or 402	3
	26

Fifth Year	Hrs.
Engr. 301 Report Writing	2
Engr. 401-402 Thesis	4
Engr. 414 Electromagnetic Apparatus II & 414L Electrical Laboratory V	4
Engr. 421 Control Analysis I & 421L Electrical Laboratory VI	4
Physics 426 & 426L Elements of Nuclear Physics	4
Electives (technical)	6
Electives (liberal arts)	6
	30

Electives

TECHNICAL	Hrs.
Engr. 252 General Metallurgy: Extractive	3
Engr. 320 Heat Transfer	3
Engr. 327 & 327L Advanced Strength of Materials	4
Engr. 374 & 374L Steam Power Engineering	4
Engr. 417 Electric Power Transmission	3
Engr. 420 Industrial Electronics	3
Engr. 422 Control Analysis II	3
Engr. 423 Electronic Circuits, Signals, and Systems	3
Engr. 424 Molecular Engineering	3
Engr. 472 Principles of Nuclear Reactors	3
Engr. 476 Mechanical Vibrations	3
Math. 340, 341 Mathematical Statistics I & II	6
Math. 360 Numerical Analysis	3

LIBERAL ARTS

Courses in art, history, music, literature, a foreign language, humanities, and philosophy, for which the prerequisites have been met.

Industrial Engineering

The Industrial Engineering curriculum requires a total of 153 hours. In addition to the required 141 hours, each student must complete 12 hours (six technical and six liberal arts) from the list of electives following the curriculum below.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Engineering Drawing: Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. activity courses	1
Orientation 100	1
	31

Second Year	Hrs.
Comm. 107 Basic Course III	3
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
	31

Third Year	Hrs.
Econ. 319 Economics of American Industry	3
Acctg. 201 Elementary Accounting I	3
Acctg. 320 Managerial Accounting	3
Engr. 220 Analytical Mechanics: Statics	3
Engr. 251 General Metallurgy: Adaptive	3
Engr. 318 Thermodynamics	4
Engr. 365 Quality Control	3
Math. 309 Differential Equations	3
Math. 340-341 Mathematical Statistics I-II	6
	31

Fourth Year	Hrs.
Engr. 301 Report Writing	2
Engr. 313 Fundamentals of Electrical Engineering	4
Engr. 314 & 314L Elements of Electrical Devices	4
Engr. 325 Analytical Mechanics: Dynamics	3
Engr. 326 & 326L Elementary Strength of Materials	4
Engr. 364 Job Analysis and Evaluation	2
Engr. 366, 367 Industrial Organization and Management I, II	6
Engr. 441 Computer Techniques	3
Engr. 481 Operations Research	3
	31

Fifth Year	Hrs.
Econ. 401 Labor Problems	3
Engr. 401-402 Thesis	4
Engr. 461 Production Planning and Control	3
Engr. 465 & 466 Methods Engineering I & II	4
Philosophy and Religion elective or Humanities 401 or 402	3
Electives (technical)	6
Electives (liberal arts)	6
	29

Electives: Liberal Arts

Econ. 404 Personnel Management 3
Foreign language (German, French, or Russian) 6
Humanities or Social Science 6
History (any 200-level course) 3
English (any 200-level literature course) 3

Electives: Technical

	Hrs.
Engr. 252 General Metallurgy: Extractive	3
Engr. 311 Electrical Circuits & 311L Electrical Laboratory I	4
Engr. 320 Heat Transfer	3
Engr. 327 & 327L Advanced Strength of Materials	4
Engr. 330 Theory of Structures	3
Engr. 331 Design of Steel Structures	4
Engr. 371 & 371L Elementary Machine Design	4
Engr. 374 & 374L Steam Power Engineering	4
Engr. 433 Indeterminate Structures	3
Engr. 470 & 470L Advanced Machine Design	4
Engr. 475 Internal Combustion Engines	3
Engr. 477 Compressible Fluid Flow	3
Bus. Org. 221 Mathematics of Finance	3
Math. 310 Partial Differential Equations	3
Math. 360 Numerical Analysis	3

Mechanical Engineering

The Mechanical Engineering curriculum requires a total of 153 hours. In addition to the required 140 hours, each student must complete 13 hours from the list of electives following the curriculum below.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. actvity courses	1
Orientation 100	1
	32

Second Year	Hrs.
Comm. 107 Basic Course III	3
Math. 251, 252 Analytic Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. actvity courses	1
	30

Third Year	Hrs.
English (any 200-level literature course), or Hum. 201	3
History (any 200-level history course)	3
Engr. 220 Analytical Mechanics: Statics	3
Engr. 251 General Metallurgy: Adaptive	3
Engr. 313 Fundamentals of Electrical Engineering	4
Engr. 314 & 314L Elements of Electrical Devices	4
Engr. 317 Applied Thermodynamics	3
Engr. 320 & 320L Heat Transfer	4
Math. 309 Ordinary Differential Equations	3
Math. 310 Partial Differential Equations	3
	33

Fourth Year	Hrs.
Econ. 319 Economics of American Industry	3
Engr. 301 Report Writing	2
Engr. 325 Analytical Mechanics: Dynamics	3
Engr. 326 & 326L Elementary Strength of Materials	4
Engr. 327 & 327L Advanced Strength of Materials	4
Engr. 328 & 328L Hydraulics	4
Engr. 329 Dynamics of Machinery	2
Engr. 374 & 374L Steam Power Engineering	4
Philosophy and Religion elective or Hum. 401 or 402	3
	29

Fifth Year	Hrs.
Engr. 371 & 371L Elementary Machine Design	4
Engr. 401-402 Thesis	4
Physics 426 & 426L Elements of Nuclear Physics	4
Engr. 470 & 470L Advanced Machine Design, or Engr. 472 & 472L Principles of Nuclear Reactors	4
Elective (Group A)	3
*Elective (Group A or B)	3
Elective (Liberal Arts)	3
	25

Electives

GROUP A	Hrs.
Engr. 470 Advanced Machine Design	3
Engr. 471 Refrigeration and Air Conditioning	3
Engr. 472 Principles of Nuclear Reactors	3
Engr. 475 Internal Combustion Engines	3
Engr. 477 Compressible Fluid Flow	3
GROUP B	
Chem. 205 Qualitative Analysis	3
Engr. 252 General Metallurgy: Extractive	3
Engr. 311 Electrical Circuits	3
Engr. 315 Transient Analysis	3
Engr. 330 Theory of Structures	3
Engr. 366 Industrial Organization and Management I	3
Engr. 430 Concrete Design	3
Engr. 441 Computer Techniques	3
Math. 320 Vector Analysis	3
Math. 340 Mathematical Statistics I	3
Math. 360 Numerical Analysis	3
Math. 371 Advanced Calculus	3
Phys. 304 Introduction to Modern Physics	3
Phys. 322 Physical Optics and Advanced Light	3

LIBERAL ARTS

Courses in art, history, music, literature, a foreign language, humanities, and philosophy, for which the prerequisites have been met. Bus Org. 221, Mathematics of Finance, is also acceptable.

*This technical elective may be omitted by a student electing six hours in a foreign language.

Metallurgical Engineering

The Metallurgical Engineering curriculum requires a total of 152 hours. In addition to the required 140 hours, each student must complete 12 hours (six technical and six liberal arts) from the list of electives following the curriculum below.

First Year	Hrs.
Chem. 123-124 General Chemistry	8
Comm. 105-106 Basic Course I-II	6
Engr. 102 Engineering Drawing	3
Engr. 202 Engineering Drawing: Descriptive Geometry	3
Math. 151 Introduction to Mathematical Analysis	5
Math. 152 Analytic Geometry and Calculus I	5
H. E. & P. E. actvity courses	1
Orientation 100	1
	32

Second Year	Hrs.
Comm. 107 Basic Course III	3
Engr. 251 General Metallurgy: Adaptive	3
Engr. 252 General Metallurgy: Extractive	3
Math. 209-210 Analytical Geometry and Calculus II & III	10
Physics 201-202 General Physics	8
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. actvity courses	1
	30

Third Year	Hrs.
Engr. 220 Analytical Mechanics: Statics	3
Engr. 255 Metallurgical Calculations	3
Engr. 313 Fundamentals of Electrical Engineering	4
Engr. 314 & 314L Elements of Electrical Devices	4
Engr. 351, 352 Physical Metallurgy	6
Engr. 351L, 352L Metallography Laboratory	2
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
	28

Fourth Year	Hrs.
Chem. 401 Physical Chemistry	4
Econ. 319 Economics of America Industry	3
Engr. 301 Report Writing	2
Engr. 325 Analytical Mechanics: Dynamics	3
Engr. 326 & 326L Elementary Strength of Materials	4
Engr. 453, 454 Advanced Metallography	4
Hist. 105, 106 History of Western Civilization	6
	26

Fifth Year	Hrs.
Physics 426 Elements of Nuclear Physics	3
Engr. 401-402 Thesis	4
Engr. 406 Metallurgical Processes: Extractive	3
Engr. 407 Metallurgical Process: Adaptive	3
Engr. 455 Ferrous Production Metallurgy	3
Engr. 456 Nonferrous Production Metallurgy	3
Engr. 457 X-Ray Metallography	2
Philosophy and Religion elective or Humanities 401 or 402	3
	24

Electives

	Hrs.
Engr. 327 Advanced Strength of Materials	3
Engr. 365 Quality Control	6
Engr. 458 Advanced Materials Science	3
Engr. 472 Principles of Nuclear Reactors	3
Foreign language (German, French, or Russian)	6
Math. 309 Ordinary Differential Equations	3
Math. 310 Partial Differential Equations	3
Math. 340-341 Mathematical Statistics I-II	6
Chem. 402 Physical Chemistry	4
Social Science or Humanities	6

The Dana School of Music

Charles H. Aurand, Dean
Donald W. Byo, Assistant Dean

ORGANIZATION AND DEGREES

Objectives

The Dana School of Music of Youngstown University began in 1869 as Dana's Musical Institute in Warren, Ohio. It was merged with Youngstown College in 1941. The former Charles S. Thomas mansion, a block north of the main campus, became its home and remains its principal building.

The purpose of the Dana School of Music of Youngstown University is to complement the general objectives of the University by providing intensive professional training in music based on a thorough understanding of the fundamental skills and the theory upon which all music rests, and to provide for the non-music major an opportunity to develop his background of musical knowledge.

The requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of the National Association of Schools of Music, of which the Dana School of Music is a member.

The school offers instruction for both professional and avocational needs. Provided that they are capable of college-level work, students of the University who have studied voice or an instrument may continue the study of music, subject only to the limitations imposed by their respective schools or divisions.

The curricula of the Dana School of Music may be divided into four components: Music Education, Theoretical Studies, Liberal Arts, and Applied Music.

The School of Music offers courses leading to the degree of Bachelor of Music, with the major in piano, organ, voice, any standard string or wind instrument, percussion, theory, composition, sacred music, or music education. It also provides the courses for the major in the history and literature of music for the degree of Bachelor of Arts.

With the co-operation of the School of Education, the music education department prepares students for certification as music teachers in public schools, and also provides the music courses needed for the general elementary teaching certificate. Music education students have ample opportunity for practice teaching, since the University co-operates closely with the public schools of Youngstown and vicinity.

Credit in music is allowed in varying amounts toward the other degrees granted by Youngstown University.

Buildings

The school's main building, at 616 Wick Avenue, contains the administrative offices, thirteen studios, four classrooms, four soundproof record-playing rooms, and the record library. The Dana Annex, directly behind the main music building, contains twenty soundproof practice rooms and a pipe organ practice room. In the second story of Central Hall, on the main campus, are two studios, a soundproof rehearsal and recital hall seating three hundred, and instrumental and choral libraries. Frequent use is made of the C. J. Strouss Memorial Auditorium for concerts and recitals.

Equipment

Equipment includes fifteen grand pianos, twenty-seven uprights, a Sperrhake harpsichord, three practice organs, and band and orchestra instruments. The 4-manual Moeller organ of the Trinity Methodist Church is available for teaching and for practice by students preparing for their senior recitals.

Libraries

The library of band, orchestral, and choral music is extensive, and is representative of musical periods from the Renaissance to the present. The large music section of the University Library contains books and music for study by students in music literature, music education, and theory classes. The record library, located in the Dana School for easy access for class work and for use by the students in the several listening rooms, is representative of the complete field of music history and literature. The School of Music invites students of other schools of the University to make use of the listening opportunities available.

Scholarships and Loans

The school of music has at its disposal a number of scholarships, which are awarded, after competitive auditions, on the basis of talent, intelligence, and need. Applications should be directed to the Dean of the Dana School of Music. For other scholarships, see *Scholarships and Loans* in the General Information section.

Placement Service

Through its many alumni, the school can give its graduates considerable assistance in finding professional positions. Its contacts extend through forty-two states, and each year requests for graduates are received from all branches of the profession. Full services of the University Placement Office are available to music students. For further information, see *Placement Service* in the General Information section.

Musical Activities

The Dana School of Music supplements the concerts of the Monday Musical Club and the Youngstown Philharmonic Orchestra with the *Dana Artists' Series*. This series brings to the University and to the public artistic solo and ensemble programs featuring faculty members and guest artists, composers, and musicologists. In addition, the faculty presents a series of complimentary programs for the general public.

Student recitals afford additional training through experience in public performance. Besides graduation recitals, usually given in the C. J. Strouss Memorial Auditorium, there are informal student recitals every Wednesday at 1 p.m. in Strouss Auditorium. Attendance at recitals is obligatory for music students. Additional hours of credit in the applied field may be required if attendance is impossible.

The *Dana Chorus* is an all-school group whose primary purpose is to acquaint music students and the general public with the great masterworks of choral literature. The group presents a concert each semester, in which a major work is performed. Students who are not members of the Dana School of Music are also invited to apply for membership.

The *Concert Choir* is a select chorus which performs a wide range of works from the choral repertoire. Membership is by audition.

The *Madrigal Singers* are a group of sixteen selected students from the School of Music. The group studies and sings *a cappella* compositions of the English madrigal school, modern arrangements of folk tunes, and suitable contemporary works.

The *University Chorus* is an all-campus choral group open to those students of the university who enjoy singing the wide variety of music arranged for mixed voices.

The *University Bands* are an integral part of campus life and are open to all students in the University. The *Marching Band* functions during the football season and is open to all who can qualify. For the *Concert Band*, which presents programs of various types of band music, members are selected through auditions.

The *Symphony Orchestra* provides opportunity for musical growth and development in its presentations of symphonic works. It possesses an adequate library of symphonic and chamber music. It is open to all students in the University who can qualify.

The *String Quartet*, the *String Ensemble*, and the *Brass, Woodwind*, and *Percussion Ensembles* are restricted to students of the School of Music.

Opera is a tradition in Youngstown University. Besides programs of short operas and scenes from operas there is an annual major production of a work from standard opera repertory. Most members of the casts are students of the School of Music, but qualified students in the University may audition for the cast, the opera chorus, or the opera orchestra.

Professional Fraternities

Alpha Nu Chapter of Sigma Alpha Iota, International Professional Music Fraternity for Women, and Delta Eta Chapter of Phi Mu Alpha Sinfonia Fraternity of America, are chartered to the Dana School of Music.

Other Student Activities

Students of the School of Music may take part in other Youngstown University activities as described under *Student Activities*, in the General Information section. The Youngstown Chapter of Composers, Authors and Artists of America is also open to University students.

The Alumni Association

The Dana School of Music has a large and active Alumni Association, formed many years ago during the school's independent existence. The organization is the means of a continuing relationship between the school and its graduates, and its services are continually increasing. See also *Alumni Association*, in the General Information section.

Tuition for Full-Time Students*

The rates for full-time music students are stated and explained in the General Requirements and Regulations section, under *Fees and Expenses*. The basic semester charge of $420.00 includes tuition and major applied music fees for major and minor courses. In the major course in applied music it provides for three half-hour private lessons a week in one subject. In the minor course an additional $68.00 is charged for each half-hour lesson a week or $10.00 as a course fee for class instruction. The use of practice rooms is included in private lesson charges. Course-fees or other special fees applicable during a particular semester are added to the above.

Additional applied music lessons, or any courses in excess of a total of 15 semester hours, are payable at the pertinent rates as stated under *Tuition*, in the General Requirements and Regulations section.

Tuition for Part-Time Students

A part-time student for the degree of Bachelor of Music is charged for applied music at the rates listed below under *Tuition*

*A full-time music student is one enrolled in the Dana School of Music and carrying 12 or more semester hours, including applied music courses, but exclusive of music ensemble courses.

for Applied Music and, for any other course he takes, at the ordinary rates for part-time students.

Tuition for Applied Music

The Applied Music Charge for full-time and part-time students is explained in the General Requirements and Regulations section. The rate for one half-hour private lesson a week during a semester of seventeen weeks is $68.00.

Tuition for Special Students in Applied Music

A student from another unit of the University who studies applied music pays at the rates listed above under *Tuition for Applied Music*. These charges are in addition to the regular tuition and are payable under the same conditions as all other University fees. (Such a student must first report to the office of the Dean of the School of Music for assignment to a teacher.)

Tuition for Private Students in Applied Music

A student from outside the University studying with any of the School of Music faculty members pays at the rates listed above under *Tuition for Applied Music*. The following policies prevail:

Arrangements for lessons and for assignment to teachers must first be made through the Dean of the Dana School of Music.

Payment must be made either in advance for the complete term (semester or summer session), or under an installment contract arranged through the Business Office (see the General Requirements and Regulations section). All payments are made to the Cashier in the Main Building. In case of official withdrawal during a term, fees paid in advance will be refunded according to the number of lessons taken during that term. No student may enroll for a new term until all previous lessons have been paid for.

No private student may enroll for less than a full term. Lessons missed (with satisfactory excuse) must be made up by the end of the term. No lessons will be carried over from one term to another.

Special Fees

1. *Piano Practice Fee.* The fee for piano practice is $5.00 a semester for a major and $2.00 a semester for a minor.

2. *Organ Practice Fee.* The charge for practice on the University pipe organ is $40.00 a semester for a major (10 hours of practice a week) or $20.00 a semester for a minor (5 hours of practice a week).

3. *Instrument Rental Fee.* The School of Music has instruments which may be rented for a fee of $5.00 a semester for each instrument. The

student will receive the instrument in playing condition: thereafter he must supply his own strings, reeds, etc.; he is responsible for the care and safekeeping of the instrument, and he must return it at the end of the semester (or earlier if he withdraws from the University) in as good condition as when he received it.

4. *Student Recital Fee.* Any student or combination of students giving a senior recital or similar public recital using University facilities pays a fee of $15 for each recital to cover the necessary expenses.

Application and Examinations

An applicant for admission to the Dana School of Music must satisfy the general requirements for admission to the University (see the General Requirements and Regulations section). His application for admission to the School of Music should be submitted to the dean of the school (from whose office application forms are obtainable) by August 1 for the fall semester or Janaury 1 for the spring semester.

Every freshman takes a placement examination to determine his proficiency in applied music and general musicianship. These examinations are usually given one week before the opening of a semester; dates are announced.

The entering student must give considerable thought to the branch of applied music in which he will specialize, as a change of curriculum later on is likely to delay his graduation.

Admission to Courses for the Degree of Bachelor of Music

Scholastic Requirements

The applicant's high school courses should include the preparatory courses specified below under Requirements for Degrees.

Musical Proficiency

It is expected that the applicant will have developed a certain proficiency in one or more branches of applied music before entering the University, as he must meet certain standards in technique and repertory. His qualifications are determined by the placement tests mentioned above; and the student not qualifying for the first regular course in his major branch of applied music takes preparatory work until he is ready to undertake the regular courses.

The student wishing to specialize in music theory or in composition, or to prepare for advanced study after graduation from the University, should present evidence of his ability to handle the materials of music.

Admission from Other Institutions

The general policy is stated in the General Requirements and Regulations section. Advanced standing in applied music

and in aural and written theory is granted tentatively and must be validated by examinations.

Special Students

The general policy is stated in the General Requirements and Regulations section. Accordingly, the School of Music provides training for mature students who wish to improve their playing ability or to study music for cultural purposes, but who cannot enter the degree courses. Private lessons on all instruments and in voice are available to such students.

Requirements for the Degree

Bachelor of Music

It is the student's responsibility to see that he satisfies all the graduation requirements for the degree he seeks. For the Bachelor of Music degree, these consist of:

1. The pre-college or preparatory study, of two kinds:

a. Academic. The specified courses are listed below; for further information, see the General Requirements and Regulations section. These courses are normally taken in high school; those lacking must be made up before the junior year in the University.

b. Musical. As explained above, an entrant lacking suitable proficiency must develop it after entrance before he can undertake the required college-level music courses.

2. The courses and other requirements to be completed in the University. They are explained in the General Requirements and Regulations section but are recapitulated below.

Most curriculums leading to this degree require from 134 to 139 semester hours of credit and are designed to be completed in four academic years. A student may finish any curriculum in less than the usual time if he can carry heavier loads successfully.* A student planning to take summer courses should consult his adviser.

R. O. T. C. students are allowed certain modifications of the requirements, as explained in the General Requirements and Regulations section.

PRE-COLLEGE

ACADEMIC

SUBJECT	HIGH SCHOOL UNITS
English	3
United States history and civics	1
Mathematics	1
Science	1
Others**	10

*This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while enrolled in classes.

French, German, or Italian will be most advantageous for the student intending to major in voice. See **Proficiency in a Foreign Language, in the College of Arts and Sciences section.

MUSICAL

Proficiency adequate for undertaking college-level music courses.

IN THE UNIVERSITY	SEMESTER HOURS OF CREDIT
REQUIREMENTS IN ADDITION TO COURSES	
Upper division status (including completion of any specified preparatory courses lacking at time of entrance).	
Major and minor requirements For details, see the complete year-by-year curriculums at the end of this section. A grade of C or lower may indicate a need for retention on a certain proficiency level: this will be determined by the student's proficiency in his major instrument examination.	
Course-level requirements.	
Point index requirements.	
Residence requirement.	
Application for graduation.	

COURSE REQUIREMENTS

(OTHER THAN THE MAJOR AND MINOR)

BASIC COURSES	
Communication 105-106-107, Basic Course I, II, III	9
Health Education and Physical Education 109M or 109W, Health Education	2
Health Education and Physical Education activity courses	2
Orientation 100, Freshman Orientation†	1
AREA COURSES	
Social studies:	
Social Science 101 and 102, Introduction to the Social Sciences I, II	6
History 201 and 202, The United States	6
Religion:	
A course in the Philosophy and Religion department, or Humanities 401 or 402, Older Classics I, II	3
Science:	
Physics 101, Fundamentals of Physics, and Physics 208, Sound	6
NON-PROFESSIONAL COURSE	
Psychology 201, General Psychology	3
PROFESSIONAL COURSES	
Music 103-104, Theory I	8
Music 203-204, Theory II	8
Music 319-320, Vocal and Iustrumental Conducting and Ensemble	6
Music 245-246, History of Music	4
Music 307-308, Survey of Music Literature	4
Music 353, Counterpoint I	2
Music ensembles	4
Recital	0

†Not required of part-time students until they have completed 64 semester hours.

For Two Majors, in Music and in Music Education

Students who want to complete a major in an instrument or in voice, theory, composition, or sacred music, and also a major in music education, must satisfy all the requirements of one of the first four curriculums given below, and the music education curriculum. Such a combined program of study may be arranged in consultation with the Dean of the Dana School of Music.

Requirements for the Degree

Bachelor of Arts

with Major in the History and Literature of Music

For the degree of Bachelor of Arts with the major in the history and literature of music, only the courses for the major are taken in the Dana School of Music. The rest are taken in the College of Arts and Sciences, and the other requirements for the degree will be found in the section concerned with that school.

The music study for this degree is regarded as purely cultural and non-professional, and includes no courses in music education. The major consists of 47 semester hours, as follows:

Music 103-104, 203-204, Piano*	8
Music 103-104, Theory I	8
Music 203-204, Theory II	8
Music History and Literature**	16
Music 317, Analytical Techniques	2
Music 353, Counterpoint I	2
Music 407, Orchestration	2
Music ensembles	6
Laboratory science‡	8
Physics 208, Sound‡	3
Art 113, History and Appreciation of Art: General	3

*If the student demonstrates that he has already attained this level of proficiency, he may substitute other music courses, according to his choice and his qualifications.

**Music 380, 381, Music History and Literature is required. The additional 10 hour requirement may be met by a combination of the following: Music 427-428, Symphonic Literature; Music 479, Vocal Literature; Music 370, Eighteenth Century and the Viennese Classical School of Music; Music 371, Baroque Music; Music 372, Contemporary Music; Music 373, Wagner and the Music Drama; Music 374, Beethoven and His Influence in the Musical World.

‡A minimum of 11 hours of science is required. 8 hours must be a laboratory science in one field; Physics 208 will then fulfill the remaining three hours of the science requirement.

COURSES OF INSTRUCTION AND CURRICULUMS†

FACULTY

Charles H. Aurand	Conducting, Methods, Woodwind Instruments
Theodore Baar	Violoncello, String Bass
Samuel S. Badal	Sacred Music, Madrigals, Organ
Donald W. Byo	Woodwind Instruments, Bassoon
Albert Caldrone	Clarinet
Robert Campbell	Theory, Low Brass
Oliver P. Cash	Music Education
William Catherwood	Piano
H. Dean Cummings	Low Brass
Fanny Cleve	Voice, Opera Workshop
Lisa Takacs Czifra	Piano
Nellie G. Dehnbostel	Theory
James Elson	Voice, Choir, Conducting
Diane Fentules	Piano
Dolores S. Fitzer	Piano
J. Robert Fitzer	Clarinet
Masa Fukui	Piano
Ronald L. Gould	Piano, Theory, Sacred Music
Elwin Haskin	Theory, Piano
Eva Haskin	Music Education
Lois M. Hopkins	Theory, French Horn
Robert E. Hopkins	Piano
Jacob Larson	Trumpet
Lorna Larson	Violin
Carl A. Marks, Jr.	Clarinet
Walter Mayhall	Flute
Leah M. McIlroy	Music Education
W. Frederick Miller	History of Music
Loyal B. Mould	Oboe
Esotto Pellegrini	Trumpet
Wealthie Bush Prince	Music Education
Wade Raridon	Voice, Chorus, Theory
Fred Rosenberg	Violin
Paul Rossi	Music Education
Irene Sample	Music Education
Edna G. Smith	Music Education
Myron J. Wisler	Percussion Instruments and Methods
Robert Witt	Composition, Music Literature

Applied Music

Students desiring credit must enroll for not less than one semester.

The student not qualifying for a 101 or 103 applied music course (whichever his curriculum requires) takes the relevant course 100 until his deficiency is overcome.

The student who can meet the applied music proficiency requirements of his curriculum without taking the courses designed to develop that proficiency may earn in other applied music courses as many hours of credit as he would in the courses not taken.

Advanced standing in applied music is granted tentatively after a placement examination given by members of the faculty. Final classification is made at the end of the first semester of residence study.

---

†The student should familiarize himself with the course-numbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained at the end of the General Requirements and Regulations section.

In most cases instruction is in one half-hour weekly lesson a credit, except where class instruction is given.

A student may transfer from a minor course to a major course if he has the approval of the faculty concerned. He is then assigned an appropriate major course number on the basis of his proficiency and repertory.

Proficiency examinations in applied music are given at the end of each semester. Promotion to the next applied course depends upon quality of performance and quantity of repertory.

No credit will be given in an applied music course if the student misses more than three lessons, if a minor, or six lessons, if a major. In case of prolonged illness, the lessons may be made up at the discretion of the teacher.

As far as teaching staff and practice rooms are available, enrollments in applied music will be accepted in the following order:

1. Full-time music majors
2. Other students in the University
3. Private students

A student's choice of teacher will be respected as far as possible, but final assignment rests with the Dean of the School of Music.

Ensembles

To enable students in music to have wide experience in the performance of music written for large instrumental and vocal groups, they are required to participate in music ensembles as follows: instrumental majors are required to participate in at least one major instrumental ensemble* for each semester of the four years, and in a major choral ensemble* for two years; voice majors must participate in a major choral ensemble for each semester of the four years and in a second major ensemble (choral or instrumental) for two years; piano, organ, and sacred music majors are required to sing in one of the major choral ensembles for four years. (In exceptional cases, ensemble participation may be waived by the Dean of the School of Music).

There is no tuition charge for any ensemble course. Several ensemble courses are open to all students of the University who are qualified for them. However, the awarding of credit for any ensemble course presupposes satisfactory participation. One hour of Marching Band credit may be substituted for one hour of the general requirement in physical activity courses.

Any ensemble course may be repeated any number of semesters.

Dana Chorus. Designed for the preparation and performance of major works, the group is open to any university student who can qualify. Required of most Dana students. *1 h. c.*

Concert Choir. A select chorus which performs a wide range of works from the choral repertoire. Membership by audition. *1 h. c.*

Madrigal Singers. A select vocal ensemble, open to students of the Dana School of Music. *1 h. c.*

University Chorus. Open to all students of the University. *1 h. c.*

*The major instrumental ensembles are Band (Concert and Marching) and Symphony Orchestra; the major choral ensembles are Dana Chorus and Concert Choir.

Concert Band. Open to any student in the University who can qualify. *½ or 1 h. c. each semester*

Marching Band. Open to any University student who can qualify. Functions only during the football season. Six hours a week. One hour of Marching Band credit may be applied toward the health and physical education activity requirement. *½ h. c.*

Marching Band Workshop. Lectures, demonstrations and practice in precision drill, block formation, street parade and phalanx drill. Rehearsal techniques, discipline and instrumentation are studied. Offered only in the summer session. *1 h. c.*

Opera Workshop. Open to all students of the University who are interested in the art and craft of stage production and the lyric theater. Students may audition for roles, in which they will be prepared musically and dramatically. In a practical, working atmosphere, study is also offered in stage lighting, the making of sets, costuming, makeup, etc. Both singers and stage crew may acquaint themselves with the history of opera, costume history, and general information about opera. The course culminates in the production of one or more operas. Credit may be taken in accordance with the amount of work to be undertaken by the student. Students may also enroll without credit. *1 to 4 h. c.*

Workshop in Medieval and Renaissance Music. Technique of performance on recorders and other medieval instruments. Problems involved in authentic reproduction of old music, instrumental, vocal, and mixed. The course is oriented towards at least one concert during the year. Prereq.: Music 245-246. *1 h. c. each semester*

Symphony Orchestra. Open to any student in the University who can qualify. *1 h. c. each semester.*

Percussion Ensemble. Limited to students of the School of Music. *½ h. c. each semester*

String Ensemble. Open to any University student who can qualify. *½ h. c. each semester.*

Woodwind Ensemble. Limited to students of the School of Music. *½ h. c. each semester.*

Brass Ensemble. Limited to students of the School of Music. *½ h. c. each semester.*

String Quartet. Limited to selected students of the School of Music. *½ h. c. each semester.*

Piano

100. For those who do not qualify for Piano 101 or 103. This course may be repeated. *1 h. c.*

Major Courses

101-102. All major and minor scales and tonic, dominant seventh and diminished seventh arpeggios, hands together, four octaves. Bach, *Two-Part Inventions* and *Three-Part Inventions*; less difficult sonatas of Mozart or Haydn; romantic and contemporary compositions. *3 + 3 h. c.*

201-202. Scales in thirds, sixths, and tenths. Bach, *French Suites, Well-Tempered Clavier*; sonatas of Mozart, Haydn, early Beethoven, or Schubert; romantic and contemporary compositions *3 + 3 h. c.*

301-302. Continuation of scale and arpeggio study. Bach, *English Suites, Well-Tempered Clavier*; Beethoven sonatas; Mozart, Haydn, or early Beethoven concertos; less difficult etudes of Chopin; romantic and modern compositions. *3 + 3 h. c.*

401-402. Scales in double thirds and octaves. Bach, *Partitas, Toccatas, Well-Tempered Clavier*; Beethoven sonatas; romantic concertos; larger works of Chopin; romantic and contemporary compositions. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required

103-104.	See Piano 101-102.	*2 + 2 h. c.*
203-204.	See Piano 201-202.	*2 + 2 h. c.*
303-304.	See Piano 301-302.	*2 + 2 h. c.*
403-404.	See Piano 401-402.	*2 + 2 h. c.*

Minor Courses

Students not majoring in piano must complete a four-hour piano minor. At the end of this period, and upon recommendation of their piano teacher, they will be examined in the following skills:

(1), the ability to sight-read songs of the type found in a song book;

(2), the ability to harmonize at sight, improvising a simple piano accompaniment for songs requiring the use of I, IV, V chords and some simple modulations; and to transpose the songs and harmonizations to other keys; and

(3), the ability to sight-read fairly fluently simple accompaniments, vocal or instrumental, and simple piano compositions of the type used for school rhythmic activities.

Students who fail to exhibit satisfactory keyboard facility in this examination must continue piano study without credit until they can meet these requirements.

105-106. Elements of keyboard technique, with emphasis on developing fluency in sight-reading. Easiest compositions of Bach; Bartok, *Mikrokosmos*, vol. 1. All major and minor scales and tonic chords and arpeggios, hands separately. *1 + 1 h. c.*

205-206. All major and minor scales and tonic, dominant seventh and diminished seventh arpeggios, hands separately, three octaves. Bach, selections from *Notenbuechlein* or *Clavier-Buechlein*; Mozart, earliest pieces. Beethoven, sonatinas. Romantic and contemporary compositions. *1 + 1 h. c.*

305-306. Scales and arpeggios as above, hands together. Bach, *Little Preludes*, selected suite movements. Haydn, *Divertimenti*. Clementi, sonatinas. Romantic and contemporary compositions. *1 + 1 h. c.*

405-406. Scales and arpeggios as above, in faster tempo. Bach, *Two-Part Inventions*. Mozart, *Sonata facile*. Beethoven, easier sets of variations. Romantic and contemporary compositions. *1 + 1 h. c.*

Harpsichord

107-108. Class instruction in basic technique, with discussion of construction, literature, ornamentation, and performance practices. *1 + 1 h. c.*

Organ

100. Intended for those who do not qualify for Organ 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Schneider-Warren, *Studies;* Buck, *Pedal Phrasing Studies;* preparatory manual exercises. Bach: choral preludes for manuals; trios for manuals and pedals; chorale and preludes from *Das Orgelbuechlein;* Variation II from *Sei Gegrusset* (Book V, ed. Peters); short preludes and fugues; *Canzona Fugue in B minor* (Corelli); *Prelude and Fugue in E Minor* (Lesser, ed. Schirmer). Also modern compositions. *3 + 3 h. c.*

201-202. Continuation of Schneider and Buck studies; Neilson, *Pedal Studies.* Bach: *Fantaisie and Fugue in C Minor* (Book III, ed. Schirmer); *Fugue in G Minor* (Book II, ed. Schirmer); *Prelude and Fugue in A Major; Prelude in C Minor* (Book III, ed. Schirmer); *First Sonata; Prelude in F Minor;* chorale preludes. Mendelssohn: *Second Sonata.* Pieces by the old masters from *Historical Series* (Vol. I, ed. Bonnet). Modern compositions by American, French, English, or German composers. *3 + 3 h. c.*

301-302. Bach: chorale preludes: *Prelude and Fugue in E Minor* (Wedge); *Prelude and Fugue in A Minor* (Book IV, ed. Schirmer); *Second Sonata; Toccata and Fugue in D Minor* and *Toccata in D Minor* (Dorian); *Prelude and Fugue in G Major.* Franck: *Cantabile; Prelude, Fugue, and Variation; Pastorale; Piece Héroique.* Mendelssohn: *Third Sonata.* Modern compositions. *3 + 3 h. c.*

401-402. Bach: *Third Sonata;* chorale preludes; *Fantaisie and Fugue in G Minor; Toccata, Adagio, and Fugue in C Major; Prelude and Fugue in E Flat* ("St. Ann's"); *Passacaglia and Fugue in C Minor; Prelude and Fugue in B Minor.* Franck: *Chorale in A Minor.* Mendelsshon: *First Sonata. Sixth Sonata.* Vierne: selected movements from the six symphonies. Widor: *Sixth Symphony.* Sowerby: *Suite, Symphony in G Minor.* Roger-Ducasse: *Pastorale.* Bennett: *Sonata in G;* shorter compositions suitable for recitals. Concerto for organ and orchestra. Public recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104.	See Organ 101-102.	*2 + 2 h. c.*
203-204.	See Organ 201-202.	*2 + 2 h. c.*
303-304.	See Organ 301-302.	*2 + 2 h. c.*
403-404.	See Organ 401-402.	*2 + 2 h. c.*

Minor Courses

105-106.	See Piano 105-106.	*1 + 1 h. c.*
205-206.	See Piano 205-206.	*1 + 1 h. c.*
305-306.	See Piano 305-306.	*1 + 1 h. c.*

Voice

100. For those who do not qualify for Voice 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Concentration is upon the development of basic technique for the singer: breath control, freedom and relaxation of the vocal mechanism, maximum resonance, and accurate articulation. At the teacher's discretion, the student will apply the technique acquired in selected works of the vocal repertoire. Foreign-language songs may be introduced. Amount of repertoire to be decided on an individual basis. *3 + 3 h. c.*

201-202. Primary emphasis continues to be placed upon the development of the voice and the mastery of technique. The student will be expected to have attained sufficient mastery by the end of this year to be able properly to sing a number of songs, both in English and in foreign languages. One or two arias, each from opera and oratorio, will be included. Minimum requirements established by the Voice Faculty; requirements beyond these established by the teacher on an individual basis. *3 + 3 h. c.*

301-302. Technical study continued with a view to maintaining steady growth in technical mastery. The repertoire will be enlarged to include a wide range of styles and periods. Songs appropriate to the individual voice will be chosen in English, French, Italian, and German. Operatic and oratorio arias will be required. *3 + 3 h. c.*

401-402. Advanced literature and technique. Additional songs of the standard repertoire by French, German, Italian, Russian, English, and American composers. The student will demonstrate ability to sing in three foreign languages, and will have a repertoire of at least four operatic arias, four oratorio arias, twenty classic and twenty modern songs, for immediate use. He should have a knowledge of the general song literature. Each senior will be required to prepare a public recital and give a creditable performance of a program of songs and arias chosen from this and previous courses. *3 +3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. Minimum attainment at the end of four years will be those goals set for the third year above. Senior recitals will be required.

103-104. See Voice 101-102. *2 + 2 h. c.*
203-204. See Voice 201-202. *2 + 2 h. c.*
303-304. See Voice 301-302. *2 + 2 h. c.*
403-404. See Voice 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Concentration is upon producing a pleasing and musical vocal tone. In addition to exercises chosen on the basis of students' needs, they will be expected to learn a limited number of songs. Amount of repertoire decided by Voice Faculty. Open to students with no previous training. *1 + 1 h. c.*

205-206. Continued study of vocal technique, and literature suited to the individual voice. Songs and arias in foreign languages at the discretion of the instructor. Prereq.: Music 105-106. *1 + 1 h. c.*

305-306. Advanced vocal technique and literature. For those who can qualify. Prereq.: Music 105-106. *1 + 1 h. c.*

405-406. Advanced vocal technique and literature. For those who can qualify. Prereq.: Music 105-106, 205-206, 305-306. *1 + 1 h. c.*

Violin

100. For those who do not qualify for Violin 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Kreutzer, *Studies*, to No. 32. Concertos by Vivaldi, Nardini, Rode, deBeriot. Sonatas by Corelli, Veracini, Leclair. Technical material including Sevcik, Op. 8 and 9, Schradier, Casorti. Not fewer than six short compositions suitable for recital repertoire. Major and minor scales and arpeggios in three octaves, using fundamental strokes. *3 + 3 h. c.*

201-202. Kreutzer concluded; Fiorillo, Rovelli. Concertos by Bach, Viotti, Kreutzer, deBeriot. Sonatas by Tartini, Mozart, Handel. Not fewer than six compositions added to repertoire. Scales and arpeggios in three octaves continued with secondary strokes. Technical materials of 101-102 continued. *3 + 3 h. c.*

301-302. Rode, *Studies.* Concertos by Mozart, Bruch, Vieuxtemps. Sonatas by Beethoven, Bach. Not fewer than six compositions added to repertoire. Scales in double stops in all keys. Technical material from Sevcik, Op. 4, Part 4; Schradier, Book II. *3 + 3 h. c.*

401-402. Advanced studies from Wieniawski; Dont, Op. 35; Gavinies and Paganini concertos. Wieniawski, Saint-Saens, Mendelssohn, Lalo, Beethoven, etc. Completion of repertoire requirement; senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Violin 101-102. *2 + 2 h. c.*
203-204. See Violin 201-202. *2 + 2 h. c.*
303-304. See Violin 301-302. *2 + 2 h. c.*
403-404. See Violin 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Fundamentals in correct posture and positions of the left hand and of the bow arm. Yost's *Violin Method* supplemented by Riegger's *Exercises.* Studies by Wohlfahrt and Rodin and easy first-position pieces. Scales and arpeggios in keys of not more than four accidentals. *1 + 1 h. c.*

205-206. Beginning of position studies. Maia Bang, Book III. Hans Sitt, Op. 32, Books II and III. Kayser, Op. 20, pieces in first three positions. Not fewer than six compositions by Seitz and Rieding. *1 + 1 h. c.*

305-306. Position studies continued. Maia Bang, Book IV. Schubert sonatinas. Mazas, *Special Studies.* Accozay and Hollander concertos. Easy double stops and scales. Scales and arpeggios in five positions. Not fewer than six new recital pieces. *1 + 1 h. c.*

405-406. Continued study of positions. Maia Bang, Book V. Studies by Mazas and Dont; beginning of Kreutzer. *Allegro Brillante* by Tenhave, concerto by Hollander, sonatas by Handel. Scales in three octaves. *1 + 1 h. c.*

Viola

100. For those who do not qualify for Viola 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Studies by Mazas, Kreutzer, Sitt, Schradier technic. Sonatas by Handel, repertoire material; not fewer than six scales. Scales and arpeggios in three octaves. *3 + 3 h. c.*

201-202. Studies by Kreutzer and Fiorillo. Sonatas by Vivaldi and Marcello. Scales and arpeggios continued. Six recital pieces. *3 + 3 h. c.*

301-302. Studies by Rode, Campagnoli, and Bruni. Concertos by Stamitz and Mozart. Scales in double stops. Six recital pieces. *3 + 3 h. c.*

401-402. Studies by Gavinies and Dolesji; sonatas by Bowen, Bach, and others. Scales and arpeggios continued. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Viola 101-102. *2 + 2 h. c.*
203-204. See Viola 201-202. *2 + 2 h. c.*
303-304. See Viola 301-302. *2 + 2 h. c.*
403-404. See Viola 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Fundamentals of left and right hand technics. Reading facility in alto clef is developed. Studies by Hofmann. Scales in the first position. Easy pieces. *1 + 1 h. c.*

205-206. Development of left hand facility. Beginning of lower positions. Studies by Kayser. Scales in positions. Pieces in positions. *1 + 1 h. c.*

305-306. First five positions. Studies by Mazas and Dont. Schubert sonatina. Seventeenth- and eighteenth-century sonatas. Six recital pieces. Scales in three octaves. Easy double stops. *1 + 1 h. c.*

405-406. Higher positions. Mazas, Kreutzer. Pieces by Nardini, Sitt, and others. Scales in three octaves. *1 + 1 h. c.*

Cello

100. Intended for those who do not qualify for Cello 101 or 103. This course may be repeated. *1 h. c.*

Major Courses

101-102. Studies from Dotzauer, Op. 35, and Duport. Scales and arpeggios in three octaves. Solos such as Bach, *Suite No. 1*, and Goltermann, *Concerto No. 4*. *3 + 3 h. c.*

201-202. Scales and arpeggios in four octaves. Franchomme studies. Repertoire to include Romberg, *Concerto No. 2*; Bach, *Suite No. 2* or *No. 3*; and Beethoven, *Sonata, Op. 69, in A Major*. *3 + 3 h. c.*

301-302. Scales in octaves, thirds, sixths. Popper, *Studies*. Concert pieces to include Breval, *Sonata in G Major*, or Eccles, *Sonata in G Minor*, and concertos by Boccherini and Lalo. *3 + 3 h. c.*

401-402. All scales in octaves, thirds, sixths, and tenths. Piatti, *Studies*, and Servais, *Caprices*. Repertoire such as Reger, *Solo Suite No. 2*, and Haydn or Dvorak concerto. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Cello 101-102. *2 + 2 h. c.*
203-204. See Cello 201-202. *2 + 2 h. c.*
303-304. See Cello 301-302. *2 + 2 h. c.*
403-404. See Cello 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Kummer, *Method*, and Schroeder, *Studies*. Scales and solos in first position. *1 + 1 h. c.*

205-206. Schroeder, *Studies.* Scales. Klengel, *Concerto in C Major;* Marcello, *Sonata in F Major.* *1 + 1 h. c.*

305-306. Schroeder, *Studies.* Scales. Loeillet, *Sonata in G Major;* Goltermann, *Concerto No. 4.* *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

String Bass

100. For those who do not qualify for String Bass 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Simandl, *30 Etudes.* Major and minor scales in two octaves. Solos such as Anderson, *Sonatina,* and Chapini, *Fantaisie Concertante.* Bach, *Minuet and Gavotte;* Vivaldi, *Intermezzo.* *3 + 3 h. c.*

201-202. Hrabe, *Studies.* Repertoire, such as Cappuzzi, *Concerto;* sonatas by Galliard and Loeillet; Ratez, *Six Characteristic Pieces,* Op. 46. *3 + 3 h. c.*

301-302. Bille, *Method,* Part II, Books 4 and 5. Concert pieces to include sonatas by Eccles, Antoniotti, and D'Andrieu. *3 + 3 h. c.*

401-402. Kreutzer, *Studies.* Reynolds, *Orchestra Studies;* Strauss, *Orchestra Studies.* Solos to include Koussevitzky concerto or Dragonetti concerto. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See String Bass 101-102. *2 + 2 h. c.*
203-204. See String Bass 201-202. *2 + 2 h. c.*
303-304. See String Bass 301-302. *2 + 2 h. c.*
403-404. See String Bass 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Simandl, *Method,* Part I. Scales. *1 + 1 h. c.*

205-206. Simandl, *Method,* Part II. Bach, *Minuet and Gavotte;* Vivaldi, *Intermezzo.* *1 + 1 h. c.*

305-306. Simandl, *30 Etudes.* Anderson, *Sonatina.* *1 + 1 h. c.*

405-406. For those who can qualify. *1 + 1 h. c.*

Flute

100. To be elected by students who do not qualify for Flute 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Studies and solos such as Altes, *Method,* Book II; Kuhlau, *Duets,* Op. 10; Barrerre, *The Flautist's Formulae;* Boehm, *24 Caprice Etudes,* Op. 26; Bach-Barrerre, *Arioso;* Handel, sonatas; Pessard, *Bolero.* *3 + 3 h. c.*

201-202. Studies and solos such as Altes, *Method,* Book III; Anderson, *Etudes,* Op. 33, Op. 21; Kuhlau, *Duets,* Op. 81; Moyse, *24 Petits*

Duos Mélodiques; Bach, *Sonata No. 2;* Rogers, *Soliloquy;* Gluck, scene from *Orpheus;* Briccialdi, *Il Vento.* *3 + 3 h. c.*

301-302. Studies and solos such as Schindler, *Bach Studies;* Anderson, *Etudes,* Op. 30, Op. 15; Kuhlau, *Duets,* Op. 102; orchestral studies; Bach, *B Minor Suite;* Boccherini, *Concerto in D Major,* Op. 27; Mozart, concertos; Telleman, *Suite in A Minor.* *3 + 3 h. c.*

401-402. Jeanjean, *16 Studies in the Modern Style;* Moyse, *48 Virtuoso Studies;* orchestral studies; special work on piccolo; Bach, *Sonatas No. 1* and *No. 4 in A Minor Unaccompanied;* Ibert, *Piece;* Griffes, *Poem.* Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Flute 101-102. *2 + 2 h. c.*
203-204. See Flute 201-202. *2 + 2 h. c.*
303-304. See Flute 301-302. *2 + 2 h. c.*
403-404. See Flute 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Altes, *Method,* Book I; Moyse, *The Beginning Flutist;* Magnani, *Clouds and the Moon;* Loeillet solos. *1 + 1 h. c.*

205-206. Altes, *Method,* Book II; Boehm, *24 Caprice Etudes;* Mozart-Barrere, *Minuette in D Major;* Bach, *Polonaise* and *Badinage* from *B Minor Suite.* *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Flute 101-102. *1 + 1 h. c.*

405-406. Studies and solos of the level indicated for Flute 201-202. *1 + 1 h. c.*

Clarinet

100. To be elected by those who do not qualify for Clarinet 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Studies and solos such as Klose, *Method,* Book II; Rose, *40 Etudes,* Books I and II; Langenus, *Method,* Book III; Von Weber, *Concertino* and *Concerto in F Minor;* Jeanjean, *Clair Matin;* Mozart, *Concerto.* *3 + 3 h. c.*

201-202. Studies and solos such as Rose, *32 Etudes;* Baermann, *Method,* Book IV; Perier, *Etudes de Genres et Interprétation,* Book I; Marty, *First Fantasy;* Lefevre, *Fantaisie Caprice;* Haln, *Sarabande et Themes Varies.* *3 + 3 h. c.*

301-302. Studies and solos such as Rose, *20 Grand Studies;* Baermann, *Method,* Book V; Cavalini, *30 Caprices;* Perier, *20 Sonata Studies;* orchestral studies; Rabaud, *Solo de Concours;* Gaubert, *Fantaisie;* Stravinsky, *Three Pieces;* Schumann, *Phantasiestuecke.* *3 + 3 h. c.*

401-402. Studies and solos such as Stark, *24 Grand Studies;* Jeanjean, *18 Etudes;* Jeanjean, *16 Modern Etudes;* orchestral studies; Widor, *Introduction and Ronde;* Debussy, *Premiere Rhapsodie,* Brahms, sonatas; Milhaud, *Concerto.* Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Clarinet 101-102. *2 + 2 h. c.*
203-204. See Clarinet 201-202. *2 + 2 h. c.*
303-304. See Clarinet 301-302. *2 + 2 h. c.*
403-404. See Clarinet 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Klose, *Method*, Book I; Perier, *Le Débutant Clarinettiste*, *20 Etudes Melodiques et Faciles;* Gretchaninoff, *Suite Miniature;* Petit, *Piece de Concours.* *1 + 1 h. c.*

205-206. Perier, *20 Etudes Faciles et Progressives;* Rose, *40 Etudes*, Book I; Langenus, *Scale Studies;* Debussy, *First Arabesque for Clarinet;* Avon, *Fantaisie de Concours.* *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Clarinet 101-102. *1 + 1 h. c.*

405-406. Studies and solos of the level indicated for Clarinet 201-202. *1 + 1 h. c.*

Oboe

100. For those who do not qualify for Oboe 101 or 103. This course may be repeated. *1 h. c.*

Major Courses

101-102. Studies and solos such as Ferling, *48 Etudes;* Sellner, *Etudes for Oboe*, Book II; Handel, *Concerto in G Minor;* Labate, *Villanella;* Schumann, *Three Romances for Oboe.* *3 + 3 h. c.*

201-202. Studies and solos such as Labate, *16 Exercises;* Capelle, *20 Grand Etudes*, Book I; Cimarosa, *Concerto;* Nielson, *Romance;* Foret, *Sonata in G Major;* Ropartz, *Pastorale and Dance.* *3 + 3 h. c.*

301-302. Studies and solos such as Andraud, *Vade-Mecum* (etudes and orchestral studies); Bleuzet, *The Technique of the Oboe*, Book II; Loyon, *32 Modern Etudes;* Saint-Saens, *Sonata;* Hindemith, *Sonata;* Palidilhe, *Concertante.* Work on English horn begun. *3 + 3 h. c.*

401-402. Continued study of English horn. Studies and solos such as Andraud, *Vade-Mecum;* Gillet, *Advanced Studies;* Jeanjean, *Remembrances;* Rivier, *Improvisation and Finale;* Dallier, *Fantaisie Caprice;* Piston, *Suite.* Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Oboe 101-102. *2 + 2 h. c.*
203-204. See Oboe 201-202. *2 + 2 h. c.*
303-304. See Oboe 301-302. *2 + 2 h. c.*
403-404. See Oboe 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Studies and solos such as Andraud, *Method* (1949); Niemann-Labate, *Oboe Method;* Bakaleinikoff, *Elegy;* Templeton, *Siciliana;* J. Wagner, *Three Pastorales.* *1 + 1 h. c.*

205-206. Studies and solos such as Gekeler, *Method*, Book II; Verroust, *24 Etudes*, Op. 65, Books I, II; Pares, *Daily Technical Studies*; Klemcke, *Pastorale*; Handel, *Sonata in C Minor*; Gliere, *Chanson*; Bach-Gillet, *Three Little Pieces*. *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Oboe 101-102. *1 + 1 h. c.*

405-406. Studies and solos of the level indicated for Oboe 201-202. *1 + 1 h. c.*

Bassoon

100. For those who do not qualify for Bassoon 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Studies and solos such as Weissenborn, *Duets*; Oubradous, *Enseignement Complete du Basson*, Book I; Jancourt, *Reverie*; Foret, *Three Pieces*; Mozart, *First Concerto*. *3 + 3 h. c.*

201-202. Studies and solos such as Milde, Book II; Oubradous, *Enseignement Complete du Basson*, Book II; orchestral studies; Hindemith, *Sonata*; Handel, *Concerto in C Minor*; Jeanjean, *Capriccioso*. *3 + 3 h. c.*

301-302. Studies and solos such as Bozza, *Daily Studies*; Oubradous, *Enseignement Complete du Basson*, Book III; orchestral studies; Saint-Saens, *Sonata*; Grovlez, *Sicilienne* and *Allegro Giocoso*; Jancourt, *Cantilene*; Bruns, *Concerto*. *3 + 3 h. c.*

401-402. Studies and solos such as Giampieri, *Daily Studies*; Orefice, *Bravura Studies*; orchestral studies; Pierne, *Prelude de Concert*; Bozza, *Concerto*, Op. 49; Bozza, *Fantaisie*; Jeanjean, *Prelude and Scherzo*. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Bassoon 101-102. *2 + 2 h. c.*
203-204. See Bassoon 201-202. *2 + 2 h. c.*
303-304. See Bassoon 301-302. *2 + 2 h. c.*
403-404. See Bassoon 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Studies and solos such as Weissenborn, Op. 8, Book I; Jancourt, *Studies*, Book I; Isaak, *Jolly Dutchman*; Ziesi, *Souvenir*. *1 + 1 h. c.*

205-206. Studies and solos such as Weissenborn, Op. 8, Books I and II; Jancourt, *Studies*, Books I and II; Bakaleinikoff, *Ballad*; Weissenborn, *Capriccio*. *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Bassoon 101-102. *1 + 1 h. c.*

405-406. Studies and solos of the level indicated for Bassoon 201-202. *1 + 1 h. c.*

Trumpet

100. To be elected by those who do not qualify for Trumpet 101 or 103. This course may be repeated. *1 h. c.*

Major Courses

101-102. The development of a daily practice routine suitable to the individual, for the purpose of acquiring a correct and lasting command of fundamental skills such as tone production, embouchure, breath control, flexibility, and legato and staccato articulations, using Arban's *Method* for cornet, *Etudes* by Hering, *Daily Drills and Studies* by Schlossberg. Major and minor scales and chords, introduction to transposition, sight-reading, and the study of cantabile solos such as the *Lieder* of Schubert, Brahms, Schumann, and other solos of grade III difficulty. *3 + 3 h. c.*

201-202. Concentration upon basic techniques: slurs, scales, chords, intervals, and single, double, and triple articulations in major and minor keys, using Arban, *Method;* Schlossberg, *Daily Drills and Studies;* Clark, *Studies;* Sachse, *Transposition Studies; Orchestral Studies from the Symphonic Repertoire.* Cantabile solos, and other solos of grade III and IV difficulty. *3 + 3 h. c.*

301-302. Continuation of technical studies: Arban, *Method;* Schlossberg, *Studies;* Paudert, *Studies;* Brandt, *Orchestral Studies;* Petit, *Studies;* Sachse, *Transposition Studies; Orchestral Studies from the Symphonic Repertoire.* Sight-reading. Solos of grade IV and V difficulty by Fitzgerald, Vidal, Barat, Goeyens, Deboeck, Busser, and others. *3 + 3 h. c.*

401-402. Advanced studies by Clark, Peitzsch, Laurent, Petit, Charlier; Sachse, *Transposition Studies; Orchestral Studies from the Symphonic Repertoire.* Sight-reading. Solos of grade V and VI difficulty. Concertos by Haydn, Vidal, Williams, Brandt, Delcroix; Sonatas by Hindemith and Tuthill. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Trumpet 101-102. *2 + 2 h. c.*

203-204. See Trumpet 201-202. *2 + 2 h. c.*

303-304. See Trumpet 301-302. *2 + 2 h. c.*

403-404. See Trumpet 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Introduction to problems of brass instrument playing, stressing formation of embouchure, attack and release, breath control, tone quality, flexibility, legato and staccato articulation. Elementary exercises showing these skills in the Edwards-Hovey *Method*, Arban's *Method*, or equivalent studies. Introduction to scales. Selected cantabile solos. Open to students without previous training. *1 + 1 h. c.*

205-206. Continued stress on fundamentals of grade I with extension of range. Scale studies to include all major and minor keys. Selected cantabile solos. Material stressing these skills in World's *Method for Cornet*, Hering's *Studies*, or equivalent. *1 + 1 h. c.*

305-306. Extension of range, using scale studies in major and minor keys and broken chords. Flexibility studies as in Schlossberg's *Daily Drills*. Additional progress in World's *Method for Cornet*, Hering's *Studies*, or equivalent studies. Selected cantabile solos. *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

French Horn

100. For those who do not qualify for French Horn 101 and 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Development of the fundamental skills, such as tone production, embouchure, breath control, and legato and staccato articulations, using Franz, Kopprasch, Alphonse, Michiels. Major and minor scales and chords; transposition, sight-reading. Cantabile solos, and other solos of grade III difficulty. *3 + 3 h. c.*

201-202. Studies by Franz, Kopprasch, Alphonse, Pottag. Slurs, scales, chords, intervals, legato and staccato articulations in major and minor keys. Transposition and sight-reading. Cantabile solos, and other grade III and IV solos. *3 + 3 h. c.*

301-302. Continuation of technical studies, using Alphonse, Pottag Gallay. Transposition and sight-reading. Solos of grade IV difficulty. *3 + 3 h. c.*

401-402. Advanced studies, including studies by Pottag, Gallay, Alphonse. Transposition and sight-reading. Grade V and VI solos. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See French Horn 101-102. *2 + 2 h. c.*

203-204. See French Horn 201-202. *2 + 2 h. c.*

303-304. See French Horn 301-302. *2 + 2 h. c.*

403-404. See French Horn 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Special studies for development of embouchure, breath control, articulation, flexibility, tone control. Pottag-Hovey, *Method for French Horn;* Horner, *Primary Studies.* Introduction to scales. Selected cantabile solos. *1 + 1 h. c.*

205-206. Horner, *Studies.* Continued stress upon fundamentals of grade I. Scale studies in major and minor keys. Extension of range. Selected cantabile solos. *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for French Horn 101-102. *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

Trombone

100. To be elected by those who do not qualify for Trombone 101 or 103. This course may be repeated. *1 h. c.*

Major Courses

101-102. The development of a daily practice routine to enable the individual to acquire the fundamental skills, such as tone production, embouchure, breath control, flexibility, and legato and staccato articulations. Major and minor scales and chords; introduction to transposition; sight-reading. Materials include Mueller, Rochut, Dieppo, Mantia. Cantabile solos, and other solos of grade III and IV difficulty. *3 + 3 h. c.*

201-202. Continuation of basic technical studies. Slurs, scales, chords, intervals; single, double, and triple articulations in major and minor keys, transposition, and sight-reading, using Mueller, Rochut, Dieppo, Mantia. Cantabile solos, and other grade III and IV solos. *3 + 3 h. c.*

301-302. Studies from Mueller, Rochut, Blume, Kopprasch. Transposition and sight-reading. Grade IV and V solos. *3 + 3 h. c.*

401-402. Advanced studies by Mueller, Voboran, Rochut, Blazevitch. Transposition and sight-reading. Solos of grade V and VI difficulty. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104.	See Trombone 101-102.	*2 + 2 h. c.*
203-204.	See Trombone 201-202.	*2 + 2 h. c.*
303-304.	See Trombone 301-302.	*2 + 2 h. c.*
403-404.	See Trombone 401-402.	*2 + 2 h. c.*

Minor Courses

105-106. Studies to develop embouchure, attack, release, breath control, tone quality, flexibility, knowledge of positions. Studies by Cimera-Hovey, Endressen. Selected cantabile solos. *1 + 1 h. c.*

205-206. Continuation of development of skills stressed in grade I. Scale studies, stressing legato and staccato articulation. Extension of range. Studies by Mueller, Cimera. Study of cantabile solos for development of legato-cantabile style. *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Trombone 101-102. *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

Tuba

100. For those who do not qualify for Tuba 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. The development of the fundamental skills, such as tone production, embouchure, breath control, flexibility, and legato and staccato articulations. Major and minor scales and chords. Sight-reading. Material includes studies by Bell, Eby, Arban. Cantabile solos, and other solos of grade III difficulty. *3 + 3 h. c.*

201-202. Studies by Arban, Eby, Blazevitch. Slurs, scales, chords, intervals, and legato and staccato articulations in major and minor keys. Sight-reading. Study of orchestral and band works. Cantabile solos, and other solos of grade III and IV difficulty. *3 + 3 h. c.*

301-302. Continuation of technical studies, material by Arban, Eby, Blazevitch. Sight-reading. Study of orchestral and band works. Solos of grade IV and V difficulty. *3 + 3 h. c.*

401-402. Continuation of technical studies. Study of band and orchestral works. Sight-reading. Solos of grade V and VI difficulty. Senior recital. *3 + 3 h. c.*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104.	See Tuba 101-102.	*2 + 2 h. c.*
203-204.	See Tuba 201-202.	*2 + 2 h. c.*
303-304.	See Tuba 301-302.	*2 + 2 h. c.*
403-404.	See Tuba 401-402.	*2 + 2 h. c.*

Minor Courses

105-106. Introduction to fundamental skills, such as tone production, development of embouchure, attack and release, breath control, tone quality, flexibility. Introduction to scales. Studies by Eby, Arban, Bell. Cantabile solos. *1 + 1 h. c.*

205-206. Continuation of development of skills stressed in grade I. Scale and chord studies. Extension of range. Studies by Eby, Arban, Bell. Cantabile solos. *1 + 1 h. c.*

305-306. Studies and solos of the level indicated for Tuba 101-102. *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

Percussion

100. To be elected by those who do not qualify for Percussion 101 or 103. The course may be repeated. *1 h. c.*

Major Courses

101-102. Snare drum: review and/or complete twenty-six rudiments. Stone, *Stick Control;* Wilcoxon, *Modern Methods.* Studies for independence of hands. Gardner, *Progressive Studies,* Book III; Moeller, *Rudimental Drumming.* Relaxation. Bass drum, cymbals, and accessories. —Mallet instruments, including bells, xylophone, marimbas, and vibraharp: malleting, roll, scales, arpeggios. Peterson, *Rubank Elementary Method;* graded violin, saxophone, and clarinet exercises. *3 + 3 h. c.*

201-202. Snare drum: Moeller, *Rudimental Solos;* Wilcoxon, *Rudimental Swing.* Foot studies for bass drum. Gardner, *Post-graduate Studies;* Rale and Morales, *Latin-American and Afro-Cuban Rhythms.* —Mallet instruments: keyboard harmony, phrasing, expression; solos and excerpts from standard compositions; Peterson, *Three- and Four-mallet Playing.* —Tympani: position, mechanics, attack, single strokes, tuning; ear-training exercises; Gardner, Sietz, and Cross methods. *3 + 3 h. c.*

301-302. Snare drum: Moeller, Wilcoxon, and Bellson methods. —Mallet instruments: solos for two, three, and four mallets. —Tympani: advanced studies; technical problems, cross-sticking, fast tone changes. Excerpts from classic and modern compositions. Use of pedal, pedal effects, glissandi. Gardner, Sietz, Cross, and Zettleman methods. *3 + 3 h. c.*

401-402. Snare drum: hand and foot independence studies; rudimental solos. —Mallet instruments: Musser transcriptions of Chopin; Musser, *Masterworks for Vibraharp.* Modern solos by Norvo and others. —Tympani: modern arrangements, concertos, and solos by Stock, Berlioz, Stiegler, and others. Recital. *3 + 3 h. c*

Major Courses for Music Education

The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required.

103-104. See Percussion 101-102. *2 + 2 h. c.*

203-204. See Percussion 201-202. *2 + 2 h. c.*

303-304. See Percussion 301-302. *2 + 2 h. c.*

403-404. See Percussion 401-402. *2 + 2 h. c.*

Minor Courses

105-106. Snare drum: position, mechanics of playing, muscular action, method of attack, relaxation. Rudiments, including single-stroke roll.

double-stroke roll, five-, seven-, and nine-stroke rolls, flams, three- and four-stroke ruffs. Primary exercises. Harr, Books I and II. Gardner, *Progressive Studies*, Book I. *1 + 1 h. c.*

205-206. Snare drum: rudiments, including flam taps, flam accents, flamacues, single, double, and triple paradiddles, half-drags, single drags. Exercises. Harr, Book II. Gardner, *Progressive Studies*, Book II. *1 + 1 h. c.*

305-306. Snare drum: Stone, *Stick Control;* Wilcoxon, *Modern Methods;* Gardner, *Progressive Studies*, Book III. —Mallet-played instruments (bells, xylophone, marimba, vibraharp): malleting, roll scales, arpeggios. Exercises; Peterson, *Rubank Elementary Method.* Graded violin saxophone, and clarinet exercises. *1 + 1 h. c.*

405-406. Continued on a more advanced level. For those who can qualify. *1 + 1 h. c.*

Theory and Composition

103-104. *Theory I.* A unified course of study consisting of ear-training, sight-singing, and keyboard and written harmony, using simple chord construction. Formal and harmonic analysis of simple compositions. Meets five hours a week. *4 + 4 h. c.*

203-204. *Theory II.* The study of more complex chord construction, modulations, and analysis of compositions in smaller forms. Ear-training, sight-singing, keyboard harmony correlated with theory training. Meets five hours a week. Prereq.: Music 103-104 with grade of C or better. *4 + 4 h. c.*

113-114. *Composition A.*
213-214. *Composition B.*
313-314. *Composition C.*
413-414. *Composition D.*

Organized on a progressive basis, beginning with exercises in the creative use of the materials of music leading directly into free composition for a variety of media. Extensive analysis of the music of recognized masters. By the end of the fourth year, the student will have composed songs; works for solo instruments, singly and in combination; choral music; and a large-scale composition, such as a string quartet or a sonata for piano and other instrument. Selections from the student's works performed in a recital of at least an hour's duration. Prereq. or concurrent: Music 103-104, 203-204. *2 h. c. each*

317. *Analytical Techniques.* Analysis of homophonic and polyphonic compositions. Prereq.: Music 303-304. *2 h. c.*

353. *Counterpoint I.* Study of the medieval modes; harmonic, melodic, rhythmic, and contrapuntal aspects of the sixteenth century vocal polyphony. One recitation a week is devoted to sight-singing and ear-training in the style of the period, with special emphasis on the works of Palestrina and Lassus. *2 h. c.*

354. *Counterpoint II.* Study of the eighteenth century contrapuntal technique. Analysis of the works of Bach, culminating in composition of two- and three-part inventions by the student. Class meets three times a week. *2 h. c.*

407. *Orchestration.* A study of the instruments of the modern orchestra, their tone color individually and in combination. Writing and arranging for them singly, in groups, and in full score. *2 h. c.*

408. *Band Arranging.* Same as Music 407 except that this course is concerned with the symphonic band. Prereq.: Music 407. *2 h. c.*

421-422. *Composition I.* Composition in two and three-part forms and other compositions of small scope, such as variation and sonatina. Works will be composed for piano alone, and in combination with other instruments or voice. *2 + 2 h. c.*

429. *Canon and Fugue.* Double counterpoint: instrumental and vocal canon. Analysis of the fugues in Bach's *Well-Tempered Clavichord.* Writing of two-, three-, or four-part fugues. Students majoring in composition are required to complete a fugue in at least five sections, showing the customary contrapuntal devices. Prereq.: Music 354. *2 h. c.*

430. *Modern Harmony.* A study of harmonic trends in modern music, including polytonality, atonality, and other techniques. Prereq.: senior standing, with major in music. *2 h. c.*

431-432. *Composition II.* Writing in larger forms, such as sonata-allegro and rondo. *2 + 2 h. c.*

451-452. *Advanced Sight-Singing and Ear-Training.* Advanced training of student's sense of pitch, rhythm, and tonal memory. Harmonic, melodic, and rhythmic dictation; music reading. Extensive work in difficult tonal and rhythmic patterns. Four class sessions a week. Prereq.: Music 103-104, 203-204. *2 + 2 h. c.*

Music History and Literature

309, 310. *History and Appreciation of Art and Music: General.* Identical with Art 309, 310. *3 + 3 h. c.*

340. *Piano Literature.* The study and interpretation of the standard piano literature from a training as well as a performance viewpoint. Representative literature from the earliest keyboard works to the most recent publications are included. *2 h. c.*

370. *Eighteenth Century and the Viennese Classical School.* Musical developments from the decline of the Baroque to the turn of the century; stylist elements contributing to the rise of classicism and culminating in the works of Mozart and Haydn. Prereq.: Music 245-246. *2 h. c.*

371. *Baroque Music.* Trends in musical thought and stylistic developments during the period 1600-1750. A survey of the literature of the time: opera from Monteverdi to Handel; keyboard and instrumental works; significant choral and orchestral works, etc. Prereq.: Music 245-246. *2 h. c.*

372. *Contemporary Music.* Study of musical conditions existing at the end of the nineteenth century: new aesthetics, impressionism, expressionism, neo-classicism, etc., and the musical techniques associated with them. Principal composers of the twentieth century including Bartok, Stravinsky, Milhaud, Prokofieff, Wm. Schumann, and others, and a selected list of their chief masterworks are studied. Prereq.: Music 245-246. *2 h. c.*

373. *Wagner and the Music Drama.* Life and works of Richard Wagner, with emphasis on his significant influence upon the lyric theater. Representative works are studied intensively. Prereq.: Music 245-246. *2 h. c.*

374. *Beethoven and His Influence in the Musical World.* The life of Beethoven and the society which produced him; his personal growth as reflected in the stylistic changes in his music. Intensive study of representative symphonies, sonatas, and chamber music from each of the stylistic periods. Prereq.: Music 245-246. *2 h. c.*

380, 381. *Music History and Literature.* A study of music from earliest times to the present with special reference to the relation of the history of music to that of the other arts and to the political and religious history of the corresponding period. The orientation of musical literature to the periods in which it was written and the style of individual composers are also stressed. *3 + 3 h. c.*

427-428. *Symphonic Literature.* The historical development of the symphony from its beginning to the present. Symphonic poems, suites, overtures, and miscellaneous compositions for the modern orchestra. *2 + 2 h. c.*

469. *Organ Literature and Service Playing.* A study of the representative literature of the organ, with an emphasis on the service playing of hymns, anthems, and solos. The fundamentals of improvisation, modulation, and transposition. *2 h. c.*

479. *Vocal Literature.* A study of vocal literature from all periods. Special emphasis on English language repertoire and on material especially suitable for high school students. Songs are prepared for performance in class. Three classes a week. *2 h. c.*

Sacred Music

361. *Hymnology.* The history of the hymn and hymn tune; types of hymns and their uses; analysis and interpretation of hymns; evaluation of standard hymnals. *2 h. c.*

362. *Gregorian Chant.* The practical and artistic aspects of Gregorian chant in general choir work, the fundamentals of Gregorian rhythm, and authentic and plagal modes and notation. *2 h. c.*

363. *Junior and Senior Choir Methods.* Organization, methods, child psychology, the child voice, and materials suitable for choirs; the organization and motivation of the volunteer choir; achieving balance, blend, intonation; interpretation of choral literature, program building, and methods; psychology in rehearsal. *3 h. c.*

461. *History of Sacred Music.* The development of great religious music from earliest times to the present, with a study of the Jewish and Christian liturgies and their music, and the Church Year. *2 h. c.*

463. *Choral Literature.* The study and interpretation of the standard oratorios, with emphasis on solos, choruses, and accompaniment. A practical course for the singer, organist, and choirmaster. Representative oratorios covered are from the Baroque, Classic, Romantic, and Modern periods. *3 h. c.*

Conducting

319. *Vocal Conducting Methods Ensemble.* A course in vocal conducting techniques and ensemble methods. Students make up the ensmble, thereby providing a live situation. Ample opportunity for practice in conducting is provided. Materials suitable for use in secondary schools are used and discussed. Three class sessions a week. *1 or 2 h. c.*

320. *Instrumental Conducting Methods Ensemble.* A course in instrumental conducting techniques and ensemble methods. Students perform on minor instruments, thereby providing an ensemble with ample opportunity for practice in conducting. Materials suitable for secondary schools are used and discussed. Three class sessions a week. Prereq.: Music 319. *1 or 2 h. c.*

437. *Advanced Choral Conducting.* Advanced conducting technique as it applies to choral groups; rehearsal practices; choral techniques; special choral problems. Effort is made to enlarge the student's expressive resources as a conductor, and to develop his ability to discover the implications of the score. Three class sessions a week. Practical work with chorus. Sacred music majors take special work in sacred literature for extra credit. Prereq.: Music 320. *2 h. c.*

443. *Advanced Instrumental Conducting.* Advanced baton technique and rehearsal techniques for instrumental ensembles. Score-reading, direction of bands and orchestras. Three class sessions a week. Prereq.: Music 320. *2 h. c*

Music Education

121. *Introduction to Music, For Elementary Teachers.* Fundamental knowledge of the problems of notation and development of skill in sight singing and ear-training. *2 h. c.*

218. *Percussion Methods.* Like Music 225-226, but for percussion instruments. Two hours a week. 1 *h. c.*

221. *Music Literature and Appreciation, For Elementary Teachers.* A general orientation course to meet the needs of the classroom teacher and the average music lover, with emphasis on the human values of music and its relationship to art, literature, geography, history, and other curricular interests. Prereq.: Music 121. 2 *h. c.*

225-226. *Woodwind Methods.* Each student selects a woodwind instrument, which he learns to play as well as possible during the time allotted. As soon as enough progress has been made in playing the instrument chosen, other instruments of the woodwind group may be selected and studied. The problems underlying the teaching of these instruments are kept constantly before the class. Meets two hours a week. 1 + 1 *h. c.*

227-228. *Brass Methods.* Like Music 225-226, but for brass instruments. Meets two hours a week. 1 + 1 *h. c.*

229-230. *String Methods.* Like Music 225-226, but for string instruments. Meets two hours a week. 1 + 1 *h. c.*

235-236. *Diction (Phonetics).* A course designed to assist singers in diction problems in English and foreign language song literature. The course makes use of the International Phonetic Alphabet, and begins with problems in English diction, carrying over basic principles to the study of Italian, German, and French diction. Three class sessions a week. 2 + 2 *h. c.*

321. *Music Education for Elementary Teachers.* A study of the child voice and its care. Rote songs, materials for rhythmic expression and listening, and the teaching skills and methods which the classroom teacher needs in order to work effectively under supervision. Prereq.: Music 221. 2 *h. c.*

418. *Problems of Music Teaching.* Methods of organizing and conducting instrumental and vocal classes, bands, orchestras, and choruses in the public schools. Special areas and devices unique to music teaching are surveyed in detail. 2 *h. c.*

423. *Music Methods for the First Six Grades.* Principles and procedures for teaching children music in the elementary school. Examination and use of texts and other grade school materials. Demonstration and practice in conducting singing, listening and creative activities: rote songs, rhythms, reading activities, instruments for the classroom. Class meets three times a week. 2 *h. c.*

439. *Marching Band Techniques.* Organizing and conducting the marching band. Gridiron charting and marching procedures with a study of precision drill, formations, and pageantry; instrumentation and arranging for field playing. 2 *h. c.*

449. *Piano Pedagogy.* The methods, materials, and special problems involved in the teaching of piano. 2 *h. c.*

Curriculums

Curriculums for the Degree of Bachelor of Music with Major in Instrument, Voice, Theory and Composition, or Sacred Music

Designed for the student primarily interested in performance and/or in teaching (other than in public schools). Piano, if not the major, is desirable as the minor. This curriculum totals 135 hours.

Instrument Major

First Year	Hrs.
Applied major 101-102	6
Applied minor 105-106	2
Mus. 103-104 Theory I	8
Ensembles	2
Comm. 105-106 Basic Course I & II	6
Soc. Sci. 101 & 102 Introduciton to the Social Sciences I & II	6
H. E. & P. E. 109 M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Applied major 201-202	6
Applied minor 205-206	2
Mus. 203-204 Theory II	8
Mus. 380, 381 Music History and Literature	6
Ensembles	2
Comm. 107 Basic Course III	3
Physics 101 Fundamentals of Physics	3
Physics 208 Sound	3
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	37

Third Year	Hrs.
Applied major 301-302	6
Applied minor 305-306	2
Mus. 317 Analytical Techniques	2
Mus. 319 Vocal Conducting Methods Ensemble	2
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 340 Piano Literature, or 479 Vocal Literature	2
Mus. 353, 354 Counterpoint I & II	4
Mus. 451-452 Sight Singing and Ear-Training	4
Ensembles	2
Music elective	2
Hist. 201, 202, The United States	6
	34

Fourth Year	Hrs.
Applied major 401-402	6
Applied minor 405-406	2
Mus. 443 Advanced Instrumental Conducting	2
Mus. 407 Orchestration	2
Mus. 408 Band Arranging	2
Mus. 421-422 Composition I	4
Music History and Literature elective or Mus. 427-428 Symphonic Literature	4
Ensembles	2
Philosophy and Religion elective, or Hum. 401 or 402	3
Electives	5
Recital	NC
	32

In the case of piano and organ majors the above program will be slightly different in the final two years. Piano and organ majors will not be required to take Music 319, 320 for full credit. They will enroll for the conducting portions only and receive one credit each semester. The balance (4 credits) will be devoted to a music elective. It may be applied in separate years to piano or applied instruments.

In the senior year Music 437, Advanced Choral Conducting, may be substituted for Music 443, Advanced Instrumental Conducting. Piano and organ majors will not be required to take Band Arranging. The total number of hours for the piano or organ major is 132.

Voice Major

Designed for the student primarily interested in performance and/or in teaching (other than in public schools). Piano is required as the minor.

Entrance Requirements: To enter the four year degree course in voice, the student should be able to sing standard songs and the simpler classics in good English on pitch with correct phrasing and musical intelligence. He should also demonstrate his ability to read a simple song at sight and a knowledge of the rudiments of music. Some knowledge of piano is required.

This curriculum lists 18 hours in foreign languages. Actually 12 hours are sufficient if the student has two units of high school French, German, or Italian (both units in the same language). If he does not, he takes all 18 hours in the University. Otherwise he may substitute 6 hours of electives, as recommended by his adviser.

First Year	Hrs.
Applied major 101-102	6
Applied minor 105-106	2
Mus. 103-104 Theory I	8
Ensembles	2
Comm. 105-106 Basic Course I & II	6
*Italian 101-102 Elementary Italian	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Applied major 201-202	6
Applied minor 205-206	2
Mus. 203-204 Theory II	8
Ensembles	2
Comm. 107 Basic Course III	3
*French 101-102 Elementary French	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
Physics 101 Fundamentals of Physics	3
	36

Third Year	Hrs.
Applied major 301-302	6
Applied minor 305-306	2
Mus. 319 Vocal Conducting Methods Ensemble	2
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 380, 381 Music History and Literature	6
Ensembles	2
*German 101-102 Elementary German	6
Hist. 201 & 202 The United States	6
Physics 208 Sound	3
H. E. & P. E. activity courses	1
	36

Fourth Year	Hrs.
Applied major 401-402	6
Applied minor 405-406	2
Mus. 317 Analytical Techniques	2
Mus. 353, 354 Counterpoint I & II	4
Mus. 437 Advanced Choral Conducting	2
Mus. 451-452 Sight Singing and Ear-Training	4
Ensembles	2
Music History and Literature elective	4
Philosophy and Religion elective, or Hum. 401 or 402	3
Psych. 201 General Psychology	3
Recital	NC
	32

*May be omitted if the student has two high school units in the language. See **Proficiency in a Foreign Language**, in the College of Arts and Sciences section.

Theory and Composition Major

The theory and composition curriculum totals 133 semester hours.

First Year	Hrs.
*Applied major	4
Voice (for piano majors)	2
Minor: Strings	2
Mus. 103-104 Theory I	8
Mus. 113-114 Composition A	4
Ensembles	1
Comm. 105-106 Basic Course I-II	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I and II	6
Orientation 100	1
	34

Second Year	Hrs.
Applied major	4
Minor: Woodwinds	2
Mus. 203-204 Theory II	8
Mus. 213-214 Composition B	4
Mus. 380, 381 Music History and Literature	6
Ensembles	1
Comm. 107 Basic Course III	3
Physics 101 Fundamentals of Physics	3
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
	34

Third Year	Hrs.
Applied major	4
Minor: Brass	2
Mus. 313-314 Composition C	4
**Mus. 319 Vocal Conducting Methods Ensemble	2
**Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 353, 354 Counterpoint I & II	4
Mus. 451-452 Sight Singing and Ear-Training	4
Ensembles	1
Hist. 201 & 202 The United States	6
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	33

Fourth Year	Hrs.
Applied major	4
Minor: Percussion	1
Mus. 317 Analytical Techniques	2
Mus. 437 Advanced Choral Conducting	2
Mus. 443 Advanced Instrumental Conducting	2
Mus. 407 Orchestration and 408 Band Arranging	4
Mus. 413-414 Composition D	4
Music History and Literature elective or Mus. 427-428 Symphonic Literature	4
Mus. 429 Canon and Fugue	2
Ensembles	1
Philosophy and Religion elective, or Hum. 401 or 402	3
Physics 208 Sound	3
Recital	NC
	32

*If the student's major instrument is not piano, he must take two semester hours of piano each year. If the student's major is not voice, he must substitute voice for the minor requirement in his applied major field.

**At the student's option, the course may be taken for less than full credit. He may enroll for the conducting portions only and receive one credit each semester. The balance (four credits) will be devoted to music electives.

Sacred Music Major

Designed for the voice or organ major wishing to specialize in sacred music with a view to becoming a minister of music and/or preparing for advanced study and specialization at the graduate level. This curriculum totals 139 hours.

First Year	Hrs.
Major: Organ or Voice 101-102	6
Minor: Organ, Piano, or Voice 105-106	2
Mus. 103-104 Theory I	8
Ensembles	2
Comm. 105-106 Basic Course I & II	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences 1 & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Major: Organ or Voice 201-202	6
Minor: Organ, Piano, or Voice 205-206	2
Mus. 203-204 Theory II	8
Mus. 380, 381 Music History and Literature	6
Ensembles	2
Comm. 107 Basic Course III	3
Physics 101 Fundamentals of Physics	3
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	34

Third Year	Hrs.
Major: Organ or Voice 301-302	6
Minor: Organ, Piano, or Voice 305-306	2
Mus. 319 Vocal Conducting Methods Ensemble	2
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 353, 354 Counterpoint I & II	4
Mus. 361 Hymnology	2
Mus. 362 Gregorian Chant	2
Mus. 363-364 Junior and Senior Choir Methods	3
Mus. 451-452 Sight Singing and Ear-Training	4
Ensembles	1
Hist. 201 & 202 The United States	6
	34

Fourth Year	Hrs.
Major: Organ or Voice 401-402	6
Minor: Organ, Piano, or Voice 405-406	2
Mus. 317 Analytical Techniques	2
Mus. 429 Canon and Fugue	2
Mus. 437 Advanced Choral Conducting	2
Mus. 461 History of Sacred Music	2
Mus. 463 Choral Literature	3
Ensembles	1
Philosophy and Religion electives or Hum. 401 or 402	6
Physics 208 Sound	3
*Elective	4
Recital	NC
	33

*Music 465 required of organ majors.

Music Education Major: Instrumental, Vocal, Piano, or Organ

The following curriculums meet the requirements for the special provisional teaching certificate in Ohio. They total 138 hours. The certification requirements of the various states differ greatly, and if a student wishes to be certified in another state, it is his responsibility to fulfill the requirements of that state in his choice of courses. Courses satisfying such requirements usually give credit toward the degree, but some additional courses may be found necessary.

Every student majoring in music education may complete one applied-music major of 16 semester hours (courses 103-104, 203-204, 303-304, and 403-404 in any one instrument or in voice).

The applied-music minor courses must total eight semester hours: four hours in functional piano, and one hour in each of the following: clarinet, trumpet, violin, cello, percussion, and voice. These requirements may be altered if the student has already achieved proficiency in any of these areas. A minor will not be required in the student's major area (*e.g.*, the clarinet major will not need a woodwind minor).

Curriculum for the Degree of Bachelor of Music with the Major in Music Education: Instrumental

First Year	Hrs.
Applied major 103-104	4
Applied minor	3
Mus. 103-104 Theory I	8
Mus. 225-226 Woodwind Methods	2
Ensembles	4
Comm. 105-106 Basic Course I-II	6
Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	37

Second Year	Hrs.
Applied major 203-204	4
Applied minor	3
Mus. 203-204 Theory II	8
Mus. 229-230 String Methods	2
Mus. 380, 381 Music History and Literature	6
Ensembles	4
Comm. 107 Basic Course III	3
Educ. 101 Introduction to Education	2
Psych. 201 General Psychology	3
H. E. & P. E. activity courses	1
	36

Third Year	Hrs.
Applied major 303-304	4
Applied minor	2
Mus. 319 Vocal Conducting Methods Ensemble	3
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 227-228 Brass Methods	2
Mus. 423 Music Methods in the First Six Grades	2
Music Theory and Composition elective	4
Vocal minor	1
Ensembles	2
Educ. 304 Student Teaching Laboratory: High School & Special Field	4
Educ. 306 Principles of Teaching	3
Psych. 202 Educational Psychology	3
Science elective	3
	35

Fourth Year	Hrs.
Applied major 403-404	4
Applied minor	2
Mus. 443 Advanced Instrumental Conducting	2
Music History and Literature elective	2
Ensembles	2
Educ. 308 Educational Sociology	3
Educ. 404 Supervised Student Teaching: High School	4
Hist. 201, 202 The United States	6
Physics 208 Sound	3
Philosophy and Religion elective, or Hum. 401 or 402	3
Recital	NC
	31

Curriculum for the Degree of Bachelor of Music with the Major in Music Education: Voice

First Year	Hrs.
Applied major 103-104	4
Applied minor	2
Mus. 103-104 Theory I	8
Mus. 225-226 Woodwind Methods	2
Ensembles	2
Soc. Sci. 101, 102 Introduction to the Social Sciences I & II	6
Comm. 105-106 Basic Ciurse I-II	6
H. E. & P. E. 109M or 109W. Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Applied major 203-204	4
Applied minor	3
Mus. 203-204 Theory II	8
Mus. 229-230 String Methods	2
Mus. 235-236 Diction (Phonetics)	4
Ensembles	2
Comm. 107 Basic Course III	3
Educ. 101 Introduction to Education	2
Psych. 201 General Psychology	3
Psych. 202 Educational Psychology	3
H. E. & P. E. activity courses	1
	33

Third Year	Hrs.
Applied Music 303-304	4
Mus. 227-228 Brass Methods	2
Mus. 319 Vocal Conducting Methods Ensemble	2
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 380, 381 Music History & Literature	6
Music Theory and Composition elective	4
Ensembles	4
Educ. 304 Student Teaching Laboratory: High School & Special Field	4
Educ. 306 Principles of Teaching	3
Hist. 201, 202 The United States	6
	37

Fourth Year	Hrs.
Applied major 403-404	4
Mus. 218 Percussion Methods	1
Mus. 418 Problems of Music Teaching	2
Mus. 423 Music Methods in the First Six Grades	2
Mus. 437 Advanced Choral Conducting	2
Mus. 479 Vocal Literature	2
Music History and Literature elective	2
Ensembles	2
Educ. 308 Educational Sociology	3
Educ. 404 Supervised Student Teaching: High School & Special Field	4
Physics 208 Sound	3
Science elective	3
Philosophy and Religion elective, or Hum. 401 or 402	3
Recital	NC
	32

Curriculum for the Degree of Bachelor of Music with the Major in Music Education: Piano or Organ

First Year	Hrs.
Piano 103-104 or Organ 103-104	4
*Voice 105-106	2
**Piano 105-106	2
Mus. 103-104 Theory I	8
Mus. 225-226 Woodwind Methods	2
Ensembles	2
Soc. Sci. 101, 102 Introduction to the Social Sciences I & II	6
Comm. 105-106 Basic Course I & II	6
H. E. & P. E. 109M or 109W Health Education	2
H. E. & P. E. activity courses	1
Orientation 100	1
	34

Second Year	Hrs.
Piano 203-204 or Organ 203-204	4
*Voice 205-206	2
**Piano 205-206	2
Mus. 203-204 Theory II	8
Mus. 227-228 Brass Methods	2
Mus. 229-230 String Methods	2
Accompanying	1
Ensembles	2
Comm. 107 Basic Course III	3
Educ. 101 Introduction to Education	2
Psych. 201 General Psychology	3
Psych. 202 Educational Psychology	3
Science elective	3
H. E. & P. E. activity courses	1
	36

Third Year	Hrs.
Piano 303-304 or Organ 303-304	4
**Voice 105-106	2
Mus. 218 Percussion Methods	1
Mus. 319 Vocal Conducting Methods Ensemble	2
Mus. 320 Instrumental Conducting Methods Ensemble	2
Mus. 380, 381 Music History & Literature	6
Music Theory and Composition elective	4
Accompanying	1
Ensembles	2
Hist. 201, 202 The United States	6
Educ. 304 Student Teaching Laboratory: High School & Special Field	4
Educ. 306 Principles of Teaching	3
	35 or 37

Fourth Year	Hrs.
Piano or Organ 403-404	4
**Voice 205-206	2
Mus. 340 Piano Literature or 469 Organ Literature & Service Playing	2
Mus. 418 Problems of Music Teaching	2
Mus. 423 Music Methods in the First Six Grades	2
Mus. 437 Advanced Choral Conducting	2
Music History and Literature elective	2
*Music elective	3
**Music elective	2
Ensembles	2
Physics 208 Sound	3
Educ. 308 Educational Sociology	2
Educ. 404 Supervised Student Teaching: High School & Special Field	4
Philosophy and Religion elective, or Hum. 401 or 402	3
Recital	NC
	31 or 32

*For piano majors only.

**For organ majors only.

THE BOARD OF TRUSTEES

Officers

CHARLES G. WATSON, *Chairman*

WILLIAM B. POLLOCK II, *Vice-Chairman*

J. LESTER MAUTHE, *Vice-Chairman*

JOHN N. MCCANN, *Vice-Chairman*

HUGH W. MANCHESTER, *Secretary*

CARL W. ULLMAN, *Treasurer*

PERRY BEATTY, *Assistant Treasurer and Assistant Secretary*

Members

JAMES L. BEEGHLY
Secretary-Treasurer, The Economy Engine Company

WALTER BENDER
Retired

WILLIAM E. BLISS
Vice-President, The Standard Slag Company

WILLIAM J. BROWN
Vice-President and General Manager, *The Youngstown Vindicator*

JOSEPH G. BUTLER III
Director, The Butler Institute of American Art

THOMAS J. CARNEY
Chairman, Board of Mahoning County Commissioners

SIDNEY J. COLLINS
Clark and Collins, Certified Public Accountants

CHARLES B. CUSHWA, JR.
President, The Commercial Shearing and Stamping Company

ANTHONY B. FLASK
Mayor, City of Youngstown

OSCAR F. GAYTON
The Mutual Life Insurance Company of New York

JOHN H. GRAFT
Retired

A. S. GLOSSBRENNER
President, The Youngstown Sheet and Tube Company

THE REVEREND GLENN W. HOLDBROOK
Pastor, Cathedral of Saint Columba

ARTHUR L. JONES
Simonton, Jones and Company, Certified Public Accountants

MRS. W. H. KILCAWLEY

FRED B. KING, JR.
Fred B. King Sons Company

RICHARD L. KRABACH
State Director of Finance

WILLIAM F. MAAG, JR.
Editor and Publisher, *The Youngstown Vindicator*

J. LESTER MAUTHE
Chairman of the Board, Youngstown Sheet and Tube Company

JOHN N. MCCANN
Physician

J. RUSSELL MCKAY
President and Attorney, The Home Savings and Loan Company

THOMAS H. MURRAY
Member of the Board, The Heller-Murray Company

J. ROSS PHILIPS, JR.
District Manager, Republic Steel Corporation

WILLIAM B. POLLOCK II
President, The William B. Pollock Company

MRS. FRANK PURNELL

WILLIAM HAIG RAMAGE
Member of the Board, The Valley Mould and Iron Corporation

CARL C. RIGSBY
General Manager, Packard Electric Division, General Motors Corporation

HENRY A. ROEMER
Chairman of the Board, The Sharon Steel Corporation

WILLIAM J. SAMPSON, JR.
President, The American Welding and Manufacturing Company

LISLE A. SPENCER
The Equitable Life Assurance Society of the United States

CLARENCE J. STROUSS, JR.
The Northwestern Mutual Life Insurance Company

CARL W. ULLMAN
President, The Dollar Savings and Trust Company

AMBROSE J. WARDLE, JR.
President, The McKay Machine Company

CHARLES G. WATSON
Chairman of the Board, The Youngstown Welding and Engineering Company

RAYMOND J. WEAN
President, The Wean Engineering Company

JAMES L. WICK, JR.
Retired

LAURIN D. WOODWORTH
General Superintendent, Youngstown District, United States Steel Corporation

---

THE TRUSTEES OF THE RAYEN SCHOOL

JOHN W. FORD, *President*
Judge, Mahoning County Common Pleas Court

WILLIAM F. MAAG, JR.
Editor and Publisher, *The Youngstown Vindicator*

J. RUSSELL MCKAY
President and Attorney, The Home Savings and Loan Company

MRS. ALFRED E. REINMAN

RALPH P. WHITE, JR.
Secretary, Treasurer, and General Manager, R. P. White Drug Company

THE ADMINISTRATIVE STAFF

THE UNIVERSITY

HOWARD W. JONES, M. A., D. Ped., *President*

CHARLES H. AURAND, JR., Mus. M., *Assistant to the President*

JOSEPH E. SMITH, Ph. D., *Dean of the University*
Edna E. Pickard, *Secretary*

P. CALVIN PICKARD, A. B., *Business Manager*
Betty L. Boyer, A. B., *Secretary*

JOHN P. GILLESPIE, B. S. in B. A., *Dean of Men*
Edna E. Pickard, *Secretary*

EDITH P. PAINTER, Ed. D., *Dean of Women*
Gertrude Maley McCabe, *Secretary*

PHILIP P. BUCHANAN, M. Ed., *Registrar*

MARY B. SMITH, M. A., *Recorder*
Bernice M. Brownlee, B. S. in Ed., *Secretary*

FREDA R. FLINT, A. B., *Director of Public Relations*
Ruth R. Taylor, *Secretary*

GEORGE H. G. JONES, M. A., M. A . in L. S., *Librarian*

THE COLLEGE OF ARTS AND SCIENCES

KARL W. DYKEMA, A. M., *Dean*

KARL W. DYKEMA, A. M., *Director, Division of Language and Literature*

LEONARD T. RICHARDSON, D. Univ., *Chairman, Ancient Languages*
WARD L. MINER, Ph. D., *Chairman, English*
LEONARD T. RICHARDSON, D. Univ., *Chairman, Modern Languages*
RALPH DONALD ELSER, M. Litt., *Chairman, Speech and Dramatics*
KARL W. DYKEMA, A. M., *Supervisor, Communication*
KARL W. DYKEMA, A. M., *Supervisor, Humanities*

JOSEPH E. SMITH, Ph. D., *Director, Division of Social Sciences*

JOSEPH E. SMITH, Ph. D., *Chairman, Economics*
MICHAEL KLASOVSKY, M. A., *Chairman, Geography*
DAVID M. BEHEN, Ph. D., *Chairman, History*
JOSEPH E. SMITH, Ph. D., *Acting Chairman, Philosophy and Religion*
IVIS BOYER, M. A., *Chairman, Political Science*
WALTER E. MAYER, Ph. D., *Chairman, Psychology*
WILLIAM L. POWERS, LL. B., *Supervisor, Social Science*
PAULINE E. BOTTY, M. A., *Chairman, Sociology*

FRANK M. ELLIS, M. S., *Director, Division of Science and Mathematics*
WARREN M. YOUNG, M. S., *Supervisor, Astronomy*
CHARLES A. EVANS, Ph. D., *Chairman, Biology*
EUGENE D. SCUDDER, Ph. D., *Chairman, Chemistry*
MICHAEL KLASOVSKY, M. A., *Acting Supervisor, Geology*
FRANK M. ELLIS, M. S., *Acting Chairman, Physics*
FRANK J. MALAK, M. Litt., *Chairman, Mathematics*
NELLIE G. DEHNBOSTEL, M. A., *Supervisor, Natural Science*

WARD L. MINER, Ph. D., *Supervisor, American Studies*

JOHN M. NABEREZNY, M. A., *Chairman, Art*
WILLIAM B. CARSON, M. S. in Ed., *Chairman, Health Education and Physical Education*
BERTINA A. LABORDE, M. S., *Assistant Chairman, Health Education and Physical Education*
ILAJEAN FELDMILLER, M. S., *Chairman, Home Economics*
COL. JOHN E. WALES III, B. S. in E. E., *Chairman, Military Science*

THE SCHOOL OF BUSINESS ADMINISTRATION

ROBERT L. MILLER, M. B. A., *Dean*

ROBERT L. MILLER, M. B. A., *Chairman, Accounting*
WILLIAM S. FLAD, M. B. A., *Chairman, Advertising*
EDWARD T. REILLY, M. B. A., *Chairman, Business Organization*
MCKINLEY BROWNE, M. S., *Chairman, Merchandising*
ROBERT D. CRAIG, *Registrar and Head, Evening Division, Secretarial School*
MAE E. TURNER, M. S. in Ed., *Head, Day Division, Secretarial School*

THE SCHOOL OF EDUCATION

JOSEPH F. SWARTZ, Ph. D., *Dean*

JOSEPH F. SWARTZ, Ph. D., *Chairman, General Education*
MARVIN W. CHRISP, Ed. D., *Chairman, Elementary Education*
WILLIAM ALVON SHIPMAN, Ed. D., *Chairman, Secondary Education*
JOSEPH F. SWARTZ, Ph. D., *Chairman, Special Education*

THE WILLIAM RAYEN SCHOOL OF ENGINEERING

M. JEAN CHARIGNON, Ph. D., *Dean*

PAUL LUGINBILL, M. S., *Chairman, Chemical Engineering*
JOHN N. CERNICA, Ph. D., *Chairman, Civil Engineering*
RAYMOND E. KRAMER, M. S. in E. E., *Chairman, Electrical Engineering*
M. JEAN CHARIGNON, Ph. D., *Chairman, Industrial Engineering*
FRANK A. D'ISA, Ph. D., *Chairman, Mechanical Engineering*
EDWARD J. P. FISHER, B. S., *Chairman, Metallurgical Engineering*

THE DANA SCHOOL OF MUSIC

CHARLES H. AURAND, JR., Mus. M., *Dean*

DONALD WILLIAM BYO, M. Ed., *Assistant Dean*

SERVICES

COUNSELING AND GUIDANCE

THE REV. ALBERT LINDER, B. D., *Protestant Chaplain at Youngstown University*

THE REV. WILLIAM J. KENNEDY, *Roman Catholic Chaplain at Youngstown University*

THE REV. NICHOLAS VANSUCH, A. B., *Orthodox Catholic Chaplain at Youngstown University*

WILLIAM G. NELSON, Ph. D., *Veterans Education Officer*

MARY ANN P. DOBRICH, M. Ed., *Psychometrist*

HEALTH

JOHN N. MCCANN, M. D., *Director of Health*

LAVERNE D. REILLY, R. N., B. S., *Head Nurse*

PLACEMENT

ALFRED J. MINOTTI, B. S. in B. A., *Director of Placement*

ISABELLE MILLER, *Director of Teacher Placement*

ADMISSION COUNSELORS

PHILIP P. BUCHANAN, M. Ed.

JOHN P. GILLESPIE, B. S. in B. A.

WILLIAM J. GUTKNECHT, JR., A. B.

KENNETH L. SCHAFER, M. A.

COMPUTING CENTER

THOMAS D. Y. FOK, Ph. D., *Director*

TECHNICAL INSTITUTE

HAROLD R. CRITES, M. A., *Director*

CATALOG

THOMAS GAY, M. A., *Editor*

BUSINESS STAFF

WILLIAM G. NELSON, Ph. D., *Assistant Business Manager*

LILLIAN J. COLE, *Auditor*

M. ELIZABETH WILLIAMS, *Associate Auditor*

JUNE PRICE, *Cashier*

ELEANOR H. CARNEY, *Manager, Bookstore*

MILDRED E. BREEDING, *Supervisor, Main Office*

RICHARD G. WEBER, *Superintendent of Buildings and Grounds*

SAMUEL BLICK, *Associate Superintendent of Buildings and Grounds*

ATHLETICS

WILLARD L. WEBSTER, B. S., *Director*

COMMITTEES OF THE FACULTY
AND ADMINISTRATIVE STAFF

The chairman of a committee is the first member named. The President and the Dean of the University are *ex officio* members of each committee.

Academic Standards: Mr. Dykema, Mr. Behen, Mrs. Botty, Mrs. Bridgham, Mr. Campbell, Mr. D'Isa, Mr. Malak, Mrs. Painter, Mr. Reilly, Mr. J. E. Smith, Mr. Swartz, Mr. Van Zandt; Mr. Ellis, *ex officio.*

Athletics: Mr. Carson, Mr. Kramer, Mr. Pickard, Mr. S. I. Roberts, Mr. Scudder, Mr. J. E. Smith, Mr. Webster.

**Co-ordination and Calendar:* Mrs. Painter, Mr. Elser, Mr. Elson, Miss Flint; Mr. Gillespie, *ex officio*; three students.

Council on Education: Mr. Swartz, Mr. Aurand, Mr. Dykema, Mr. R. L. Miller, Mr. J. E. Smith.

Credits and Admission: Mr. Buchanan, Mr. Behen, Mr. D'Isa, Mr. Dykema, Mr. Gillespie, Mrs. Smith.

**Curriculum:* Mr. J. E. Smith, Mr. Aurand, Mr. Carson, Mr. Charignon, Mr. Cohen, Mrs. Dehnbostel, Mr. Evans, Mr. Miller, Mrs. Miner, Mrs. Painter, Mr. Powers, Mr. Scudder, Mr. Wilcox; two students.

Curriculum, Engineering School: Mr. Charignon, Mr. D'Isa, Mr. Ellis, Mr. Fisher, Mr. Kramer, Mr. Luginbill.

**Discipline:* Mr. J. E. Smith, Mrs. Braden, Mr. Gillespie, Mr. Naberezny, Mrs. Painter, Mr. S. I. Roberts; three students.

Executive: Mr. H. W. Jones, Mr. Aurand, Mr. Behen, Mr. Charignon, Mr. Cohen, Mr. Dillon, Mr. Dykema, Mr. Gillespie, Mr. G. Jones, Mr. Miller, Mrs. Painter, Mr. Pickard, Mr. Reilly, Mr. J. E. Smith, Mr. Scudder, Mr. Swartz, Mr. Wilcox, Mr. Yozwiak.

**Faculty-Student Relations:* Mr. J. E. Smith, Mrs. Dykema, Mr. Pickard; three students.

Gould Society: Mr. Scollon, Miss Boyer, Mr. Cohen, Mrs. ElSamman, Mrs. Goldstein, Mrs. Murphy, Mrs. Painter, Mr. Petrych, Miss Pfau, Mr. Ricksecker, Miss Sterenberg.

Health: Mrs. Reilly, Mrs. Browne, Mrs. Dehnbostel, Miss Feldmiller, Mrs. Smith, Mr. Webster, Mr. Yozwiak.

Library: Mr. Cohen, Mrs. Dehnbostel, Mr. Hahn, Mr. Ives, Miss Jenkins, Mr. Mayer, Mrs. Mills, Mr. Miner, Mr. Petrek, Mr. Richardson, Mr. Riley, Mr. Siman, Mr. Slavin.

Personnel: Mr. H. W. Jones, Mr. J. E. Smith, dean of the unit and chairman of the department concerned.

Pre-Medical and Pre-Dental Studies: Mr. Webster, Mrs. Botty, Mr. Evans, Mr. Scudder.

Proficiency in a Foreign Language: Mr. Dykema, Mr. G. Jones, Mr. Richardson.

**Publications:* Mr. J. E. Smith, Mr. Dykema, Mr. Nelson, Mr. Powers, Mr. S. I. Roberts; three students; advisers and editors of student publications, *ex officio.*

R. O. T. C.: Mr. J. E. Smith, Col. Wales, Mr. Clark, Mr. Ives, Mr. Skardon.

Scholarships: Mr. J. E. Smith, Mr. Buchanan, Mr. Gillespie, Mrs. Painter, Mr. Pickard, Mrs. Smith.

**Student-Faculty Assemblies:* Mrs. Painter, Mr. Cernica, Mr. Yozwiak; three students.

---

*Committees with student representation; student members are appointed by Student Council

THE WALTER E. AND CAROLINE H. WATSON FOUNDATION

DISTINGUISHED PROFESSORS

1959-1960

KARL H. BENKNER, *Mechanical Engineering*
KARL WASHBURN DYKEMA, *English*
JAY RODKEY, *Accounting*
GEORGE MILO WILCOX, *Education*

1960-1961

MARY WAGSTAFF JONES, *Communication*
MARGARITA MILLS, *Spanish*
EUGENE DODD SCUDDER, *Chemistry*
BERNARD JAMES YOZWIAK, *Mathematics*

1961-1962

GUS MAVRIGIAN, *Mathematics*
ALVIN MYEROVICH, *Music*
EDWARD THOMAS REILLY, *Business Organization*
CLAIR L. WORLEY, *Biology*

1962-1963

PAULINE ESTERHAY BOTTY, *Sociology*
FRANK ANGELO D'ISA, *Mechanical Engineering*
FRANCIS KRAVEC, *Biology*
WILLARD L. WEBSTER, *Biology*

1963-1964

DAVID MARION BEHEN, *History*
IRWIN COHEN, *Chemistry*
THADDEUS MICHAEL DILLON, *Mathematics*
GEORGE HENRY SCHOENHARD, *Education*

THE FACULTY†

HOWARD W. JONES, M. A., D. Ped. ..... *President*
A. B., Hiram College; M. A., Western Reserve University; D. Ped., Westminster College.

JOHN WINCHELL BARE, M. A. ..... *Professor Emeritus of Psychology*
B. A., M. A., Ohio Wesleyan University; M. Sc. Ed., University of Pittsburgh.

FRIEDA FRIEND CHAPMAN, M. A. ..... *Professor Emerita of Education*
B. S. in Ed., Ohio University; M. A., Ohio State University. Additional graduate study: Columbia University. Retired 1957.

JOHN DONALD COOK, Mus. D. ..... *Professor Emeritus of Music*
Mus. B., Mus. M., Mus. D., Dana's Musical Institute. Retired 1949.

CLARENCE PEMBROKE GOULD, Ph. D., LL. D. ..... *Professor Emeritus of History*
A. B., Ph. D., Johns Hopkins University; LL. D., Washington College. Retired 1957.

MORRIS JACOB ABRAMOVITZ, A.M. ..... *Education*
B. S. in Ed., LL. B., Youngstown University; A. M., Columbia University.

SISTER MARY MYLES ACKER, M. S. ..... *Chemistry*
B. A., Villa Maria College; M. S., University of Notre Dame.

JENNIE STRUDTHOFF ADAMS, Mus. B.* ..... *Music*
Mus. B., Youngstown University. Graduate study: Kent State University.

GERALD RICHARD ADLER, A. B. ..... *Art*
A. B., Youngstown University.

SHAFFIQ-UDDIN AHMED, Ph. D. ..... *Assistant Professor of Metallurgical Engineering*
B. E., University of Calcutta; M. S., University of Illinois; Ph. D., Case Institute of Technology.

ADOLF WILLIAM ALMGREN, Ph. D. ..... *Philosophy and Religion and Social Science*
A. B., Bowling Green State University; B. D., S. T. M., Oberlin College; Ph. D., Ohio State University.

ROBERT A. AMEDURI, M. S. ..... *Instructor in Natural Science and Physics*
B. S., Youngstown University; M. S. in Ed., Westminster College; M. S., Western Reserve University.

LEONARD T. APPLEMAN, M. Ed. ..... *Natural Science*
A. B., Newberry College; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh; Westminster College; Ohio State University.

DONALD RAYMOND ARNETT, B. E. ..... *Instructor in Mechanical Engineering*
B. E., Youngstown University. Graduate study: University of Pittsburgh.

ROBERT DEAN ARNOLD, S. T. M. ..... *Philosophy*
B. A., Kent State University; B. D., S. T. M., Oberlin College.

WILLIAM PAUL ARNOLD, M. Litt. ..... *Mathematics*
B. B. A., M. Litt., University of Pittsburgh.

WAYNE EDWARD AULT, B. S. in E. E. ..... *Electrical Engineering*
B. S. in E. E., B. S. in F. P. E., Illinois Institute of Technology. Graduate study: University of Pittsburgh.

CHARLES H. AURAND, JR., Mus. M. ..... *Professor of Music*
Mus. B., Mus. M., Michigan State University. Additional graduate study: Ohio State University.

J. LEONARD AZNEER, Ph. D. ..... *Philosophy and Religion*
B. A., Yeshiva University; M. H. L., Jewish Theological Seminary; Ph. D., University of Pittsburgh.

THEODORE BAAR, M. A. ..... *Instructor in Music*
B. S., Kent State University; M. A., Western Reserve University. Additional graduate study: Western Reserve University.

---

†Members not listed by rank ordinarily teach only one or two classes.
Graduate study beyond the highest degree is listed for institutions from which at least nine semester hours of credit have been earned.
*Died 1964.

JOSEPH BABISCH, B. S. in Ed. — *Assistant Professor of Education*
B. S. in Ed., University of New York; M. S. in Ed., Westminster College; M. A., Kent State University.

SAMUEL S. BADAL, JR., Mus. B. — *Instructor in Music*
Mus. B., Youngstown University.

RICHARD W. BAEHLER, M. S. in Ed. — *Education*
A. B., B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

HELEN I. BAILEY, M. S. in Ed. — *Education*
B. S. in Ed., Ohio University; M. S. in Ed., Westminster College.

MARIAN BAILEY, B. S. in Ed. — *Instructor in Health Education and Physical Education*
R. N., Brownsville General Hospital School of Nursing; B. S. in Ed., Youngstown University. Graduate stuay: Westminster College.

JAMES HOUSTON BAKER, M. A. — *Biology*
B. S., Kent State University; M. A., University of North Carolina.

JOHN H. BAKER, A. B. — *Communication*
A. B., Youngstown University.

WILLIAM CALVIN BAKER, M. A. — *Assistant Professor of English*
A. B., Mount Union College; M. A., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

CHARLES T. BALALIS, M. S. in Ed. — *Social Science*
A. B., Youngstown University; M. S. in Ed., Westminster College.

JOSEPH A. BALOG, B. S. in B. A. — *Merchandising*
B. S., in B. A., Youngstown University.

JOHN ALBERT BANNACH, B. B. A. — *Accounting*
B. B. A., Western Reserve University. Graduate study: Western Reserve University. C. P. A., State of Ohio.

MARY HELEN BARABAS, A. M. — *Biology*
B. S., University of Rochester; A. M., Columbia University.

JOHN WINCHELL BARE, M. A.* — *Instructor in Psychology*
B. A., M. A., Ohio Wesleyan University; M. Sc. Ed., University of Pittsburgh.

HARRY E. BARNARD, JR., B. S. in B. A. — *Instructor in Military Science*
B. S. in B. A., University of Arkansas. Captain, United States Army.

JOSEPH E. BAROLAK, M. S. — *Biology*
B. S. in Ed., Ohio University; M. Ed., University of Pittsburgh; M. S., Purdue University.

SISTER M. JULIANA BARRETT, M. A. — *Communication*
A. B., Ursuline College; M. A., Catholic University of America.

MABEL LARIMER BATHAM, B. S. in Ed. — *Education*
B. S. in Ed., Youngstown University. Graduate study: John Herron Art School; Fletcher Farm School of Crafts.

SISTER ST. ANNE BATMAN, M. A. — *Psychology*
B. S. E., St. John College; M. A., Catholic University of America.

ANNA MARGARET STUDEBAKER BATTIN, M. Ed. — *Instructor in Social Science*
B. A., Concord College; M. Ed., Kent State University.

GLORIA KARPINSKI BATTISTI, M. S. W. — *Sociology*
B. A., Notre Dame College; M. S. W., Loyola University.

RAYMOND JOHN BAUGHAN, Ed. M. — *Social Science and Communication*
B. S., B. D., St. Lawrence University; Ed. M., Boston University.

RICHARD GEORGE BAUMAN, LL. B. — *History*
LL. B., Ohio State University.

JOSEPHINE BECKETT, M. S. in Ed. — *Instructor in Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Bowling Green State University; Kent State University.

PAUL E. BECKMAN, JR., Ph. D. — *Assistant Professor of Psychology*
A. B., Youngstown University; M. A., Ohio State University; Ph. D., State University of Iowa.

DWIGHT VINCENT BEEDE, B. S. — *Associate Professor of Health Education and Physical Education*
B. S., Carnegie Institute of Technology.

*Retired June 1964.

GEORGE DANIEL BEELEN, M. A. — *History*
A. B., Youngstown University; M. A., Western Reserve University.

DAVID MARION BEHEN, Ph. D. — *Professor of History*
Ph. B., Ph. D., University of Chicago.

DOROTHY FORBIS BEHEN, Ph. D. — *History*
B. A., Texas Technological College; M. A., University of Texas; Ph. D., University of Chicago.

RICHARD CHARLES BELSAN, S. T. B. — *Philosophy and Religion, and Social Science*
A. B., Heidelberg College; S. T. B., Yale Divinity School.

J. RICHARD BENNETT, B.S. in Ed. — *Health Education and Physical Education*
B. S. in Ed., Kent State University.

RONALD M. BENSON, A. M. — *History*
A. B., Texas Technological College; A. M., State University of Iowa.

S. ANN BERICH, M. A. — *Geography, Social Science*
B. S. in Ed., M. A., Kent State University. Additional graduate study: University of Chicago.

THEODORE FREDERICK BERNDT, B. S. in Ed. — *Advertising*
B. S. in Ed., Youngstown University.

DONALD KENNETH BERQUIST, M. Acc. — *Instructor in Accounting*
B. S. in B. A., Youngstown University; M. Acc., Ohio State University.

MARIO S. BERTOLINI, M. A. — *Art*
B. S. in Ed., Youngstown University; M. A., State University of Iowa. Additional graduate study: Kent State University.

MARILYN ESTHER BILES, M. S. — *Instructor in Mathematics*
B. S., Youngstown University; M. S., University of Pittsburgh.

DONALD STEWART BISHOP, M. S. in Ed. — *Education*
A. B., Youngstown University; M. S. in Ed., Indiana University. Additional graduate study: Kent State University.

FREDERICK JUDD BLUE, M. S. — *Assistant Professor of History*
B. A., Yale University; M. S., University of Wisconsin. Additional graduate study: University of Wisconsin.

JOHN R. BOLAND, LL. B. — *Instructor in Business Organization and Social Science*
A. B., University of Michigan; LL. B., University of Pittsburgh.

DAVID BORN, D. C. L. — *Philosophy*
S. T. B., M. A. in Th., Gregorian University, Rome; D. C. L., Lateran University, Rome.

PAULINE ESTERHAY BOTTY, M. A. — *Associate Professor of Sociology*
B. S. in Ed., New York State Teachers College at Buffalo; LL. B., Youngstown University; M. A., Western Reserve University.

IVIS BOYER, M. A. — *Associate Professor of Political Science*
B. A., Cornell College; M. A., Western Reserve University. Additional graduate study: University of Pittsburgh.

MARY LOUISE BOYNTON, M. A. — *Communication*
A. B., Vassar College; M. A., New York University. Additional graduate study: Columbia University; Cornell University.

FRANK MELVIN BRADEN, M. A. — *Instructor in Advertising and Merchandising*
B. S. in B. A., Youngstown University; M. A., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

MARGARET ARCHER BRADEN, M. Ed. — *Assistant Professor of Education*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh. Additional graduate study: University of Wisconsin.

ALBERT EDWARD BRENNAN, LL. B. — *Instructor in Business Organization*
A. B., Youngstown University; M. S. in Ed., Westminster College; LL. B., Youngstown University.

WILLIAM J. BRENNAN, M. S. S. — *Sociology*
A. B., Holy Cross College; S. T. B., Gregorian University; M. S. S., Fordham University.

GEORGE W. BRICKLEY, M. A. — *Instructor in Merchandising*
A. B., Eastern Nazarene College; M. A., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

CATHERINE M. BRIDGHAM, Ph. D. — *Professor of Chemistry*
B. S., University of Michigan; Ph. D., University of Pittsburgh.

JUDITH ANN BRNCIC, B. S. in Ed. *Art*
B. S. in Ed., Youngstown University.

JOHN BRODERICK, B. S. in Ed. *Secretarial Studies*
B. S. in Ed., Youngstown University. Graduate study: Kent State University.

BARBARA ANN HOOVER BROTHERS, M. A. *Communication*
A. B., Youngstown University; M. A., Western Reserve University.

CHESTER A. BROWNE, B. E. *Mechanical Engineering*
B. E., Youngstown University.

MARION KING BROWNE, M. S. *Assistant Professor of Merchandising*
A. B., Eastern Michigan State College; M. S., New York University. Additional graduate study: New York University.

MCKINLEY BROWNE, M. S. *Assistant Professor of Merchandising*
B. S., Eastern Michigan State College; M. S., New York University. Additional graduate study: New York University.

PHILIP P. BUCHANAN, M. Ed. *Registrar with Rank of Assistant Professor*
A.B., Hiram College; M. Ed., University of Pittsburgh.

ROBERT F. BURKE, M. A. *Education*
A. B., Youngstown University; M. A., Ohio University.

JOHN THOMAS BURNS, M. A. *Psychology*
B. A., Ohio State University; M. A., Kent State University.

FELIX F. BUTTAR, M. Ret. *Instructor in Merchandising*
B. S. in B. A., Youngstown University; M. Ret., New York University. Additional graduate study: New York University.

DONALD WILLIAM BYO, M. Ed. *Assistant Professor of Music*
Mus. B., Youngstown University; M. Ed., Kent State University.

ALBERT CALDRONE *Music*
Pupil of D'Annessa, Catena, and Terry Carson. Leading clarinetist, Youngstown Philharmonic Orchestra; solo clarinetist, Packard Band.

RAYMOND ALFRED CALLAHAN, M. A. *Economics*
B. A., Baldwin-Wallace College; LL. B., Youngstown University; M. A., Kent State University.

MARK CAMPBELL, A. B. *Philosophy*
A. B., Youngstown University. Graduate study: St. Vladimir Orthodox Theological Seminary.

ROBERT A. CAMPBELL, Ph. D. *Associate Professor of Music*
B. Mus., Oberlin Conservatory of Music; M. Mus., Ph. D., University of Texas.

DORIS ELAINE CANNON, B. S. in Ed. *Biology*
B. S. in Ed., Ohio State University.

THOMAS F. CAREY, M. Ed. *Health Education and Physical Education*
B. S., Slippery Rock State College; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

BERNARD MICHAEL CARNEY. *Military Science*
Sergeant First Class, United States Army.

WILLIAM B. CARSON, M. S. in Ed. *Assistant Professor of Health Education and Physical Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

OLIVER PERRY CASH, M. A. *Music*
B. S., Miami University; M. A., Ohio State University.

LOUIS P. CASSIMATIS, M. S. in Ed. *History*
A. B., Youngstown University; M. S. in Ed., Westminster College.

WILLIAM JAMES CATHERWOOD, JR., M. M. *Music*
B. M., Cincinnati Conservatory of Music; M. M., University of Cincinnati.

JOHN ALLAN CATOLINE, M. Ed. *Social Science*
A. B., Youngstown University; M. Ed., Kent State University.

MARY CEBAK, B. S. in Ed. *Secretarial Studies*
B. S. in Ed., Youngstown University.

JOHN N. CERNICA, Ph. D. *Professor of Civil Engineering*
B. E., Youngstown University; M. S., Ph. D., Carnegie Institute of Technology.

ALBERT LIVAIN CHAMBERS, M. Ed. *Social Science*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh.

GEORGE CHAMBERS, M. A. *Natural Science*
B. S. in Ed., Kent State University; M. A., Ohio State University.

MICHAEL JEAN CHARIGNON, Ph. D. *Professor of Mechanical Engineering*
B. S. in Mech. E., B. S. in E. E., M. E., North Dakota State University; M. S., Ph. D., University of Pittsburgh.

MARVIN W. CHRISP, Ed. D. ..... *Associate Professor of Education*
B. A., M. A., University of Akron; Ed. D., Western Reserve University.

CLOYCE A. CHRISTOPHER, M. Ed. ..... *Assistant Professor of Education*
B. S., Kenyon College; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh; Kent State University.

MARY MEDVED CHRISTY, B. S. in Ed. ..... *Health Education and Physical Education*
R. N., St. Elizabeth Hospital; B. S. in Ed., Youngstown University.

THEODORE STANLEY CHROBAK, M. S. in C. E. ..... *Instructor in Chemical Engineering*
B. E., Youngstown University; M. S. in C. E., West Virginia University.

MARILYN JONES CHUEY, M. S. ..... *Assistant Professor of Health Education and Physical Education*
A. B., Mt. Union College; B. S. in Ed., Youngstown University; M. S., Ohio University.

PHILLIP F. CHUEY, LL. B. ..... *Assistant Professor of Accounting*
B. S. in B. A., LL. B., Youngstown University. Graduate study: Kent State University. C. P. A., State of Ohio.

FRANK A. CIOTOLA, M. A. ..... *Assistant Professor of Mathematics*
A. B., Youngstown University; M. A., Pennsylvania State University. Additional graduate study: University of Pittsburgh.

FRANK M. CLARK, M. S. ..... *Associate Professor of Physics*
B. A., Ripon College; M. S., Wayne State University. Additional graduate study: Michigan State University.

FANNY CLEVE ..... *Assistant Professor of Music*
Reife-Zeugnis, Staatsakademie (Musik), Vienna. Other study: Mozarteum, Salzburg.

IRWIN COHEN, Ph. D. ..... *Professor of Chemistry*
B. A., M. S., Ph. D., Western Reserve University.

MADELINE DUCKWORTH COLLINGWOOD, M. Ed. ..... *Education*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

MARGIE JEAN CONKLE, B. S. in Ed. ..... *Health Education and Physical Education*
B. S. in Ed., Youngstown University.

MARGARET REILLY CONNELLY, M. S. N. ..... *Health Education and Physical Education*
B. S., Youngstown University; M. S. N., Western Reserve University.

SISTER MARY JAMES CONROY, M. A. ..... *Communication*
B. S. in Ed., Youngstown University; M. A., Marquette University.

ANDREW CONTI, B. S. ..... *Instructor in Mathematics*
B. S., Youngstown University. Graduate study: University of Pittsburgh.

SISTER MARY AGNES CONVERY, M. A. ..... *Education*
B. S. in Ed., Kent State University; M. A., St. John College.

SISTER MARY JEROME CORCORAN, Ph. D. ..... *Education*
B. A., M. A., Catholic University of America; Ph. D., Western Reserve University.

CLAIRE SOZIO CORTESE, B. S. in Ed. ..... *Instructor in Secretarial Studies*
B. S. in Ed., Youngstown University.

ROBERT RICHARD COSTA, M. S. ..... *Instructor in Biology*
B. S., Youngstown University; M. S., Iowa State University. Additional graduate study: Western Reserve University.

SISTER MARIAN COZ, M. A. ..... *Education*
B. S. in Ed., Youngstown University; M. A., University of Notre Dame.

ROBERT D. CRAIG ..... *Instructor in Secretarial Studies*
Indiana College of Commerce; National Aeronautic College; Youngstown University.

MARY ELIZABETH CRAVER, M. A. ..... *Mathematics*
B. A., Wellesley College; M. Arch., Cambridge School of Architecture and Landscape Architecture; M. A., Columbia University.

HAROLD ROSS CRITES, M. A., *Assistant Professor of Speech and Dramatics, and of Social Science*
A. B., Hiram College; M. A., Western Reserve University. Additional graduate study: Western Reserve University.

KATHERINE HENRY CRITES, A. B. ..... *Communication*
A. B., Youngstown University. Graduate study: Western Reserve University.

BEATRICE JOHNSON CROASMUN, M. Ed. *Communication*
A. B., Oberlin College; M. Ed., University of Pittsburgh.

SISTER MARY EVELYN CROELL, Mus. M. *Music*
A. B., Ursuline College; Mus. B., University of Montreal; Mus. M., Catholic University of America.

R. KEITH CRUTCHER, A. B. *Merchandising*
A. B., Youngstown University. Graduate study: Kent State University.

HARMON DEAN CUMMINGS, M. M. *Music*
B. M., Oklahoma State University; M. M., Eastman School of Music.

JANE GLEASON CUNNINGHAM, M. S. in Ed. *Instructor in Psychology*
R. N., St. Elizabeth School of Nursing; B. S., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Kent State University.

SISTER MARY CURRAN, M. A. *Education*
B. A., Notre Dame College; M. A., Notre Dame University. Additional graduate study: Providence College.

SISTER MARY RICHARD CURRY, M. A. *Social Science*
B. S. in Ed., St. John College; M. A., Catholic University of America.

CHARLES BENTON CUSHWA, III, M. A. *Economics*
A. B., M. A., University of Notre Dame.

LISA ANN TAKACS CZIFRA, M. Mus. *Assistant Professor of Music*
B. Mus., Youngstown University; M. Mus., Michigan State University.

JOHN D'ANGELO, B. E. *Mechanical Engineering*
B. E., Youngstown University.

CHARLES W. DARLING, M. A. *History*
B. S. in Ed., Youngstown University; M. A., Ohio University. Additional graduate study: Pennsylvania State University.

ANTHONY FRANK DASTOLI, M. B. A. *Instructor in Business Organization*
B. E., Youngstown University; M. B. A. University of Pittsburgh.

CAROLINE DAVERIO, M. Litt. *Communication*
B. A., Westminster College; M. Litt., University of Pittsburgh.

JOHN HENRY DAVIDSON, JR., LL. B. *Business Organization*
LL. B., Youngstown University.

PHILIP DAVIDSON, M. D. *Health Education and Physical Education*
M. D., Western Reserve University.

MARJORIE RICE DAVIES, A. B. *Secretarial Studies*
A. B., Hiram College.

ANN DAVIS, M. Ed. *Education*
B. S. in Ed., Kent State University; M. Ed., University of Pittsburgh.

SALLY DAVIS, M. Ed. *Education*
B. S. in Ed., Kent State University; M. Ed., University of Pittsburgh.

SISTER MARY RITA DeCHELLO, M. A. *Education*
B. S. in Ed., M. A., St. John College.

NELLIE GWYNNE DEHNBOSTEL, M. A. *Associate Professor of Music and of Natural Science*
Mus. B., F. C. M., Mus. M., Dana's Musical Institute; B. A., B. S. in Ed., M. A., Kent State University. Additional graduate study: Kent State University.

RAYMOND HENRY DEHNBOSTEL, M. A. *Assistant Professor of Psychology*
Mus. B., Mus. M., Dana's Musical Institute; B. S. in Ed., M. A., Kent State University. Additional graduate study: Western Reserve University.

SISTER ROSEMARY DEIBEL, M. A. *French*
B. A., Sisters' College, Washington; M. A., Catholic University of America. Additional graduate study: Western Reserve University; Catholic University of America; Northwestern University.

EDWIN TERRY DEIDERICK, M. B. A. *Instructor in Merchandising*
B. S. in B. A., Youngstown University; M. B. A., New York University.

MYRON E. DESING, M. Litt. *Economics*
B. S., Miami University; M. Litt., University of Pittsburgh.

RAYMOND JOHN DiBLASIO, M. A. *Philosophy and Religion*
A. B., M. A., The Athenaeum of Ohio.

EDGAR GRAYBILL DIEHM, B. D. *Communication*
A. B., Juniata College; B. D., Crozer Theological Seminary. Graduate study: University of Pennsylvania.

THADDEUS MICHAEL DILLON, Ph. D. *Professor of Mathematics*
B. S., M. S., John Carroll University; Ph. D., University of Pittsburgh.

FLORENCE ELLEN DINGLEDY, M. A. ..... *Communication*
A. B., Ursuline College; M. A., Western Reserve University.

LAWRENCE A. DiRUSSO, M. A. ..... *Economics*
A. B., Youngstown University; M. A., Kent State University. Additional graduate study: Western Reserve University.

FRANK ANGELO D'ISA, Ph. D. ..... *Professor of Mechanical Engineering*
B. S., Youngstown University; M. S. in M. E., Carnegie Institute of Technology; Ph. D., University of Pittsburgh.

MARY KAY BUCKLEY D'ISA, B. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University. Graduate study: Kent State University.

GUIDO ANDRE DOBBERT, M. A. ..... *Assistant Professor of History*
M. A., University of Chicago. Additional graduate study: Western Reserve University.

MARY ANN POPE DOBRICH, M. Ed. ..... *Assistant Professor of Psychology*
A. B., Youngstown University; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

L. S. DOMONKOS, JR., M. M. S. ..... *Instructor in History*
A. B., Youngstown University; M. A., University of Notre Dame; M. M. S., Mediaeval Institute. Additional graduate study: Mediaeval Institute.

JOSEPH STEPHEN DONCHESS, LL. B. ..... *Instructor in Accounting*
LL. B., Youngstown University.

SAM EDWARD D'ONOFRIO, A. B. ..... *Instructor in Biology*
A. B., Youngstown University. Graduate study: Brown University.

DONALD DOOLEY, Ph. D. ..... *Physics*
B. S., Bethany College; M. S., University of Chicago; Ph. D., Ohio State University.

WILLIAM GIBSON DORNAN, LL. B. ..... *History*
LL. B., Ohio Northern University.

REBEKAH WESTFALL D'ORSI, M. A. ..... *Instructor in Communication*
A. B., Youngstown University; M. A., Western Reserve University.

DOUGLAS DOWNIE, M. S. ..... *Mathematics*
A. B., Oberlin College; B. S. in C. E., M. S., Ohio State University.

JOSELYN A. DRUSCHEL, B. A. ..... *Communication*
B. A., Westminster College.

ROBERT ANTHONY DUCA, M. A. ..... *Instructor in Spanish*
A. B., University of Pittsburgh; M. A., Middlebury College.

SISTER M. PATRICIA DURKIN, M. A. ..... *Education*
B. S. in Ed., Youngstown University; M. A., Notre Dame University.

CHRISTINE RHOADES DYKEMA, M. A. ..... *Assistant Professor of French*
Diplôme d'Etudes de Civilisation Française, Degré Supérieur, University of Paris (the Sorbonne); A. B., Barnard College; M. A., Western Reserve University.

KARL WASHBURN DYKEMA, A. M. ..... *Professor of English*
A. B., A. M., Columbia University. Additional graduate study: Alliance Française, Paris; University of Berlin; Columbia University.

WILLIAM G. DYKINS, M. S. in Ed. ..... *Communication*
A. B., Youngstown University; M. S. in Ed., Westminster College.

HUGH GEORGE EARNHART, M. A. ..... *Assistant Professor of History*
A. B., Bowling Green State University; M. A., University of Maryland. Additional graduate study: University of Maryland.

ALMA MYERS EBELING, A. M. ..... *Assistant Professor of Psychology*
B. S., A. M., Columbia University. Additional graduate study: Western Reserve University; Louisiana State University.

DAVID STAMBAUGH EDWARDS, LL. B. ..... *Business Organization*
B. S. in B. A., LL. B., Ohio State University. Graduate study: Ohio State University.

C. WILLIAM EICHENBERGER, M. S. in Ed. ..... *Instructor in Social Science*
A. B., Youngstown University; M. S. in Ed., Westminster College.

LOUISE HARCOM EINSTEIN, M. Ed. ..... *Instructor in Communication*
B. A., Chatham College; M. Ed., University of Pittsburgh. Additional graduate study: Harvard University.

SYLVAN H. D. EINSTEIN, M. B. A. ..... *Assistant Professor of Business Organization*
B. S. in B. A., Youngstown University; M. B. A., Western Reserve University. Additional graduate study: Western Reserve University.

DAVID ARTHUR ELLIOTT, B. S. in B. A. ..... *Accounting*
B. S., in B. A., Youngstown University. C. P. A., State of Pennsylvania.

FRANK MAHONY ELLIS, M. S. — *Associate Professor of Physics*
B. S., Carnegie Institute of Technology; M. Ed., M. S., University of Pittsburgh.

JULIA ALFORD ELSAMMAN, M. A. — *Assistant Professor of French*
B. A., Wake Forest College; M. A., Emory University. Additional graduate study: University of Grenoble, France; University of Pittsburgh.

RALPH DONALD ELSER, M. Litt. — *Assistant Professor of Speech and Dramatics*
A. B., Youngstown University; M. Litt., University of Pittsburgh. Additional graduate study: Washington University; New York University.

JAMES MARTIN ELSON, M. S. — *Assistant Professor of Music*
B. A., University of Tennessee; M. S., Juilliard School of Music.

SHULAMITH REICH ELSTER, M. A. — *Social Science and Communication*
B. A., New York University; M. A., Columbia University.

EARL EUGENE EMINHIZER, Th. M. — *Philosophy and Religion*
B. A., Furman University; B. S. in Ed., Youngstown University; B. D., Th. M., Crozer Theological Seminary. Additional graduate study: California School of Theology.

HALIL ERZURUM, M. S. — *Mechanical Engineering*
B. S., Robert College; M. S., Case Institute of Technology.

LARRY EUGENE ESTERLY, M. A. — *Instructor in Political Science*
A. B., Youngstown University; M. A., Johns Hopkins University. Additional graduate study: Johns Hopkins University.

CHARLES A. EVANS, Ph. D. — *Professor of Biology*
B. S. in Ed., Southeast Missouri State Teachers College; M. S., Washington University; Ph. D., University of Minnesota.

ERWIN MARK EVANS, M. B. A. — *Assistant Professor of Accounting*
B. S. in B. A., Youngstown University; M. B. A., Western Reserve University. Additional graduate study: Western Reserve University.

DOMINIC ARTHUR FALGIANI, JR., B. S. in Ed. — *Art*
B. S. in Ed., Youngstown University.

WILLIAM EDGAR FARRAGHER, B. A. — *Advertising*
B. A., Ohio Wesleyan University. Graduate study: University of Wisconsin; Ohio State University; Kenyon College.

ALEXANDER JOHN FEDOR, M. S. in Ed. — *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

ILAJEAN FELDMILLER, M. S. — *Assistant Professor of Home Economics*
B. S., Pennsylvania State University; M. S., Ohio State University. Additional graduate study: University of Pennsylvania; Columbia University; Ohio State University.

DIANE LYNN FENTULES, Mus. B. — *Music*
Mus. B., Cincinnati Conservatory of Music. Graduate study: Cleveland Institute of Music.

ROBERT FRANK FERRO, B. S. in B. A. — *Business Organization*
B. S. in B. A., Youngstown University. Graduate study: Western Reserve University.

SISTER M. BERNADINE FICKERS, M. Ed. — *Education*
B. S. in Ed., St. John College; M. Ed., Marquette University.

EDWARD E. FINAMORE, M. S. in Ed. — *Health Education and Physical Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

EDWARD J. P. FISHER, B. S. — *Assistant Professor of Metallurgical Engineering*
B. S., Worcester Polytechnic Institute. Graduate study: Columbia University.

MARILYN SUE FISHER, B. S. in Ed. — *Secretarial Studies*
B. S. in Ed., Youngstown University.

MASON LEE FISHER, M. S. — *Instructor in Physics*
B. S., Lafayette College; M. S., Lehigh University.

GLENN V. FISSELL, M. A. — *Instructor in Social Science*
A. B., St. Vincent College; B. S. in Ed., Youngstown University; M. A., John Carroll University. Additional graduate study: John Carroll University.

DOLORES SEVERIN FITZER — *Music*
Youngstown University. Pupil of Hermann Gruss. Accompanist for Jennie Weick.

JAMES ROBERT FITZER, Mus. B. — *Music*
Mus. B., Youngstown University. Graduate study: Western Reserve University; Vander Cook College of Music.

DEANNA JEAN FIX, M. A. — *Communication*
B. A., M. A., Kent State University.

WILLIAM SEITZ FLAD, M. B. A. — *Assistant Professor of Advertising*
A. B., Lafayette College; M. B. A., Harvard University. Additional graduate study: Western Reserve University.

ANN LOWERY FLOOD, B. S. in Ed. — *Education*
B. S. in Ed., Kent State University. Graduate study: Ohio State University; Miami University; Michigan State University; Westminster College.

THOMAS D. Y. FOK, Ph. D. — *Associate Professor of Civil Engineering*
B. E., Tung-Chi University; M. S., University of Illinois; M. B. A., New York University; Ph. D., Carnegie Institute of Technology.

ELMER FOLDVARY, Ph. D. — *Assistant Professor of Chemistry*
B. S., Youngstown University; M. S., Ph. D., Texas A. & M. University.

DOROTHY JEAN FORNEY, M. S. in L. S. — *Acquisitions Librarian with Rank of Instructor*
A. B., Youngstown University; M. S. in L. S., Western Reserve University.

FRANK A. FORTUNATO, LL. B. — *Instructor in Business Organization and Accounting*
A. B. A., LL. B., Youngstown University.

THEODORE CLAUDE FORWARD, M. S. in Ed. — *Communication*
B. S. in Ed., M. S. in Ed., Kent State University. Additional graduate study: Kent State University; University of Akron.

J. DONALD FOSTER, M. A. — *Instructor in Sociology*
B. A., M. A., Kent State University. Additional graduate study: Oberlin Graduate School of Theology.

VIRGIL FREED, M. Ed. — *English*
A. B., Youngstown University; M. Ed., University of Pittsburgh.

MASA KITAGAWA FUKUI, M. S. — *Music*
B. M., University of Colorado; B. S., M. S., Juilliard School of Music.

RICHARD FULLER, A. B. — *Accounting*
A. B., Oberlin College. Certified Public Accountant.

MURIEL TIETZ GALICIA, M. S. in Ed. — *Communication*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Kent State University.

ALFONSO L. GARCIA, J. D. — *Assistant Professor of Spanish*
A. B., Instituto de la Habana; Doctor en leyes, Universidad de la Habana. Diplomado en Fiologia Hispanica, Universidad de Salamanca. Additional graduate study, University of Pittsburgh.

BERNICE GARRISON, A. B. — *Education*
A. B., Youngstown University; Certificate, Indiana State Teachers College. Graduate study: Pennsylvania State College.

FRANK EDWARD GASPER, M. S. — *Biology*
A. B., Youngstown University; M. S., University of Arizona.

CAROL McINTYRE GAY, M. A. — *Instructor in Communication*
A. B., Youngstown University; M. A., Ohio State University. Additional graduate study: Western Reserve University; Kent State University.

THOMAS GAY, M. A. — *Assistant Professor of English*
A. B., Youngstown University; M. A., Western Reserve University. Additional graduate study: Ohio State University; Western Reserve University.

LAWRENCE GILBOY, JR., M. Ed. — *Physics*
B. A., Ohio State University; M. Ed., University of Pittsburgh.

JOHN PAUL GILLESPIE, B. S. in B. A. — *Assistant Professor of Merchandising*
B. S. in B.A., Youngstown University.

JOHN M. GLINATSIS, A. B. — *History*
A. B., Youngstown University. Graduate study: University of Colorado.

DOROTHY HAYNS GMUCS, A. B. — *Instructor in Speech and Dramatics*
A. B., Youngstown University. Graduate study: Kent State University.

WILLIAM M. GODDARD, JR., B. S. in B. A. — *Accounting*
B. S. in B. A., Youngstown University. Graduate study: Western Reserve University. C. P. A., State of Ohio.

EMILY GOLDSTEIN, M. S. in Ed. — *Instructor in Accounting and Business Organization*
A. B., New York University; M. S. in Ed., Columbia University. Additional graduate study: University of Pittsburgh.

JOSEPH FRANK GONCZ, JR., M. S. — *Assistant Professor of Electrical Engineering*
B. E., Youngstown University; M. S., University of Akron.

ADORACION ESPINOSA FRIAS GONZALEZ, M. A. — *Instructor in Social Science*
A. B., Adamson University, Manila; M. A., Michigan State University.

CLARENCE GOTERBA, M. Litt. — *Social Science*
B. S. in Ed., Bowling Green State University; M. Litt., University of Pittsburgh. Additional graduate study: Westminster College.

HELLEN MENKO GOUDSMIT, Ph. D. — *Chemistry*
Candidaat, University of Amsterdam; Ph. D., Cornell University.

RONALD L. GOULD, M. S. M. — *Assistant Professor of Music*
Mus. B., North Central College; M. S. M., Union Theological Seminary. Additional graduate study: Western Reserve University; Union Theological Seminary.

GEORGE GRAF, Ph. D — *Associate Professor of Chemistry*
Ph. D., University of Budapest.

JOSEPH KENNETH GRAN, B. S. in Ed. — *Instructor in Merchandising*
B. S. in Ed., Youngstown University. Graduate study: Kent State University.

CLARENCE E. GRAY, M. A. — *Instructor in Social Science*
A. B., Ohio Northern University; M. A., Ohio State University.

VIOLA GREEN — *Secretarial School*
Youngstown University.

MARIE FOLEY GUBSER, B. S. in Ed. — *Communication*
B. S. in Ed., Kent State University.

JOHN W. GUFFEY, JR., B. E. — *Industrial Engineering*
B. E., Youngstown University.

MARY GOUGH GUTERBA, M. S. in Ed. — *Instructor in Psychology*
A. B., Youngstown University; M. S. in Ed., Westminster College.

WILLIAM JOHN GUTKNECHT, JR., A. B. — *Instructor in Business Organization.*
A. B., Cornell University. Graduate study: Kent State University.

PHILIP JEROME HAHN, Ph. D. — *Assistant Professor of Economics*
B. S. in Ec., Juniata College; M. B. A., Harvard University; Ph. D., Western Reserve University.

EMANUEL HALLAMAN, M. A. — *History*
B. S. in Ed., Slippery Rock State College; M. A., Ohio State University. Additional graduate study: Ohio State University.

BETTE HAMADY, B. S. in B. A. — *Business Organization*
B. S. in B. A., Ohio University.

GEORGE F. HAMILTON, M. S. — *Biology*
B. S., Pennsylvania State University; M. S., State University of Iowa.

CLYDE THOMAS HANKEY, Ph. D. — *Associate Professor of English*
A. B., M. A., University of Pittsburgh; M. A., Ph. D., University of Michigan.

WILLIAM WATSON HANKS, M. S. — *Assistant Professor of Merchandising*
B. S., Delta State Teachers College; M. S., New York University. Additional graduate study: Kent State University.

HILDA GEORGE HANNA, B. A. — *Instructor in Secretarial Studies*
B. A., Ohio State University. Graduate study: Kent State University.

CARL W. HANSEN, B. A. — *Economics*
B. A., Ohio State University.

ANN GRAETSCH HARRIS, M. S. — *Geology*
B. S., Kent State University; M. S., Miami University.

C. EARL HARRIS, JR., M. S. — *Assistant Professor of Geology*
B. S., Kent State University; M. S., Miami University.

WILLIAM HAMILTON HARRIS, M. A. — *Sociology*
B. S. in Ed., Youngstown University; M. A., Kent State University.

ABE HARSHMAN, A. B. — *Accounting*
A. B., Youngstown University. C. P. A., State of Ohio.

ELWIN HARWELL HASKIN, M. A. — *Music*
Mus. B., M. Mus., Westminster Choir College; M. A., Western Reserve University.

EVA C. HASKIN, M. A. — *Music*
Mus. B., Westminster Choir College; M. A., Western Reserve University.

DAVID R. HAYLETT, B. S. in Ed. — *Geography*
B. S. in Ed., Slippery Rock State College. Graduate study: Kent State University.

LOUISE SAYWELL HEATH, A. B. *Communication*
A. B., Oberlin College. Graduate study: Oberlin College; Westminster College.

KALMAN HEINDLHOFER, Ph. D. *Metallurgical Engineering*
Dipl. Engineer, Zurich Polytechnic Institute; M. S., Carnegie Institute of Technology; Ph. D., University of Pennsylvania.

HOWARD W. HELDMAN, M. Ed. *Health Education and Physical Education*
B. S. in Ed., Miami University; M. Ed., Westminster College.

GERTRUDE POTTER HENDRICKS, M. S. *Psychology*
B. S., M. S., Ohio State University.

KURT HEYDLE, M. A. *German*
A. B., Miami University; M. A., Ohio State University.

MAYNARD EUGENE HILTON, B. S. in Ed. *Instructor in Military Science*
B. S. in Ed., University of New Hampshire. Captain, United States Army.

JOHN FRANKLIN HINES, M. A. *German and Communication*
A. B., Youngstown University; M. A., Kent State University.

DORIS MAY LUGINBUHL HIRABAYASHI, M. S. *Assistant Professor of Biology*
B. S., Mount Union College; M. S., University of Washington. Additional graduate study: Universidad de San Carlos, Guatemala.

MARY IRENE HOFFMAN, B. S. in Ed. *Communication*
B. S. in Ed., Youngstown University.

NAN LAUDIG HOGUE, Mus. M. *Instructor in Communication*
Mus. B., Oberlin College; A. B., University of Pittsburgh; Mus. M., Oberlin College. Additional graduate study: University of Pittsburgh.

BURTON HENRY HONEY, M. Ed. *Education*
A. B., Heidelberg College; M. Ed., Kent State University. Additional graduate study: University of Pittsburgh.

JUDY COLEMAN HOOVER, B. A. *Communication*
B. A., Mount Union College. Graduate study: Kent State University.

LOIS M. HOPKINS, M. M. *Associate Professor of Music*
Mus. B., Morningside College Conservatory of Music; M. M., Eastman School of Music.

ROBERT ELLIOTT HOPKINS, D. M. A. *Assistant Professor of Music*
Mus. B., Mus. M., D. M. A., Eastman School of Music. Additional graduate study: Akademie der Musik und Darstellende Kunst, Vienna.

ANTHONY J. HOSICK, B. S. in B. A. *Accounting*
B. S. in B. A., Youngstown University. Graduate study: Western Reserve University.

HUBERT COLEMAN HOWARD, Ph. D. *Associate Professor of English*
B. A., Ohio Wesleyan University; M. A., Ph. D., Ohio State University.

DAVID HOWLAND, A. M. *Instructor in Speech and Dramatics*
B. S. in Ed., Ohio University; A. M., Columbia University.

SISTER MARIE HUGHES, M. A. *Education*
B. S. in Ed., Youngstown University; M. A., St. Mary College. Additional graduate study: Catholic University of America.

ETHELEEN HUGLI, M. S. *Home Economics*
B. S., M. S., Ohio State University.

EDWARD J. HULME, B. S. in B. A. *Business Organization and Merchandising*
B. S. in B. A., Ohio State University.

JACK CORBETT HUNTER, M. A. *Economics*
A. B., University of Denver; M. A., Kent State University.

EMILY SUSAN HURA, M. S. in Ed. *Health Education and Physical Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

RAYMOND W. HURD, M. Ed. *Assistant Professor of Mathematics*
B. S. in Ed., M. Ed., Ohio University. Additional graduate study: Ohio State University.

FRANK PATTERSON IRWIN, M. Litt. *History*
A. B., M. Litt., University of Pittsburgh.

EDWARD ISTNICK, M. S. T. *Mathematics*
B. S. in Ed., Kent State University; M. Ed., University of Pittsburgh; M. S. T., University of New Hampshire.

DAVID SCOTT IVES, M. A. *Associate Professor of Greek and Humanities*
B. A., Baldwin-Wallace College; M. A., Western Reserve University. Additional graduate study: University of Chicago.

CLINGAN JACKSON, A. B. ..... *Political Science*
A. B., University of Colorado.

LILLIAN ALLISON JACOBS, M. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

DUDLEY S. JAMES, M. S. in Ret. ..... *Merchandising*
B. S., Bucknell University; M. S. in Ret., University of Pittsburgh. Additional graduate study: Western Reserve University.

WILLIAM JERROLD JAMES ..... *Military Science*
Sergeant, United States Army.

JOHN MICHAEL JANOSIK, M. Ed. ..... *Secretarial Studies*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh.

GEORGE KARL JEFFERS, B. E. ..... *Metallurgical Engineering*
B. E., Youngstown University.

VERA JENKINS, M. Ed. ..... *Associate Professor of Accounting and Business Organization*
A. B., B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh.

MARY ELIZABETH JEWETT, A. M. ..... *Instructor in Education*
B. S. in Ed., Ohio University; M. Ed., University of Pittsburgh; A. M., Columbia University.

HAROLD NELS JOHNSON, M. A. ..... *Assistant Professor of Mechanical Engineering*
B. S. in Ed., M. A., Ohio State University; LL. B., Youngstown University.

NORMAN JOSEPH JOHNSON, Ph. D. ..... *Sociology*
A. B., University of Pittsburgh; M. A., Ph. D., Ohio State University.

GEORGE H. G. JONES, M. A. ..... *Librarian with Rank of Assistant Professor*
B. A., Oberlin College; M. A., Harvard University; M. A. in L. S., Kent State University. Additional graduate study: Harvard University.

WILLIAM FOSTER JONES, M. S. ..... *Natural Science*
A. B., M. S., Ohio University.

ELAINE SUZAN JUHASZ, B. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University. Graduate study: Kent State University.

SISTER MARY MARK KALAPOS, M. A. ..... *Education*
B. S. in Ed., Youngstown University; M. A., Notre Dame University. Additional graduate study: St. John College; Catholic University of America.

MARTIN KAPLAN, M. S. A. ..... *Sociology*
A. B., Brooklyn College; M. S. A., University of Pennsylvania.

WALTER ROBERT KELLER, B. A. ..... *Communication*
B. A., University of Iowa. Graduate study: University of Iowa.

JEAN McCLURE KELTY, M. A. ..... *Assistant Professor of English*
A. B., Youngstown University; M. A., Western Reserve University. Additional graduate study: Western Reserve University.

JOHN K. KENNEDY, M. S. in Ed. ..... *Psychology*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

SHIRLEY L. KERMANI, R. N. ..... *Health Education and Physical Education*
R. N., Youngstown Hospital Association.

TAGHI KERMANI, Ph. D. ..... *Associate Professor of Economics*
Licienciate in Law, University of Tehran; M. A., Ph. D., University of Nebraska. Post-doctoral study: University of Nebraska; Indiana University.

SISTER MARY AUGUSTA KINKELAAR, M. A. ..... *Geography*
B. S. in Ed., M. A., St. John College.

KATHRYN HOFFMAN KIRACOFE, Mus. Sch. B. ..... *Communication*
Mus. Sch. B., Oberlin College. Graduate study: Syracuse University.

JAMES WILLIAM KIRIAZIS, M. S. W. *Assistant Professor of Sociology*
A. B., Youngstown University; M. S. W., Louisiana State University. Additional graduate study: University of Pittsburgh.

MICHAEL KLASOVSKY, M. A. ..... *Associate Professor of Geography and Geology*
B. S. in Ed., Bowling Green State University; M. A., Ohio State University. Additional graduate study: Ohio State University.

RICHARD JAMES KLEIN, M. S. in Ed. ..... *Social Science*
B. B. A., University of Pittsburgh; M. S. in Ed., Westminster College.

SISTER MARGARET ANN KLEMPAY, M. A. ..... *Art*
B. S. in Ed., Youngstown University; M. A., Pius XII Institute.

J. FREDERICK KLIMKO, M. A. — *Physics*
A. B., M. A., Western Reserve University.

ROBERT CARL KLIMKO, M. A. — *Mathematics*
A. B., M. A., Western Reserve University.

ALMA ROSENA KLINGER, M. A. — *French*
A. B., Mount Union College; M. A., Middlebury College. Additional graduate study: University of Colorado.

LELAND WILLARD KNAUF, M. Ed. — *Assistant Professor of Mathematics*
B. S. in Ed., M. Ed., Kent State University.

WILLIAM HOWARD KNISELY, JR., M. Ed. — *Education*
A. B. in Ed., Fairmont State College; M. Ed., Kent State University.

MARILYN A. KOCINSKI, M. Ed. — *Assistant Professor of Health Education and Physical Education*
B. S. in Ed., M. Ed., Kent State University. Additional graduate study: Connecticut College for Women.

FEODOR S. KOVALCHUK, A. B. — *History and Russian*
A. B., Columbia University; Diploma, St. Vladimir's Orthodox Theological Seminary. Graduate study: Loyola of the East.

FRANK J. KOWALCZYK, B. E. — *Electrical Engineering*
B. E., Youngstown University.

RAYMOND EDWARD KRAMER, M. S. in E. E. — *Associate Professor of Electrical Engineering*
B. S., Heidelberg College; M. S. in E. E., Case Institute of Technology. Additional graduate study: Case Institute of Technology; University of Pittsburgh.

FRANCIS KRAVEC, M. D. — *Biology*
B. S., M. S., M. D., Loyola University.

BERTINA A. LABORDE, M. S. — *Assistant Professor of Health Education and Physical Education*
B. S. in Ed., M. S., Ohio University.

ROBERT P. LACICH, M. B. A. — *Instructor in Business Organization*
B. S. in Ed., Slippery Rock State College; M. B. A., University of Pittsburgh.

ALEX G. LALUMIA, B. S. in B. A. — *Merchandising*
B. S. in B. A., Youngstown University.

GEORGE JOSEPH LANDIS, M. S. in Ed. — *Communication*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

ANTHONY MICHAEL LANG, Ph. D. — *Assistant Professor of Philosophy and Religion*
A. B., St. Leo College; A. M., Ph. D., Catholic University of America.

KENNETH ANDREW LAPIN, B. S. in Ed. — *Secretarial Studies*
B. S. in Ed., Youngstown University.

JACOB FRANCIS LARSON, M. A. — *Music*
B. M., Cincinnati Conservatory of Music; M. A., Kent State University.

LORNA SMOLKO LARSON, B. M. — *Music*
B. M., Cincinnati Conservatory of Music.

EDWARD H. LATIMER, Ph. D. — *Philosophy and Religion*
A. B., Catholic University of America; St. B., Gregorian University; M. A., Catholic University of America; Ph. D., University of Pittsburgh.

NAOMI MAY LAUGHBAUM, M. A. — *Education*
B. S., Wittenberg College; M. A., Ohio State University. Additional graduate study: Columbia University.

OTTO LAUMANN, M. A. — *Economics*
B. S., M. A., University of Hamburg.

CORRINE LEDGER, B. S. in Ed. — *Education*
B. S. in Ed., Youngstown University.

ROBERT JOHN LEEPARD, JR., B. S. in Ed. — *Art*
B. S. in Ed., Youngstown University.

CARMEN JOHN LEONE, M. A. — *Communication*
A. B., Youngstown University; M. A., University of Florida.

JAMES JOHN LEPORE, M. Ed. — *Assistant Professor of Art*
B. S. in Ed., Youngstown University; M. Ed., Illinois Institute of Technology.

ROGER DAVID LEWIS, B. S. in Ed. — *Astronomy*
B. S. in Ed., Youngstown University. Graduate study: Syracuse University.

EARLE O. LIGGITT, Ph. D. — *Education*
B. S., Muskingum College; M. A., Ph. D., University of Pittsburgh.

LOUISE SWANSON LINDBERG, M. S. — *Home Economics*
B. S., North Central College; M. S., Illinois Institute of Technology.

LORETTA MARIA LIPTAK, B. S. in Ed. — *Health Education and Physical Education*
B. S. in Ed., Youngstown University. Graduate study: Ohio State University.

JOHN CHARLES LITTY, JR., LL. B. — *Secretarial Studies*
B. S. in B. A., Kent State University; LL. B., Ohio State University.

JOSEPH C. LONG, M. Litt. — *Assistant Professor of Business Organization*
B. S., Thiel College; M. Litt., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

JOHN LOTH, M. A. — *History*
A. B., Westminster College; M. A., University of Southern California. Additional graduate study: University of Pittsburgh.

MARY PERKINS LOVE, B. S. in Ed. — *Home Economics*
B. S. in Ed., Kent State University. Graduate study: University of Tennessee.

JAMES GARY LUCAS, A. B. — *Instructor in Art*
A. B., Youngstown University. Graduate study: Kent State University.

JOSEPH RICHARD LUCAS, Ph. D. — *Associate Professor of Philosophy and Religion*
A. B., University of Scranton; A. M., S. T. B., S. T. L., University of Ottawa; A. M., Kent State University; Ph. D., University of Ottawa; S. T. D., Angelicum University of Rome; LL. B., Youngstown University; J. C. B., J. C. L., J. C. D., Lateran University, Rome. Post-doctoral study: Oxford University.

PAUL LUGINBILL, M. S. — *Associate Professor of Chemical Engineering*
B. S. in Ch. E., Purdue University; M. S., University of Akron.

SISTER MARY ANNE LYNCH, M. A. — *Education*
B. S. in Ed., St. John College; M. A., Peabody College for Teachers; M. A., Boston College. Additional graduate study: Catholic University of America; St. John University.

ANTHONY HO-KIN MA, M. S. in C. E. — *Mathematics*
B. S., St. Mary's University; B. E., Nova Scotia Technical College; M. S. in C. E., Case Institute of Technology.

JOHN MAC DONALD, M. S. in Ed. — *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

THEODORE THOMAS MACEJKO, LL. B. — *Business Organization*
A. B., Youngstown University; LL. B., Ohio Northern University.

DONALD DOUGLAS MAC EWAN, M. A. — *Mathematics*
A. B., Baldwin-Wallace College; M. A., Ohio State University. Additional graduate study: Columbia University.

EMILY PARKER MACKALL, M. A. — *Associate Professor of Economics*
B. A., Westminster College; M. A., Northwestern University. Additional graduate study: University of Pennsylvania; Case Institute of Technology; University of Pittsburgh.

WILLIAM E. MACKIN, B. S. in Ed. — *Mathematics*
B. S. in Ed., Youngstown University. Graduate study: Westminster College.

RICHARD M. MAGNER, M. S. in Ed. — *Assistant Professor of Business Organization*
B. S. in Ed., Indiana State College; M. S. in Ed., Westminster College.

INALLY MAHADEVIAH, Ph. D. — *Assistant Professor of Chemistry*
B. S., M. S., University of Mysore, S. India; Ph. D., University of Cincinnati.

FRANK JOSEPH MALAK, M. Litt. — *Associate Professor of Mathematics*
B. S. in Ed., Ohio State University; M. Litt., University of Pittsburgh.

STANLEY MALYS, M. A. — *Mathematics*
A. B., B. S., B. S. in Ed., Youngstown University; M. A., Kent State University.

MELVIN MAMULA, M. Litt. — *Instructor in Advertising*
B. S. in B. A., Youngstown University; M. Litt., University of Pittsburgh.

SISTER MARIE DELOURDES MANLEY, M. A. in Ed. — *History*
B. S. in Ed., St. John College; M. A. in Ed., University of Notre Dame.

NICHOLAS MANOS, LL. B. — *History*
B. S. in Ed., LL. B., Youngstown University.

JOHN VINCENT MANTON, M. A. — *Assistant Professor of Geography*
B. A., M. A., University of Michigan. Additional graduate study: University of Michigan.

FRANK JOSEPH MARKOVICH, M. S. in Ed. — *Mathematics*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

CARL A. MARKS, JR. *Music*
Pupil of Daniel Bonade and Robert Marcellus.

JOHN THOMAS MARKUS, M. A. *Philosophy and Religion*
B. A., M. A., St. Vincent College. Additional graduate study: University of Pittsburgh.

MICHAEL JOSEPH MARO, M. Ed. *Health Education and Physical Education*
B. S. in Ed., Kent State University; M. Ed., University of Pittsburgh.

BERTHA BROWNE MARTIN, M. A. *Education*
B. S. in Ed., University of Miami; M. A., Kent State University.

SISTER MARY OF THE ANGELS MARTIN, M. A. *Communication*
A. B., St. Mary-of-the-Woods College; M. A., Villanova University. Additional graduate study: Catholic University of America; John Carroll University; Duquesne University.

JOANN KONESKY MASLEN, B. S. in Ed. *Secretarial Studies*
B. S. in Ed., Youngstown University.

YVONNE A. MATHER, M. Ed. *Biology*
B. S. in Ed., M. Ed., State College at Boston.

DONALD H. MATHEWS, JR., M. B. A. *Instructor in Merchandising*
B. B. A., Baylor University; M. B. A., Southern Methodist University.

JOSEPH RAYMOND MATTEO, LL. B. *History*
A. B., LL. B., Youngstown University.

ALBERT MATZYE, M. Ed. *Instructor in Geography and Natural Science*
B. S. in Ed., Youngstown University; M. Ed., Kent State University.

GUS MAVRIGIAN, M. S. *Assistant Professor of Mathematics*
B. S., M. S., Carnegie Institute of Technology. Additional graduate study: University of Colorado; Carnegie Institute of Technology.

JOSEPH W. MAXIN, LL. B. *History*
A. B., LL. B., Youngstown University.

NANCY KIRKER MAYBERRY, B. A. *Mathematics*
B. A., Miami University.

WALTER EDWIN MAYER, Ph. D. *Professor of Psychology*
B. A., Ohio Northern University; M. Ed., Ph. D., University of Pittsburgh.

WALTER MAYHALL *Instructor in Music*
Pupil of Maurice Sharp, Herbert Elwell, Ward Lewis, and Leonard Shure; former member, Cleveland Orchestra, Kansas City Symphony.

CLAIRE ELIZABETH MCCUNE, M. Ed. *Education*
B. S. in Ed., Geneva College; M. Ed., University of Pittsburgh.

SISTER MARY VIRGINIA MCDERMOTT, M. A. *Communication*
B. S. in Ed., St. John College; M. A., Catholic University of America.

EDNA MAE KARL MCDONALD, M. Litt. *Assistant Professor of Sociology*
A. B., Youngstown University; M. Litt., University of Pittsburgh. Additional graduate study: University of Colorado.

MARCUS V. MCEVOY, B. A. *Education*
B. A., Ohio State University. Graduate study: Ohio State University; University of Pittsburgh.

SISTER MARY LOUISE MCGRAW, M. A. *Psychology*
B. A., M. A., Catholic University of America.

LEAH MACDONALD MCILROY, A. M. *Music*
A. B., Youngstown University; A. M., Carnegie Institute of Technology. Additional graduate study: Oberlin Conservatory of Music.

HAROLD BRUCE MCINTOSH, JR., M. Litt. *Mathematics*
B. S., Youngstown University; M. Litt., University of Pittsburgh.

KEITH MCKEAN, M. A. *Instructor in Social Science*
Ph. B., University of North Dakota; M. A., Fordham University. Diploma, St. Vladimir's Orthodox Theological Seminary.

HORACE L. MCLEAN, B. Ar. *Instructor in Social Science*
B. Ar., Ohio State University.

ROBERT GEORGE MCNAMEE, M. S. *Assistant Professor of Electrical Engineering*
B. E., Youngstown University; M. S., Ohio State University. Additional graduate study: University of Pittsburgh.

CHARLES MCNEAL, M. A. *Instructor in English*
A. B., Ohio State University; M. A., University of Pennsylvania.

FRANK JOHN MECAK, A. B. *Education*
A. B., Youngstown University. Graduate study: Kent State University.

RAYMOND EDWARD MEINERS, M. A. — *Instructor in Business Organization*
B. S. in C. and F., Millikin University; M. B. A., Kent State University; M. A., Ohio State University.

SISTER MARY WINIFRED MELODY, M. A. — *Communication*
B. A., Catholic University of America; M. A., Notre Dame University.

HARRY MESHEL, M. S. — *Business Organization*
B. S. in B. A., Youngstown University; M. S., Columbia University.

A. ELIZABETH MILLER, M. A. — *Education*
A. B., Thiel College; M. A., Columbia University. Additional graduate study: University of Chicago, Columbia University.

HENRY ELMO MILLER, M. S. in Ed. — *Communication*
B. S., John Carroll University; M. S. in Ed., Westminster College.

HOWARD H. MILLER, M. Ed. — *Instructor in Education*
A. B., Manchester College; M. Ed., University of Pittsburgh.

JACK S. MILLER, M. S. in S. S. — *Sociology*
B. S., Rhode Island State College; B. Ed., Rhode Island College of Education; M. S. in S. S., Boston University.

JESSE LEROY MILLER, JR., M. A. — *Social Science*
B. A., Thiel College; M. A., University of Chicago. Additional graduate study: University of Michigan.

ROBERT LAVELLE MILLER, M. B. A. — *Professor of Accounting*
B. S. in B. A., M. B. A., Ohio State University. Additional graduate study: Dartmouth College.

WILLIAM FREDERIC MILLER, M. S. M., Mus. D., D. D. — *Music*
A. B., B. Mus., Otterbein College; B. D., M. S. M., Union Theological Seminary; Mus. D., College of Wooster; D. D., Westminster College.

H. KEITH MILLHONE, M. Ed. — *Business Organization*
B. S. in B. A., M. Ed., Kent State University. Additional graduate study: Kent State University.

MARGARITA MILLS, M. A. — *Associate Professor of Spanish*
B. A., M. A., University of Mississippi; Licenciada en Letres, Universidad de San Carlos, Guatemala. Additional graduate study: University of Minnesota.

ROY N. MILLS, M. A. — *Assistant Professor of Art*
B. F. A., Minneapolis School of Art; M. A., Western Reserve University. Previous study: Art Institute of Chicago; University of Mississippi; Academia Nacional de Bellas Artes, Guatemala City.

THELMA SMITH MINER, Ph. D. — *Professor of English*
A. B., Dickinson College; M. A., Ph. D., University of Pennsylvania.

WARD LESTER MINER, Ph. D. — *Professor of American Studies*
B. A., University of Colorado; M. A., University of Chicago; Ph. D., University of Pennsylvania.

JOHN J. MOHN, M. S. — *Psychology*
A. B., Akron University; M. S., Western Reserve University. Additional graduate study: Western Reserve University; Westminster College.

JOSEPH A. MOORE, Ed. D. — *Education*
B. S., M. A., Ed. D., University of Pittsburgh.

MARGARET CAMERON MOORE, M. A. — *Sociology*
B. S., Ohio State University; M. A., Kent State University.

THEODORE R. MOORE, M. Litt. — *Communication*
A. B., Youngstown University; M. Litt., University of Pittsburgh.

WILLIAM DAVID MOORE, M. S. in Ed. — *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

SISTER M. CECILIA MORANO, M. Mus. — *Music*
B. Mus., Youngstown University; M. Mus., Notre Dame University.

SISTER ALICE MARIE MORLEY, B. S. in Ed. — *Education*
B. S. in Ed., Kent State University. Graduate study: Pius XII Institute of Art, Florence, Italy.

THOMAS FRANCIS MOSURE, M. S. — *Civil Engineering*
B. E., Youngstown University; M. S., University of Pittsburgh.

LOYAL B. MOULD, B. S. in Ed. — *Music*
B. S. in Ed., Youngstown University.

WARD WIGHT MOWRY, JR., Ph. D. — *Psychology*
B. A., M. S., University of Bridgeport; Ph. D., University of Tennessee.

GRATIA HENRY MURPHY, M. A. — *Instructor in Communication*
B. A., Bucknell University; M. A., Ohio State University.

JOHN H. MURPHY, JR., Ph. B. *Philosophy and Religion*
Ph. B., John Carroll University; B. S. in B. A., Youngstown University. Graduate study: Western Reserve University; Kent State University.

JOHN N. MURPHY, B. S. in B. A. *Secretarial Studies*
Ph. B., John Carroll University; B. S. in B. A., Youngstown University.

THOMAS R. MURPHY, M. Ed. *Secretarial Studies*
B. S. in Ed., Youngstown University; M. Ed., Kent State University.

JOHN MICHAEL NABEREZNY, M. A. *Associate Professor of Art*
B. S. in Ed., Youngstown University; M. A., State University of Iowa. Additional graduate study: Garrett Biblical Institute.

KATHERYN DUDESKO NAPLES, B. S. in Ed. *Health Education and Physical Education*
B. S. in Ed., Youngstown University.

DONALD N. NELSON, M. Ed. *Business Organization*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh.

WILLIAM GERALD NELSON, Ph. D. *Assistant Professor of Economics*
A. B., Youngstown University; M. Litt., Ph. D., University of Pittsburgh.

REUBEN NESS, M. A. *Hebrew*
B. A., City College of New York; M. A., New York University.

RUTH CRAIGIE NEWCOMB, M. S. in L. S. *Catalog Librarian with Rank of Instructor*
B. A., Sterling College; B. S. in L. S., Kansas State Teachers College; M. S. in L. S., Western Reserve University.

BEATRICE FRIED NEWMAN, M. A. *Art*
B. S., Youngstown University; M. A., New York University.

LOUIS M. NICASTRO, M. S. in Ed. *Accounting*
B. B. A., M. S. in Ed., Westminster College.

ESTHER P. NIEMI, M. A. *Assistant Professor of Accounting and Economics*
B. S. in B. A., Youngstown University; M. A., Western Reserve University. Additional graduate study: Western Reserve University.

MICHAEL ANGELO NODAY, A. B. *History*
A. B., Youngstown University.

PATRICK W. NOLFI, M. A. *History*
B. A., M. A., Ohio University.

LARRY RICHARD NORD, M. S. in Ed. *Social Science*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

SISTER M. ANNUNCIATA O'CONNOR, M. A. *Social Science*
A. B., Texas Christian University; M. A., John Carroll University. Additional graduate study: Villanova University; Notre Dame University.

ELOISE GEESAMAN OGRAM, B.A. *Communication*
B. A., Allegheny College.

NANCY JEAN OLENICK, B. S. in Ed. *Secretarial Studies*
B. S. in Ed., Youngstown University.

AMELIA BORAK OLES, M. Ed. *Instructor in Communication*
B. B. A., Westminster College; M. Ed., University of Pittsburgh.

WILLIAM N. OLYNYK, B. D. *Social Science*
B. A., B. D., Great Lakes College. Graduate study: University of Dubuque.

WILLIAM C. ORTON, LL. B. *History*
A. B., LL. B., Youngstown University.

JOHN OZAKI, B. S. in B. A. *Instructor in Military Science*
B. S. in B. A., University of Florida. Major, United States Army.

CLYDE ANDREW PAINTER, M. A. *Assistant Professor of Business Organization*
B. B. A., Northeastern University; M. A., Colorado State College. Additional graduate study: Colorado State College.

EDITH PRATT PAINTER, Ed. D. *Associate Professor of Psychology*
B. S., Tufts University; M. A., Columbia University; Ed. D., Colorado State College.

ANTHONY PHILLIP PALERMO, B. S. in Ed. *History*
B. S. in Ed., Ohio University. Graduate study: Ohio University.

SISTER M. FRANCIS XAVIER PANK, B. A. *Health Education and Physical Education*
B. A., Notre Dame College. Graduate study: Marquette University.

NICHOLAS PARASKA, M. S. *Assistant Professor of Civil Engineering*
B. S., United States Military Academy; M. S., Agricultural and Mechanical College of Texas. Additional graduate study: New York University; George Washington University; Carnegie Institute of Technology.

SISTER M. GERTRUDE PARIS, M. A. *Biology and Education*
B. S. in Ed., Youngstown University; M. A., University of Notre Dame.

ESOTTO PELLEGRINI, Mus. B. *Instructor in Music*
B. S. in Ed., Mus. B., Youngstown University.

VIVIAN HARPER PEMBERTON, B. S. in Ed. *Communication*
B. S. in Ed., Kent State University.

SISTER M. ALEXIS PERNOTTO, B. S. in Ed. *Health Education and Physical Education*
B. S. in Ed., Youngstown University; R. N., St. Elizabeth Hospital.

RALPH PATRICK PERRICO, M. A. *Communication*
A. B., Youngstown University; M. A., University of Arkansas.

JOHN EDWARD PETREK, M. S. in E. *Assistant Professor of Mechanical Engineering*
B. S., Oregon State College; M. S. in E., University of Akron. Additional graduate study: University of Pittsburgh.

JOHN PETRETICH, M. Ed. *Natural Science*
A. B., Hiram College; M. Ed., University of Pittsburgh.

WILLIAM PETRYCH, M. A. *Assistant Professor of Accounting and Business Organization*
B. S., M. A., Ohio State University.

MARGARET ISABELLE PFAU, Ph. D. *Associate Professor of English*
A. B., Wellesley College; M. A., Western Reserve University; Ph. D., Radcliffe.

GERALDINE NEVADA PFAUS, A. B. *Communication*
A. B., Youngstown University.

JAMES EMERY PHILLIPS, M. S. *Metallurgical Engineering*
A. B., Youngstown University; M. S., Westminster College. Additional graduate study: University of Akron; University of Pittsburgh.

PERCY CALVIN PICKARD, A. B. *Assistant Professor of Accounting*
A. B., Ohio University. Graduate study: Fenn College.

WILLIAM AUGUSTUS PICKENS, A. B. *Business Organization*
A. B., Youngstown University.

MARVIN DEKALB PIERCE, III, M. A. *Assistant Professor of English*
A. B., Washington and Lee University; M. A., University of Georgia. Additional graduate study: University of Virginia.

WILLIAM PODOLL, JR., M. S. *Instructor in Health Education and Physical Education*
B. S. in Ed., Youngstown University; M. S., University of Illinois.

FRANK C. POLITE, A. B. *Communication*
A. B., Youngstown University. Graduate study: State University of Iowa.

JOSEPH NICHOLAS POLITO *Italian*
Diploma di Magistero, Royal Conservatory of Music, Naples. Additional study: Youngstown University.

JOHN WESLEY POLLOCK, M. Ed. *Health Education and Physical Education*
B. S., Muskingum College; B. S. in Ed., M. Ed., University of Cincinnati. Additional graduate study: University of Pittsburgh.

LADISLAV ANDREW POTEMRA, M. A. *Assistant Professor of Business Organization and Economics*
B. A., Free Ukrainian University, Munich; M. A., Swiss School of Economics and Business Administration, St. Gall, Switzerland. Additional graduate study: Oxford University.

GEORGE A. POTTS, M. Ed. *Communication*
A. B., Mount Union College; M. Ed., University of Pittsburgh.

JOANN POWELL, M. S. in Ed. *Instructor in Secretarial Studies*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

PAULINE V. POWERS, Ed. D. *Psychology*
B. S. in Ed., Western Reserve University; M. A. in Ed., Ed. D., University of Pittsburgh.

WILLIAM L. POWERS, LL. B. *Assistant Professor of Social Science*
A. B., Princeton University; LL. B., George Washington University.

JOHN JACKSON PRESSLY, B. S. in Ed. — *Art*
B. S. in Ed., Youngstown University.

WEALTHIE BUSH PRINCE, B. S. in Ed. — *Music*
B. S. in Ed., Youngstown University.

JOHN ANTHONY PROSENJAK, M. S. in Ed. — *Mathematics*
B. S. in Ed., Ohio State University; M. S. in Ed., Westminster College. Additional graduate study: Kent State University.

DAVID STEVENS PROVANCE, M. Litt. — *Assistant Professor of Accounting and Business Organization*
B. S., Grove City College; M. Litt., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

DAVID L. QUINBY, M. A. — *Instructor in Psychology*
A. B., Youngstown University; M. A., University of Denver.

CHARLES WADE RARIDON, M. A. — *Assistant Professor of Music*
A. B., M. A., State University of Iowa. Additional graduate study: State University of Iowa.

WILLIAM LOUIS REALI, B. S. — *Accounting*
B. S., St. Vincent College. Graduate study: Western Reserve Univeristy. C. P. A., State of Ohio.

LOUIS REED, B. A. — *Health Education and Physical Education*
B. A., Maryville College.

EDWARD REES, LL. B. — *Assistant Professor of Business Organization and Political Science*
Ph. B., Brown University; LL. B., Youngstown University.

ATHENS BENNETT REESE, M. Ed. — *Education*
B. S. in Ed., A. B., Youngstown University; M. Ed., University of Pittsburgh. Additional graduate study: University of Pittsburgh; University of Southern California.

EDWARD THOMAS REILLY, M. B. A. — *Associate Professor of Business Organization*
B. S. in B. A., Youngstown University; M. B. A., Western Reserve University. Additional graduate study: Western Reserve University.

LAVERNE REILLY, B. S. — *Instructor in Health Education and Physical Education*
R. N., Youngstown Hospital Association; B. S., Youngstown University. Graduate study: Western Reserve University.

RICHARD THOMAS REZEK, M. Ed. — *Social Science*
B. A., Heidelberg College; M. Ed., Kent State University.

LEONARD T. RICHARDSON, D. Univ. — *Associate Professor of Ancient Languages and Modern Languages*
B. A., Aurora College; M. A., University of Chicago; Docteur de l'université, Grenoble.

VICTOR ANTHONY RICHLEY, M. S. in E. E. — *Assistant Professor of Electrical Engineering*
B. E., Youngstown University; M. S. in E. E., University of Akron.

CLEVE WILSON RICKSECKER, Ed. D. — *Assistant Professor of Mathematics*
Ph. B., A. M., College of Wooster; Ed. D., University of Pittsburgh.

MARY PFINGSGRAFF RIGO, M. Litt. — *Instructor in German*
B. S. in. Ed., Kent State Unversity; M. Litt., University of Pittsburgh.

BRUCE THOBURN RILEY, Ph. D. — *Associate Professor of Philosophy and Religion*
B. A., Cornell College; S. T. B., Ph. D., Boston University. Post-doctoral study: Harvard University.

JOHN FREDERICK RITTER, M. S. — *Instructor in Civil Engineering*
B. E., Youngstown University; M. S., Carnegie Institute of Technology.

EDWARD M. ROBERTS, LL. B. — *Business Organization*
B. A., Marietta College; LL. B., Columbia University.

SIDNEY I. ROBERTS, Ph. D. — *Associate Professor of History*
B. S., City College of New York; M. A., Columbia University; Ph. D., Northwestern University.

HELEN H. ROBERTSON, M. Ed. — *Education*
B. S. in Ed., Ohio University; M. Ed., University of Pittsburgh.

R. L. ROBINETTE, M. Ed. — *Health Education and Physical Education*
B. S. in Ed., Ohio University; M. Ed., University of Pittsburgh.

HELEN BROWNE ROBY, B. S. in Ed. ..... *Merchandising*
B. S. in Ed., Youngstown University. Graduate study: Westminster College.

JUANITA GIBBA RODERICK, M. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

ELMER EDWARD RODGERS, M. S. in L. S. ..... *Reference Librarian with Rank of Instructor*
A. B., Youngstown University; M. S. in L. S., Western Reserve University.

FRED J. ROLLASON, M. Litt. ..... *Health Education and Physical Education*
B. S., Waynesburg College; M. Litt., University of Pittsburgh. Additional graduate study: Westminster College.

FRED ROSENBERG, M. A. ..... *Instructor in Music*
A. B., Cleveland Institute of Music; M. A., Western Reserve University.

DAVID C. ROSENFIELD, M. A. ..... *Instructor in Biology*
A. B., M. A., Brown University. Graduate study: Boston University.

BARBARA GOLDBLUM ROSENTHAL, M. Litt. ..... *Communication*
B. A., University of Michigan; M. Litt., University of Pittsburgh.

ANTHONY J. ROSS, A. B. ..... *History*
A. B., Youngstown University.

DOMINIC ROSSELLI, M. Ed. ..... *Assistant Professor of Health Education and Physical Education*
B. S. in Ed., Geneva College; M. Ed., University of Pittsburgh.

PAUL ROSSI, M. Ed. ..... *Music*
B. M. E., Westminster College; M. Ed., Kent State University.

MARVIN GENE ROTH, M. B. A. ..... *Merchandising*
B. S. in B. A., Bowling Green State University; M. B. A., Toledo University.

CHARLES C. RUDIBAUGH, JR., B. S. in Comm. ..... *Business Organization*
B. S. in Comm., Grove City College. C. P. C. U.

CHESTER E. RUFH, M. S. ..... *Biology*
B. S., Youngstown University; M. S., Florida State University.

PATRICIA SABO, B. S. in Ed. ..... *Health Education and Physical Education*
B. S. in Ed., Kent State University.

VISHNU PRAKASH SAKSENA, Ph. D. ..... *Assistant Professor of Biology*
B. Sc., M. Sc., Banaras Hindu University, India; Ph. D., University of Oklahoma.

IRENE WARKENTIN SAMPLE, Ed. D. ..... *Music*
B. A., Tabor College; M. R. E., Southwestern Baptist Seminary; M. S. M., Southern Baptist Seminary; Ed. D., Columbia University.

PAUL THOMAS SAVKA, M. S. in Ed. ..... *Mathematics*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Ohio State University.

GARY EUGENE SCAVNICKY, A. B. ..... *Spanish*
A. B., Youngstown University. Graduate study: University of Illinois.

ANNE BERNARD SCHAFER, M. A. ..... *Instructor in Communication*
B. S., in Ed., Kent State University; M. A., Ohio State University.

WILLIAM H. SCHAFER, M. B. A. ..... *Advertising*
B. A., Westminster College; M. B. A., Babson Institute of Business Administration.

NELS SCHEEL, M. B. A. ..... *Accounting*
A. B., Youngstown University; M. B. A., University of Pennsylvania. C. P. A., State of Ohio

JOHN L. SCHEETZ, B. S. in B. A. ..... *Instructor in Accounting*
B. S. in B. A., Youngstown University. C. P. A., State of Ohio.

FRANK LAWRENCE SCHERMER, JR., LL. B. ..... *Communication*
A. B., B. S. in Ed., LL. B., Youngstown University.

SISTER MARY REGINA SCHNEIDER, M. S. ..... *Natural Science*
A. B., M. S., Catholic University of America. Additional graduate study: John Carroll University; Western Reserve University; Kent State University.

HILDEGARD KAST SCHNUTTGEN ..... *Circulation Librarian with Rank of Instructor*
Examination, Humanistisches Gymnasium; Examination, Buchereischule.

GEORGE HENRY SCHOENHARD, Ed. D. ..... *Education*
A. B., Youngstown University; M. Litt., Ed. D., University of Pittsburgh.

WERNER WILLIAM SCHULTZ, A. M. ..... *Assistant Professor of English*
A. B., Hiram College; A. M., Oberlin College.

PAUL WILLIAM SCHUMACHER, M. Litt. — *Social Science*
A. B., Hiram College; M. Litt., University of Pittsburgh.

WILLIAM JOSEPH SCHWAGER, B. E. — *Industrial Engineering*
B. E., Youngstown University.

ROBERT W. SCOLLON, Ph. D. — *Associate Professor of Psychology*
B. A., M. S., Ph. D., Pennsylvania State University.

KEITH BURTON SCOTT, A. B. — *Communication*
A. B., Youngstown University. Graduate study: Western Reserve University.

EUGENE DODD SCUDDER, Ph. D. — *Professor of Chemistry*
A. B., A. M., Ph. D., Indiana University

MARIE GRIMM SCUDDER, M. Ed. — *Communication*
B. S. in Ed., Kent State University; M. Ed., University of Pittsburgh.

MARY ANN SEBESTYEN, B. S. in Ed. — *Instructor in Secretarial Studies*
B. S. in Ed., Youngstown University.

STEPHEN A. SEDLACKO, M. Ed. — *Social Science*
B. S. in Ed., Kent State University; M. Ed., Ohio University. Additional graduate study: Westminster College; University of Pittsburgh.

MARTIN P. SEIDEL, M. S. — *Chemistry*
B. S., College of St. Thomas; M. S., Carnegie Institute of Technology. Additional graduate study: Carnegie Institute of Technology.

BETTY MORIE SEIFERT, M. Litt. — *Instructor in Merchandising*
A. B., M. Litt., University of Pittsburgh.

HUGH ALLEN SHADDUCK, Ph. D. — *Assistant Professor of Chemical Engineering*
B. S., Michigan State University; Ph. D., University of Chicago.

VIRGINIA WILLIAMS SHALE, M. A. — *Instructor in Communication*
B. A., M. A., Ohio Wesleyan University.

SISTER MARY ROSE SHEA, M. A. — *Education*
B. S. in Ed., Youngstown University; M. A., Notre Dame University.

DONALD MICHAEL SHELLEY, B. S. in Ed. — *Communication*
B. S. in Ed., Youngstown University.

ALEXANDER SHEPPA, B. S. in Ed. — *Merchandising*
B. S. in Ed., Kent State University.

WILLIAM ALVON SHIPMAN, Ed. D. — *Associate Professor of Education*
B. S. in Ed., M. A., Kent State University; Ed. D., Western Reserve University.

G. HOWARD SHREVE, M. Ed. — *Biology*
B. S. in Ed., M. Ed., Kent State University. Additional graduate study: Kent State University.

JOHN SHUSHEREBA, M. A. — *Psychology*
A. B., M. A., Kent State University.

EDWARD O. SIEBENHAR, M. A. — *Communication*
B. S. M., Baldwin-Wallace College; M. A., Western Reserve University. Additional graduate study: Western Reserve University.

PHIL S. SIGLER, M. A. — *Instructor in History*
A. B., Youngstown University; M. A., Ohio State University.

MATTHEW SIMAN, M. S. in E. E. — *Assistant Professor of Electrical Engineering*
B. S. in E. E., M. S. in E. E., Case Institute of Technology. Additional graduate study: University of Pittsburgh.

PHILLIP ALFRED SINCLAIR, M. S. — *Assistant Professor of Business Organization*
B. S., Ohio State University; M. S., Northwestern University. Additional graduate study: University of Toledo.

ALVIN WILSON SKARDON, JR., Ph. D. — *Associate Professor of History*
A. B., College of Charleston; M. A., Ph. D., University of Chicago.

MORRIS SLAVIN, Ph. D. — *Associate Professor of History*
B. S. in Ed., Ohio State University; M. A., University of Pittsburgh; Ph. D., Western Reserve University.

ADRIAN M. SLIFKA, A. B. — *Communication*
A. B., St. Vincent College.

FRANK T. SMERCANSKY, M. S. in Ed. — *History*
A. B., Youngstown University; M. S. in Ed., Westminster College.

AGNES MONROE SMITH, M. A. — *History and Social Science*
A. B., Hiram College; M. A., University of West Virginia. Additional graduate study: Western Reserve University.

EDNA GRIFFIS SMITH, M. M. — *Music*
B. M. Ed., Ohio Wesleyan University; M. M., Indiana University.

GRAYCIE CAMPBELL SMITH, M. S. W. — *Psychology*
A. B., Youngstown University; M. S. W., University of Pittsburgh. Additional graduate study: University of Pittsburgh.

JOSEPH EARL SMITH, Ph. D. — *Professor of Economics*
A. B., Oxford University; M. A., University of Nebraska; Ph. D., Wallas College, London.

MARY BOYER SMITH, M. A. — *Assistant Professor of Health Education and Physical Education*
A. B., Hiram College; M. A., Ohio State University.

SISTER MARY LEAH SMITH, M. S. in Ed. — *History*
B. S. in Ed., Youngstown University. Graduate study: Marquette University.

PAUL EWING SMITH, A. M. — *Education*
A. B., College of Wooster; A. M., Columbia University. Additional graduate study: Columbia University; University of Colorado.

PAUL HANDRIX SMITH, LL. B. — *Business Organization*
LL. B., Youngstown University.

WILBUR R. SMITH, Ph. M. — *Geology*
B. S., Ohio University; Ph. M., University of Wisconsin.

JOHN WINFIELD SMYTHE, JR., A. B. — *Instructor in Economics*
A. B., Youngstown University. Graduate study: Northwestern University.

MICHAEL SOLOMON, M. S. — *Assistant Professor of Civil Engineering*
B. E., Youngstown University; M. S., University of Akron.

LAWRENCE FREDERICK SONNTAG, JR., M. A. — *History*
A. B., Centre College; M. A., Indiana University.

ROBERT JOHN SOROKACH, M. S. — *Assistant Professor of Mechanical Engineering*
B. E., Youngstown University; M. S., University of Akron.

WESLEY ATWOOD SOWLE, Ph. D. — *Communication*
A. B., Boston University; M. A., Ph. D., University of Pittsburgh.

LEONARD B. SPIEGEL, Ph. D. — *Associate Professor of Chemistry*
B. A., New York University; M. S., Ph. D., Florida State University.

CYNTHIA O'NEILL SPIKER, B. S. in Ed. — *Secretarial Studies*
B. S. in Ed., Youngstown University.

SISTER M. GERMAINE STARON, Mus. M. — *Music*
Mus. B., Youngstown University; Mus. B., Notre Dame University.

SISTER M. VISITATION STAUDT, M. S. — *Biology*
B. S., Notre Dame College; M. S., Villanova University.

ARTHUR ROBERT STEISKAL, A. B. — *History and Economics*
A. B., Youngstown University. Graduate study: Ohio Northern University.

ELIZABETH ION STERENBERG, Ph. D. — *Associate Professor of Political Science*
B. A., Knox College; A. M., Radcliffe College; Ph. D., University of Chicago.

ANTHONY THOMAS STEVENS, A. M. — *Communication*
A. B., Youngstown University; A. M., Columbia University.

VICTOR E. STOLTZFUS, M. A. — *Instructor in Sociology*
B. A., B. D., Goshen College; M. A., Kent State University.

HILDA GIBSON STONE, A. B. — *Communication*
A. B., Otterbein College.

NICHOLAS STURM, M. S. — *Assistant Professor of Biology*
B. S., West Virginia Wesleyan College; M. S., Purdue University. Additional graduate study: University of Texas; Purdue University.

ANN VAGNOZZI SULLIVAN, M. S. in Ed. — *Communication*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

DONALD RICHARD SULLIVAN, M. Ed. — *Communication*
B. S., M. Ed., Kent State University. Additional graduate study: Kent State University.

LUCY DENNISON SUTTON, M. F. A. — *Education*
B. S. in Ed., Ohio State University; M. F. A., University of Guanajuato, Mexico. Additional graduate study: University of Guanajuato, Mexico.

DONALD ALLAN SWANEY, M. B. A. — *Business Organization*
B. E., Youngstown University; M. B. A., University of Pittsburgh.

JOSEPH FRANKLIN SWARTZ, Ph. D. — *Professor of Education*
B. A., Bridgewater College; M. Ed., Ph. D., University of Pittsburgh.

FRANK J. TARANTINE, M. S. in E. — *Assistant Professor of Mechanical Engineering*
B. E., Youngstown University; M. S. in E., University of Akron. Additional graduate study: Carnegie Institute of Technology.

SUSAN E. TAYLOR, M. S. in Ed. — *Social Science*
B. S. in Ed., Kent State University; M. S. in Ed., Westminster College.

PHILIP F. TEAR, B. A. — *English*
B. A., Oberlin College.

LULU WOODRUTT TEETER, M. A. — *Communication*
A. B., Mount Union College; M. A., Kent State University.

DUMITRU TEODORESCU, Ph. D. — *Assistant Professor of Business Organization*
B. S., A. M., L. M., Ph. D., University of Bucharest; M. S. in L. S., Western Reserve University.

JOHN PAUL TERLECKI, M. S. in Ed. — *Metallurgical Engineering*
A. B., Youngstown University; M. S. in Ed., Westminster College.

CLARA BRICE THOMAN, M. A. — *Instructor in Latin*
A. B., Vassar; M. A., Bryn Mawr. Additional graduate study: Bryn Mawr.

RAYMOND HERBERT THOMAN, M. S. in Ed. — *Communcation*
A. B., Juniata College; M. S. in Ed., Westminster College.

CHARLOTTE THOMAS, M. A. — *Natural Science*
B. S. in Ed., M. A., Kent State University.

GRIFFITH V. THOMAS, LL. B. — *History*
A. B., LL. B., Youngstown University.

NELSON GILLMER THOMPSON, M. S. — *Mathematics*
A. B., Hiram College; M. S., Northwestern University. Additional graduate study: Purdue University.

ROBERT JOSEPH THOMPSON, B. S. in Ed. — *Health Education and Physical Education*
A. B., Ohio Wesleyan University; B. S. in Ed., Youngstown University. Graduate study: Westminster College.

MARGUERITE TIGUE, A. B. — *Mathematics*
A. B., Lake Erie College.

JOSEPH WILLIAM TOTI, LL. B. — *Social Science*
A. B., LL. B., Youngstown University.

ROBERT C. TRUCKSIS, M. S. in Ed. — *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

SISTER MARY BARBARA TURK, M. S. — *Biology*
B. S. in Ed., Youngstown University; M. S., University of Notre Dame. Additional graduate study: University of Nebraska.

MAE DICKSON TURNER, M. S. in Ed. — *Instructor in Secretarial Studies*
A. B., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Keit State University; Western Reserve University.

MARGARET WHITE UNGER, M. Ed. — *Health Education and Physical Education*
R. N., Youngstown Hospital Association; B. S. in Ed., Youngstown University; M. Ed., Kent State University.

MOCTEZUMA SERGIO URISTA, M. D. — *Biology*
B. S., Ateneo Fuente College, Mexico; M. D., National University of Mexico.

PATRICK F. VACCARO, B. S. in Ed. — *Art*
B. S. in Ed., Youngstown University.

CLYDE V. VANAMAN, Ed. D. — *Education*
B. S., Mount Union College; A. B., Youngstown University; M. Ed., Kent State University; Ed. D., Western Reserve University.

HELEN SLOTTA VAN GORDER, M. A. — *Instructor in Communication*
B. A., M. A., Pennsylvania State University. Additional graduate study: Loyola College, Montreal.

DUONG VAN MINH, M. S. — *Mathematics*
B. S., University of the Philippines; M. S., Corneli University.

NICHOLAS VANSUCH, A. B. — *Philosophy and Russian*
A. B., Columbia University. Diploma, St. Vladimir's Orthodox Theological Seminary.

PAUL DOYLE VAN ZANDT, Ph. D. — *Assistant Professor of Biology*
A. B., Greenville College; M. S., University of Illinois; M. S. P. H., Ph. D., University of North Carolina. Post-doctoral study: University of North Carolina.

MICHAEL VARKONDA, Ed. D. — *Education*
B. A., University of Dubuque; M. S. in Ed., Westminster College; Ed. D., Western Reserve University.

IRVIN AUGUST VARRAUX, B. S. — *Industrial Engineering*
B. S., Carnegie Institute of Technology.

JAMES ANTHONY VECHIARELLA, B. S. in Ed. — *Instructor in Geography*
B. S. in Ed., Youngstown University.

BERNARD J. VOJTKO, M. S. in E. — *Assistant Professor of Electrical Engineering*
B. E., Youngstown University; M. S. in E., University of Akron.

PETER W. VON OSTWALDEN, Ph. D. — *Assistant Professor of Chemistry*
Doctorandum, University of Graz, Austria; M. A., Ph. D., Columbia University.

LEWIS HOCH WAGENHORST, Ph. D. — *Education*
A. B., Franklin and Marshall College; M. A., Ph. D., Columbia University.

THOMAS BOOTH WAGNER, D. S. C. — *Health Education and Physical Education*
D. S. C., Ohio College of Chiropody.

JOHN E. WALES III, B. S. in E. E. — *Associate Professor of Military Science*
B. S. in E. E., Virginia Military Institute. Colonel, United States Army.

CAROLYN J. WALKER, B. S. in Ed. — *Health Education and Physical Education*
B. S. in Ed., Youngstown University.

KENNETH RALPH WALLACE, M. A. — *Psychology*
B. A., M. A., University of Akron. Additional graduate study: Kent State University; Ohio State University.

JAMES HENRY WALLS, A. B. — *Advertising*
A. B., Dartmouth College. Graduate study: Harvard University.

ROBERT G. WALSH, A. B. — *Communication*
A. B., Youngstown University.

WILLIAM EDWARD WALSH, M. B. A. — *Instructor in Accounting and Business Organization*
B. S. in B. A., Youngstown University; M. B. A., Western Reserve University.

JOHN FREDERICK WALTER, M. Ed. — *Assistant Professor of Education*
B. S., Kent State University; M. Ed., University of Pittsburgh.

KENNETH D. WEBER, M. A. — *Education*
B. S. in Ed., M. A., Ohio State University. Additional graduate study: Ohio State University; Ohio University.

WILLARD L. WEBSTER, B. S. — *Associate Professor of Biology*
B. S., Geneva College. Graduate study: University of Pittsburgh.

SISTER MARY EDITH WEIR, M. A. — *Education*
B. S. in Ed., M. A., St. John College. Additional graduate study: Catholic University of America; University of Detroit.

SISTER ANNE LOUISE WELSH, M. Litt. — *Mathematics*
A. B., Youngstown University; M. Litt., University of Pittsburgh. Additional graduate study: Marquette University.

EMILIE WIELUNER WELTMAN, Ph. D. — *Instructor in German*
Ph. D., University of Frankfurt. Previous study: University of Berlin; University of Jena.

WILLIAM R. WHAN, M. S. in Ed. — *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

HOWARD V. WHARTON, M. S. in Ed. — *Business Organization*
B. A., M. S. in Ed., Westminster College.

KENNETH LEE WHIPKEY, M. A. — *Assistant Professor of Mathematics*
B. A., M. A., Kent State University. Additional graduate study: University of Colorado; Michigan State University.

NELL GLASER WHIPKEY, M. S. in Ed. — *Assistant Professor of Mathematics*
A. B., Brown University; M. S. in Ed., Westminster College.

KENNETH JORDAN WHITE, B. S. in B. A. ..... *Accounting*
B. S. in B. A., Youngstown University.

GEORGE MILO WILCOX, Ph. D. ..... *Professor of Education*
B. A., Cornell College; M. A., State University of Iowa; Ph. D., Columbia University.

RUTH STRAHL WILDER, M. Ed. ..... *Education*
B. S., Ohio University; M. Ed., Westminster College.

GERALD LEE WILLIAMS, B. S. in B. A. ..... *Communication*
B. S. in B. A., Youngstown University. Graduate study: Kent State University.

NATHANIEL HURT WILLIAMS, A. B. ..... *Accounting*
A. B., Youngstown University. C. P. A., State of Ohio.

PAULINE PHELPS WILLIAMSON, B. S. in Ed. ..... *Instructor in Secretarial Studies*
B. S. in Ed., Ohio State University. Graduate study: Columbia University.

GEORGE A. WINSEN, M. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College.

SISTER MARY TERESA WINSEN, B. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University. Graduate study: Catholic University of America; University of Notre Dame.

MYRON JAMES WISLER ..... *Music*
Pupil of Wilbur Keifer of the U. S. Marine Band, Byron Galbraith of the Pittsburgh Symphony Orchestra and Roy Knapp, Chicago.

ROBERT WILLIAM WITT, M. S. ..... *Assistant Professor of Music*
B. S., M. S., Juilliard School of Music. Additional graduate study: Western Reserve University; Ohio State University.

INGA SOLEY WORLEY, Ph. D. ..... *Associate Professor of Biology*
B. S. in Ed., M. A., Ph. D., University of Wisconsin.

JAMES P. WRENN, B. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University.

GEORGE YEANY, M. S. in Ed. ..... *Education*
B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College. Additional graduate study: Westminster College; Kent State University.

RALPH EARL YINGST, Ph. D. ..... *Assistant Professor of Chemistry*
B. A., University of Chicago; B. S., Lebanon Valley College; Ph. D., University of Pittsburgh.

WARREN MELVIN YOUNG, M. S. ..... *Instructor in Astronomy*
B. S., Case Institute of Technology; M. S., Ohio State University. Additional graduate study: Ohio State University.

BERNARD JAMES YOZWIAK, Ph. D. ..... *Professor of Mathematics*
B. A., Marietta College; M. S., Ph. D., University of Pittsburgh.

RALPH ZERBONIA, M. Ed. ..... *Business Organization*
B. S. in Ed., Youngstown University; M. Ed., University of Pittsburgh.

RONALD VERNON ZETTERQUIST, M. S. in Ed. ..... *Merchandising*
B. S. in B. A., Youngstown University; M. S. in Ed., Westminster College.

AUDREY ZOGOREC, M. A. ..... *Communication*
A. B., Youngstown University; M. A., Florida State University.

JERRY J. ZUPP, JR., B. S. in Ed. ..... *Secretarial Studies*
B. S. in Ed., Youngstown University. Graduate study: Westminster College.

Lecturers

JOHN ALLAN ALTDOERFFER, M. D. ..... *Guest Lecturer in Psychology*
M. D., Northwestern University.

ANTHONY AMEDURI ..... *Lecturer in Business Organization*
Youngstown University. The Mahoning Valley Supply Company.

WILLIAM BEIL ..... *Lecturer in Business Organization*
Youngstown University. The First Federal Savings and Loan Company.

SIDNEY M. BERKOWITZ, Ph. D. ..... *Guest Lecturer in Psychology*
B. A., University of Cincinnati; Rabbi, D. D., Hebrew Union College; Ph. D., Cambridge University. Post-doctoral study: University of Paris (the Sorbonne); Oxford University.

HAROLD CHEVLEN, M. D. ..... *Guest Lecturer in Psychology*
B. M., M. D., University of Minnesota.

S. W. CHIASSON, M. D. ..... *Guest Lecturer in Psychology*
M. D., C. M., McGill University.

VERNON ERHARDT ..... *Lecturer in Health Education and Physical Education*
Erhardt Dance Studio.

PAXTON LANE JONES, M. D. ..... *Guest Lecturer in Psychology*
M. D., Duke University.

ALBERT LOUIS LINDER, B. D. ..... *Guest Lecturer in Psychology*
Ph. B., Denison University; B. D., Colgate-Rochester Divinity School.

LEO NATHANIEL MASON ..... *Lecturer in Health Education and Physical Education*
Former City Tennis Champion, Youngstown. The United States Steel Corporation.

JOHN NORMAN McCANN, M. D. ..... *Guest Lecturer in Biology*
B. S., M. D., Georgetown University. Post-doctoral study: Harvard University; University of Michigan.

JOHN J. McDONOUGH, M. D. ..... *Guest Lecturer in Psychology*
B. S., St. John College; M. D., Loyola University.

JAY RODKEY ..... *Lecturer in Tax Accounting*
Assoc. in Bus. Adm., Youngstown University. The Youngstown Sheet and Tube Company.

PAUL E. STEVENS, LL. B. ..... *Guest Lecturer in Psychology*
LL. B., Ohio State University.

EARL HUDSON YOUNG, M. D. ..... *Guest Lecturer in Psychology*
B. S., M. D., University of Pittsburgh.

INDEX

Abbreviations used in course descriptions: see **Course numbering system and abbreviations.**
Absence from classes and examinations, 58.
Accounting, 150; curriculum, 161.
Accreditation, 4.
Activity fee for part-time students, for R. O. T. C. students: see **Special fees.**
Administrative staff, 240.
Admission counsellors: see **Administrative staff.**
Admission from other institutions, 41.
Admission to the Upper Division: see **Candidacy for a degree.**
Admission to Youngstown University, 41.
Advanced Placement high school courses, evaluation of, 42.
Advanced standing, admission to, 42.
Dana School of Music, 209.
Advertising, 152; curriculum, 162.
Advisement: see **Scheduling courses.**
Advisers, faculty: see **Scheduling courses.**
Advisers, religious: see **Chaplains;** see also **Religious opportunities.**
Alumni, 21; Association, 21; Dana School of Music, 207; library privileges of: see **Libraries.**
American literature: see **English.**
American studies, 70.
Ancient languages and literature, 71.
Anthropology: see **Sociology.**
Application for admission: to Youngstown University, 41; to Dana School of Music, 209; to School of Education, 170; to Upper Division, 53.
Application for graduation: see **General graduation requirements other than courses.**
Applied music, 213.
Area general course requirements for graduation, 45.
Art, 71; curriculum, 73.
Art education, curriculum, 181.
Art exhibits, 24.
Assembly, 17.
Assistantships, student, 39.
Associate in Business Administration, 149.
Astronomy, 74.
Athletics, director of: see **Administrative staff;** intercollegiate, 19.
Attendance: at classes; at examination; reduction of credits for irregular: see **Absence from classes and examinations;** at music recitals: see **Musical activities.**
Audited courses, fees for: see **Fees and expenses.**
Auditors, 51.
August graduates: see **Commencement exercises.**
Awards and prizes, 28.

Baccalaureate service: see **Commencement exercises.**
Bachelor of Arts, 65; graduation requirements, 66; graduation requirements for registered nurses, 134; high school preparation for, 67; major fields possible, 65.
Bachelor of Arts and a provisional high school certificate, curriculum for, 183.
Bachelor of Arts with major in the history and literature of music, 212.
Bachelor of Engineering, 187; curriculums leading to, 198; graduation requirements, 187; high school preparation for, 188; fields possible, 184.
Bachelor of Music, 210; curriculums, 232; graduation requirements, 210; major subjects possible, 204; pre-college preparation for, 210.
Bachelor of Science, 66; graduation requirements, 66; graduation requirements for registered nurses, 134; high school preparation for, 67; major fields possible, 66.
Bachelor of Science and a provisional high school certificate, curriculum for, 181.
Bachelor of Science in Business Administration, 147; curriculums, 160; high school preparation for, 147; majors possible, 147.
Bachelor of Science in Education, 66; 171; approval of candidacy, 170; graduation requirements, 171; high school preparation for, 172.
Bacteriology: see **Biology.**
Band, concert and marching: see **Ensembles and Musical activities.**
Basic general course requirements for graduation, 45.
Bassoon, 224; curriculum, 232.
Bible: see **Humanities; Philosophy and Religion.**
Biology, 74.
Board and room: see **Student housing.**
Bookstore, 16.
Botany: see **Biology.**
Brass ensemble: see **Ensembles and Musical activities.**
Buildings and other facilities, 10.
Business education: see **School of Education.**
Business, general, combined major in: see **Business organization;** curriculum, 162.
Business manager, assistant business manager: see **Administrative staff.**
Business organization, 154.

Cafeteria: see **Dining facilities.**
Calendar, academic, 5.
Campus development plan, 13.
Candidacy for a degree, 53.
Catalog, editor of: see **Administrative staff.**
Catalog governing graduate requirements: see **General requirements for graduation.**
Cello, 220; curriculum, 232.
Central campus: see **Buildings and other facilities.**
Change in major: see **Candidacy for a degree.**
Change of registration, 52; fee for: see **Special fees.**
Chapel, 17.
Chaplains: see **Administrative staff.**
Chemical engineering, curriculum, 198.
Chemistry, 78; curriculum, 81.
Choir, concert: see **Ensembles and Musical activities.**
Chorus, Dana: see **Ensembles and Musical activities.**
Civil engineering, curriculum, 199.
Clarinet, 222; curriculum, 232.
Class hour, definition of, 50.
Classical languages and literature, combined major in, 71.
Class rank, 53.
College of Arts and Sciences, 8, 65.

Combined courses: for pre-law students: see **Pre-law study**; for pre-medical students, 69.
Combined majors: see **American studies; Classical languages and literature; Commercial art: Earth science; General business; Humanities; Management; Pre-medical study and allied fields; Public administration; Public relations; Social studies; and Traffic and transportation management.**
Comma and hyphen used between course numbers: see **Course numbering system and abbreviations.**
Commencement exercises, 49.
Commercial art, combined major in: see **Advertising**; curriculum, 162.
Committees of the faculty and staff, 243.
Communication, courses in, 81; requirement: see **Basic general course requirements for graduation.**
Composition: see **Communication; English; Foreign languages and literatures.**
Composition (music): see **Theory and composition.**
Computing center, director of: see **Administrative staff.**
Condensed table if courses required for graduation, 46.
Conducting, 231.
Counseling and guidance, 17.
Counselors, admission: see **Administrative staff.**
Course levels: see **Course numbering system and abbreviations and Upper and Lower Division courses**; requirement for a degree: see **General graduation requirements other than courses.**
Course numbering system and abbreviations, 64.
Credit by equivalency or examination, fee for: see **Special fees.**
Credit for seniors taking 100-level courses: see **Upper and Lower Division courses.**
Credit hour, definition of: see **Class hour.**
Credit hours in absentia, earning final: see **Pre-medical study and allied fields** and **Residence requirement.**
Credit/Time ratio, 50.
Cultural opportunities, 16.
Curriculums: see **individual courses of study.**
Curriculums to meet special requirements, 49.
Curve in grading: see **Grading system.**

Dana Artists Series: see **Musical activities.**
Dana Chorus: see **Ensembles** and **Musical activities.**
Dana School of Music, 10, 204.
Dean of Men, Office of, 20.
Dean of Women, Office of, 20.
Deans: see **Administrative staff.**
Dean's List, 57.
Deficiencies in pre-college courses, means of removing: see **Relation of high school courses to University graduation.**
Degree, candidacy for, 53.
Degree objective, procedure for changing: see **Candidacy for a degree.**
Degrees granted by Youngstown University, 8.
Departments of the College of Arts and Sciences, 65.
Development Plan, Campus, 13.
Dietetics: see **Home economics.**
Dining facilities, 20.
Dishonesty in a course: see **Grading system.**
Dismissal, honorable, 58.
Divisions of the College of Arts and Sciences, 64.
Divisions, Upper and Lower, 53.
Drama, literature courses in: see **English** and **Foreign languages and literatures.**
Dramatics, 24: see also **Speech and dramatics.**
Dropping of courses: see **Change of registration.**
Dual teaching curriculum, 181.

Earth, science, combined major in, 82; curriculum, 83.
Economics, 83.
Education: see **School of Education.**
Electrical engineering, curriculum, 200.
Elementary and secondary education: see **School of Education.**
Elementary education, 177; curriculum, 182.
Emeriti, faculty members: see **Faculty.**
Employment, part-time: see **Self-help.**
Engineering: see **William Rayen School of Engineering.**
English, 84; proficiency in, 56; requirement for Bachelor of Arts, 68; requirement for Bachelor of Engineering, 189; requirement for Bachelor of Science, 68; requirement for Bachelor of Science in Education, 68, 173; teaching of, 85.
English for foreign students: see **Communication.**
English, improvement of: see **General education.**
Ensembles, 214.
Entering a course, final date for: see **Registration.**
Entrance requirements: see **Admission to Youngstown University** and **Table of courses required for graduation.**
Evening classes, 8.
Examinations, fees for irregular: see **Special fees**; final dates of, 5; for seniors, 5.
Extracurricular activities, participation in, suspension from: see **Student activities.**
Extra hours, credit: see **Student load.**

Faculty, 245.
Fees and expenses, 58; for music students, 208.
Final date for entering a course: see **Registration.**
Flute, 221; curriculum, 232.
Food and nutrition: see **Home economics.**
Foreign language, proficiency in a, 69.
Foreign language, requirements: for A. B. degree, 68; for B. S. degree, 68; for Mus. B. degree with voice major, 233.
Foreign languages and literatures: see **French, German, Hebrew, Italian, Latin, Russian** and **Spanish**: literature in translation: see **Humanities.**

Foreign students, English for: see **Communication.**
Forestry: see **Pre-forestry.**
Fraternities: see **University-recognized organizations.**
French, 87.
French horn, 225; curriculum, 232.
Freshman Days, 52.
Freshman in liberal arts undecided about major: see **Freshman registration.**
Freshman registration, 52.
Full-time status, 53.

General business, combined major in: see **Business organization: curriculum,** 162.
General education, 175.
General Education Development Test credits, 42.
General graduation requirements other than courses, 43.
General information about the University, 7.
General program of the University, 8.
General regulations, 49.
General requirements and regulations, 41.
General requirements for graduation, 43.
General science: see **Natural science.**
Geography, 88.
Geology, 90.
German, 90; examination in scientific: see **Proficiency in a foreign language.**
Government: see **Political science.**
Governmental organizations, student: see **University-recognized organizations.**
Grade, appeal of final: see **Grading system.**
Grade reports, 56.
Grade requirements and probation, 56; see also **Point index and scholastic standing** and **General graduation requirements other than courses.**
Grades in repeated courses: see **Repetition of courses.**
Grading system, 54.
Graduate record examination: see **General graduation requirements other than courses**; fee: see **Special fees.**
Graduate scholarships, 39.
Graduating **in absentia**: see **Pre-forestry; Pre-law study; Pre-medical study and allied fields.**
Graduation: application, 43; candidacy, 53; exercises: see **Commencement exercises**; fee: see **Special fees**; honors, 57; residence requirement: see **General graduation requirements other than courses.**
Graduation requirements: general, 43; College of Arts and Sciences, 66; Dana School of Music, 210; School of Business Administration, 147; School of Education, 171; William Rayen School of Engineering, 187.
Greek, 92.
Guidance and testing program, 18.
Guidance examinations, 43.

Harpsichord, 216.
Health, director of: see **Administrative staff.**
Health, education and physical education, 92; curriculum, 100; requirement: see **Basic general course requirements for graduation.**
Health service, 18.
Hebrew, 102.
High school courses and University graduation, 41.
High-school-level courses offered: mathematics, 110; natural science, 118.
Historical sketch of the University, 7.
History, 103.
History of music and literature of music, 230.
Home economics, 106; preparation for teaching of, 106.
Honorable dismissal: from another institution, 42; from Youngstown University, 58.
Honorary societies: see **University-recognized organizations.**
Honor point system, 21.
Honor roll, 57.
Honors Day, 57.
Honors, graduation, 57.
Honors seminar, University, 146.
Hospitalization insurance: see **Health service.**
Housing, student, 20.
Humanities, 109; combined major, 109; credit toward other courses, 109.
Hyphen and comma used between course numbers: see **Course numbering system and abbreviations.**

Incomplete course-work: see **Grading system.**
Industrial engineering, curriculum, 201.
Installments, tuition payment by, 62.
Instrument major, curriculum, 232.
Intelligence examinations: see **Guidance and testing program.**
Intercollegiate athletics, 19.
Inter-Fraternity Council, 28.
Interior decorating: see **Art.**
Irregular examinations, fee for: see **Special fees.**
Italian, 110.

Journalism: see **English** and **Business Organization.**
Junior standing: see **Class rank.**

Kindergarten-Primary education, 183.

Laboratories, 13, 184.
Laboratory fees: see **Special fees.**
Laboratory sciences: see **Biology; Chemistry; Geology;** and **Physics.**
Late registration, fee for: see **Special fees.**
Latin, 111.
Law: see **Pre-Law study.**
Levels of courses: see **Course numbering system and abbreviations** and **Upper and Lower Division courses.**
Liberal arts courses: see **College of Arts and Sciences.**
Librarian: see **Administrative staff.**
Libraries, 13; Dana School of Music, 205; loan privileges, 13.
Literature: see **English; Foreign languages and literatures;** and **Humanities.**
Literature of music and history of music, 230.
Load, student, 50.
Loan funds, scholarships, 33.
Lockers, 21; deposit for: see **Special fees.**
Lower Division, admission to, 41; definition of, 53.

Madrigal singers: see **Ensembles** and **Musical activities.**
Major: see individual courses of study and combined majors; change in: see **Candidacy for a degree**; freshman in Liberal arts undecided about: see **Freshman registration**; requirement: see **General graduation requirements other than courses.**
Major and minor fields, 8, 10; see also **College of Arts and Sciences** and individual schools.
Management, combined major in: see **Business organization**; curriculum, 163.
Map of University campus, inside back cover.
Marching Band, physical activity credit for, 215.
Mathematics, 112; high-school-level courses in, 112.
Matriculation fee: see **Admission to Youngstown University** and **Special fees.**
Mechanical engineering, curriculum, 202.
Medical technology, curriculum for: see **Pre-medical study and allied fields.**
Medicine: see **Pre-medical study and allied fields.**
Merchandising, 158; curriculum, 164.
Metallurgical engineering, curriculum, 203.
Metallurgy: see **Chemistry** and **William Rayen School of Engineering.**
Military equipment, deposit and fee: see **Special fees.**
Military science, 113; modifications for students of, 48; student load with: see **Student load.**
Minors: see **General graduation requirements other than courses.**
Modern languages and literature: see **English, French, German, Hebrew, Italian, Russian,** and **Spanish**; literature in translation: see **Humanities.**
Modifications for R. O. T. C. students: see **Military science.**
Music composition, 229; curriculum, 234.
Music, 204; curriculums, 232; ensembles, 214.
Music education, 231; curriculum, 235.
Music history and literature, 230.
Musical activities, 206.

Natural science, 118; applicability of credit, 118.
Neighboring facilities, 15.
Non-credit courses: see **Full-time status**; **Point index**; **Student load**; and **Fees and expenses.**
Normal load of academic work: see **Student load.**
Nurse, head: see **Administrative staff.**
Nursing: pre-nursing; program for the registered nurse: see **Pre-medical study and allied fields**; public school nursing and nursing education, 183.
Nutrition: see **Home Economics.**

Objectives: University, 7; Dana School of Music, 204; William Rayen School of Engineering, 184.
Oboe, 223; curriculum, 232.
Opera: see **Ensembles** and **Musical activities.**
Orchestra, symphony: see **Ensembles** and **Musical activities.**
Organ, 216; curriculum, 232.
Orientation, 119; requirement in: see **Basic general course requirements for graduation.**
Overload: see **Student load.**

Pan-Hellenic Council, 28.
Parking areas, 15.
Percussion, 228; curriculum, 228; ensemble: see **Ensembles** and **Musical activities.**
Philosophy and Religion, 119; requirement: see **Area general course requirements for graduation.**
Physical activity, credit in: for basic R. O. T. C. students: see **Basic general course requirements for graduation**; for Marching Band members, 215.
Physical education: see **Health education and physical education** and **Basic general course requirements for graduation**; facilities, 14; program, 19.
Physical examination: see **Health service.**
Physics, 125; curriculum, 127.
Piano, 215, curriculum, 232.
Placement service, 19; director of: see **Administrative staff**; director of teacher placement: see **Administrative staff.**
Point index and scholastic standing, 56; see also **Student load.**
Police science, 127.
Political science, 129.
Pre-chiropody study: see **Pre-medical study and allied fields.**
Pre-dentistry study: see **Pre-medical study and allied fields.**
Pre-forestry, 130.
Pre-law study, curriculum, 132.
Pre-medical study and allied fields, 132.
Pre-nursing curriculums: see **Pre-medical study and allied fields.**
Pre-osteopathic study: see **Pre-medical study and allied fields.**
Pre-pharmacy study: see **Pre-medical study and allied fields.**
President: see Administrative staff.
Pre-veterinary study: see **Pre-medical study and allied fields.**
Probation: for low entrance qualifications: see **Admission to Youngstown University**; for low grades: see **Grade requirements** and **Student activities.**
Professional organizations: see **University-recognized organizations.**
Proficiency in a foreign language, 69.
Proficiency in English, 56.
Provisional teaching certificate in Ohio, 174; in health education and physical education, 100, 183.
Psychology, 135.
Psychometrist: see **Administrative staff.**
Public administration, combined major in: see **Business organization**; curriculum, 165.
Publications, student, 23.
Public relations, combined major in: see **Business organization**; curriculum, 165.
Public relations, director of: see **Administrative staff.**
Public school nursing, 183: see also **Pre-medical studies and allied fields.**

Quartet, string: see **Ensembles and Musical activities.**

Radio programs, student, 25.
Rank, class, 53.
Reading, improvement of: see **Communication.**
Recitals: see **Musical activities.**
Recorder: see **Administrative staff.**
Records and reports fee: see **Special fees.**
Recreation education: see **Health education and physical education.**
Refunds: see **Withdrawals and refunds.**
Registration, 52.
Registration, change of, fee for: see **Special fees.**
Registration, freshman, 52.
Registration, late, fee for: see **Special fees.**
Registration withdrawal fee: see **Special fees.**
Regular fees: see **Fees and expenses.**
Regulations, general, 49.
Reinstatement, fee for: see **Special fees.**
Relation of high school courses to University graduation, 41.
Religion, 138; requirement: see **Area general course requirements for graduation.**
Religious opportunities, 17.
Religious organizations: see **University-recognized organizations.**
Repetition of courses, 57.
Requirements for degrees: College of Arts and Sciences, 66; Dana School of Music, 210; School of Business Administration, 147; School of Education, 171; William Rayen School of Engineering, 187.
Requirements for graduation, general, 43.
Requirements for a second baccalaureate degree, 48.
Residence requirement: see **General graduation requirements other than courses.**
Rifle Team, 19.
Romance languages and literature: see **French, Italian, and Spanish**; literature in translation: see **Humanities.**
R. O. T. C.: facilities, 15; activity fee: see **Special fees**; students, modifications for, courses waived for: see **Military science.**
Russian, 138.

Sacred music, 231; curriculum, 235.
Sciences: see **Astronomy, Biology, Chemistry, Geology, Mathematics,** and **Physics.** See also **Natural science.**
Sciences, laboratory: see **Biology, Chemistry, Geology,** and **Physics.**
Scheduling courses, 49; student's responsibility in, 50.
Scholarships and loans, 33.
Scholastic standing: see **Point index.**
School of Business Administraaion, 9, 147.
School of Education, 9, 170.
Science, requirement: see **Area general course requirements for graduation.**
Second baccalaureate degree, requirements for, 48.
Secondary education, 178; curriculum, 183.
Secretarial School, 9, 167.
Secretarial studies, 167; curriculum, 169.
Self-help, 19.
Semester hour, definition of: see **Class hour.**
Seminar, University Honors, 146.
Senior standing: see **Class rank** and **Candidacy for a degree.**
Seniors taking 100-level courses, credit for: see **Upper and Lower Division courses.**
Service organizations: see **University-recognized organizations.**
Services and opportunities, 16.
Snack Bar: see **Dining facilities.**
Social opportunities, 17.
Social science, 139; see also **Economics, History, Philosophy and Religion, Political science, Psychology,** and **Sociology.**
Social studies, combined major in, 140; curriculum, 140; requirement: see **Area general course requirements for graduation.**
Social work: see **Sociology.**
Sociology, 141.
Sophomore standing: see **Class rank.**
Sororities: see **University-recognized organizations.**
Spanish, 143.
Special check handling fee: see **Special fees.**
Special curriculums: see **Curriculums to meet special requirements.**
Special education, 180.
Special fees, 60; for music students, 208.
Special students, 43.
Speech and dramatics, 145.
String bass, 221; curriculum, 232.
Student activities, 21, 207.
Student assistantships, 39.
Student Council, 22.
Student governmental organizations: see **University-recognized organizations.**
Student housing, 20.
Student load, 50; see also **Point index** and **scholastic standing.**
Student organizations: see **University-recognized organizations.**
Student publications, 23.
Student recitals: see **Musical activities.**
Summer sessions, 60; fees: see **Fees and expenses.**
Suspension from classes for non-payment of tuition: see **Tuition payment by installments**; from extra-curricular activities: see **Student activities.**
Symphony orchestra: see **Ensembles and Musical activities.**

Table of courses required for graduation, 45.
Teacher placement, director of: see **Administrative staff.**
Technical Institute, 10; director of: see **Administrative staff.**
Testing: see **Guidance and testing program.**
Theory and composition, 229; curriculum, 234.
Time/Credit ratio, 50.
Times of classes, 8.
Traffic and transportation management, combined major in: see **Business organization**: curriculum, 166.

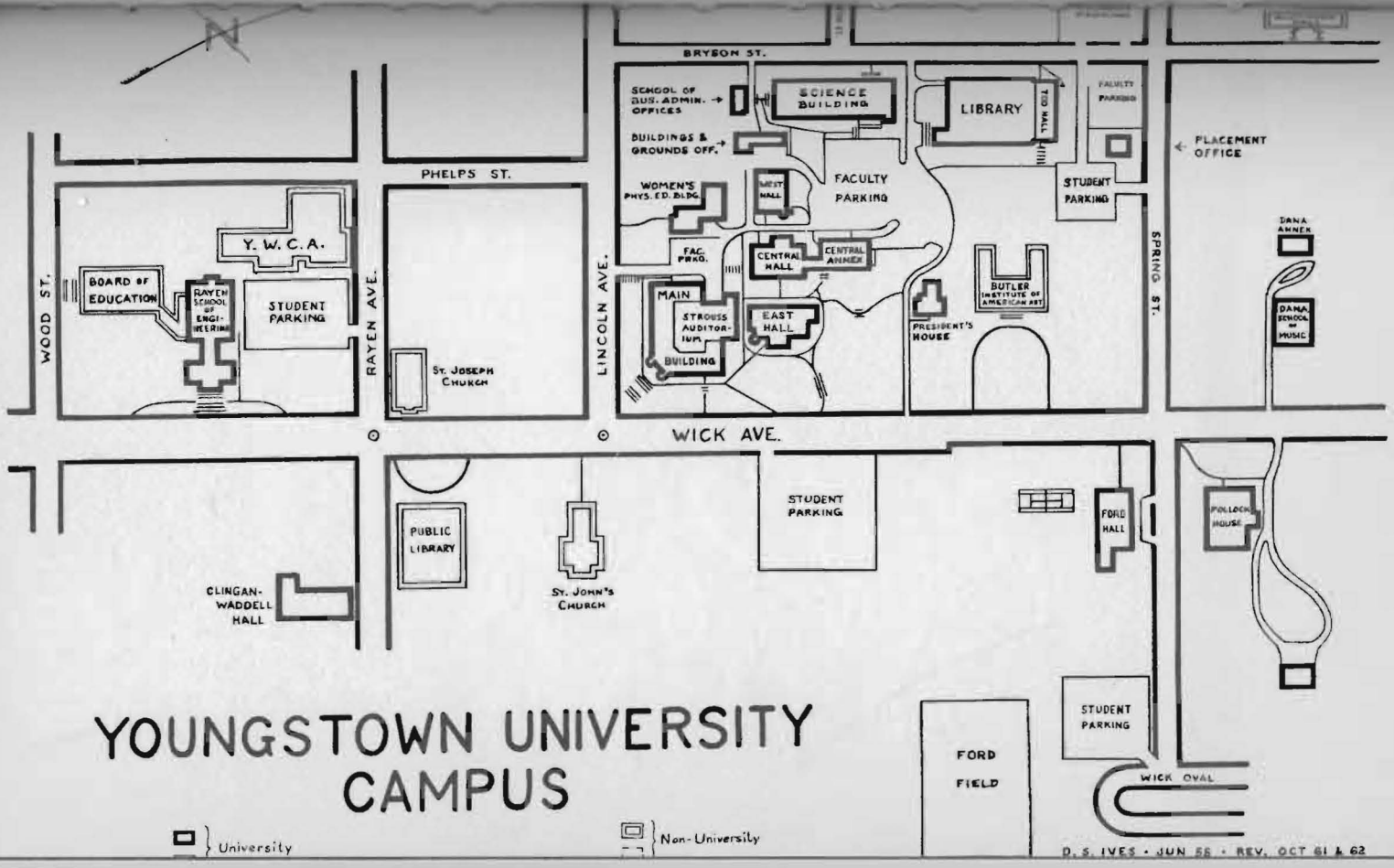
Transcript of credits: see **Grade reports**; fee: see **Special fees.**
Transfer students: see **Admission from other institutions.**
Trombone, 226; curriculum, 232.
Trumpet, 224; curriculum, 232.
Trustees, Board of, 233.
Trustees of the Rayen School, 234.
Tuba, 227; curriculum, 232.
Tuition: see **Fees and expenses.**
Tuition payment by installments, 62.

University-recognized organizations, 25.
University Honors Seminar, 146.
Upper and Lower Division courses, 53.
Upper Division courses: number required for graduation: see **General graduation requirements other than courses**; rules governing, 53.
Upper Division, definition of, 53; admission to, 53.

Veterans Administration, book orders: see **Bookstore.**
Veterans Education Officer: see **Administrative staff.**
Viola, 219; curriculum, 232.
Violin, 218; curriculum, 232.
Voice, 217; curriculum, 233.

Watson Foundation Distinguished Professors, 244.
William Rayen School of Engineering, 9, 184.
Withdrawal: see **Grading system**; **Honorable dismissal**; and **Withdrawals and refunds.**
Withdrawals and refunds, 63.
Woodwind ensemble: see **Ensembles** and **Musical activities.**
Workshop, music: see **Ensembles.**

Zoology: see **Biology.**



YOUNGSTOWN UNIVERSITY CAMPUS