

The YOUNGSTOWN
UNIVERSITY
BULLETIN





Catalog Number

HOW TO USE THIS BULLETIN

This bulletin is a handbook of information about Youngstown University, its objectives, its regulations, its opportunities. Freshmen use it as a textbook for the Orientation course. In it are sections on the College of Arts and Sciences, the School of Business Administration (including the Secretarial School), William Rayen School of Engineering, and Dana School of Music.

The student should make himself familiar with the sections on Admission, General Requirements for Graduation, General Regulations, Fees and Expenses, and the Courses of Instruction in the school in which he enrolls. He should understand the course numbering system used, and he should know the use of the various terms and abbreviations employed in describing the courses. The student who has a definite vocational goal should consult the curriculum outlined for his field.

Some students will be especially interested in certain sections, such as those on Scholarships, Placement Services, R. O. T. C., and Student Activities.

For page references, consult the Table of Contents on page 2 and the Index.

Catalog Number THE YOUNGSTOWN UNIVERSITY BULLETIN

Volume XXVIII

May 1959

Number 3

Entered as second class matter at the post office at Youngstown, Ohio, under the act of August 24, 1912. Published by The Youngstown University five times yearly, in March, April, May, July and December, at



Main Building

The Library and John Tod Hall





The New Science Building

William Rayen School of Engineering





Dana School of Music

The President's Home

ering





Part of North Campus, showing Pollock House

Secretarial School





Ford Hall







Baccalaureate Scene

Commencement in Stambaugh Auditorium



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Catalog Number

1959 - 1960

Fifty - Second Year

Effective September 1, 1959

Youngstown, Ohio

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THE UNIVERSITY CALENDAR, 1959-1960

	THE ONIVERSITY CALLINDAR, 1939-1900
3	First Semester
4	1959
5	September 8, 9, 10, 11, Tuesday, Wednesday, Thursday, Friday Registration September 12, Saturday
	1960
58	January 4, Monday, 8:00 a.m. Christmas vacation ends January 18, Monday, 8:00 a.m. Final examinations begin January 23, Saturday, 12:00 noon Final examinations end January 30, Saturday, 12:00 noon Semester ends
	Second Semester
35	January 27, 28, 29. Wednesday, Thursday, Friday
55 173	May 16, Monday, 8:00 a.m. May 21, Saturday, 12:00 noon May 23, Monday, 8:00 a.m. Final examinations begin May 28, Saturday, 12:00 noon May 29, Sunday, 8:00 p.m. Baccalaureate Service May 30, Monday June 1, Wednesday, 8:00 p.m. Commencement
1/)	June 1, Wednesday
	Summer Session
	June 10, 11, Friday, Saturday June 13, Monday, 8:00 a.m. First term of summer session begins July 4, Monday July 15, Friday, 10:00 p.m. First term of summer session ends
206	July 18, Monday, 8:00 a.m Second term of summer session begins August 19, Friday, 10:00 p.m Second term of summer session ends
209	Fall, 1960
211	Advance Registration for New Freshmen
.213	July 13 Wadasaday 3:00 - To f
.214	July 13, Wednesday, 3:00 p.m. Transfer, former, and summer school students July 13, Wednesday, 6:00 p.m New freshmen
.233	(Except in Engineering School)
	August 3, Wednesday, 6:00 p.m New freshmen in Engineering School August 17, Wednesday, 6:00 p.m New freshmen, all schools

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

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

Youngstown University grants the degrees of Bachelor of Arts, Bachelor of Engineering, Bachelor of Laws, Bachelor of Music, Bachelor of Science, Bachelor of Science in Business Administration, and Bachelor of Science in Education.

General Information

OBJECTIVES

The Youngstown University presents an educational opportunity for the residents of the Mahoning and Shenango valleys, a highly industrialized region of more than half a million people in Eastern Ohio and Western Pennsylvania. attempts to meet the educational needs of this heterogeneous community without regard to race or creed and to offer its students something for their personal development, for the fulfillment of their obligations of citizenship, and for their practical To achieve these ends, the University seeks to work in life. provide a broad liberal and cultural education characterized by habits of free inquiry and exact observation, a love of truth, a taste for good reading, a familiarity with the general content of the various fields of knowledge, rigorous discipline in some chosen field, and the ability to express thought clearly and force-This program enables the student to develop a sound philosophy of life, standards of rational conduct and discipline derived from an intelligent understanding of himself, stability and integrity of character arising from sound ethical principles, and a sustained religious faith irrespective of his church affiliation.

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 in 1927 the College of Liberal Arts, offering daytime classes for the first time, was started. In 1928 the Institute changed its name to 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 Dana School of Music of the college in 1941. In 1946 the engineering department, organized several years before, became William Rayen School of Engineering and two years later the business administration department became the School of Business Administration.

Bachelor of Music, with the major in voice, an instrument, theory, 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.

The School of Law

The School of Law will be discontinued in 1960. Consult the 1957-1958 catalog for the program and the 1958-1959 catalog for the calendar of the school.

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 and experimental basis, but present plans are for its expansion in the near future 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 and the School of Business Administration. The principal buildings of 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.

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, laboratories, departmental offices of the College of Arts and Sciences, and the Bookstore.

The buildings close to the Main Building supplement the classroom and office space of the two schools in the central area and augment the facilities of the music school. Immediately north of the Main Building is the Secretarial School building, to the west is the Women's Physical Education Building (see below), and north of that is West Hall, all three once parts of private estates. North of West Hall is a frame building known as the Annex. Between West Hall and the Secretarial School building stands Central Hall, a large frame structure, on the first floor of which is a cafeteria: on the second are music and other facilities, including an auditorium.

Other classrooms and offices of the College of Arts and Sciences are in Pollock House, Ford Hall, Clingan-Waddell

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Hall, John Tod Hall, the Library, and the new Science Building.

C. J. Strouss Memorial Auditorium

C. J. Strouss Memorial Auditorium, completed in 1949, 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 ample facilities for concerts, operas, plays, lectures, and assemblies.

The Library Building

This building lies along Bryson Street near Spring Street, but has its main entrance at its southeast corner, facing the central campus. For it and for 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 portable typewriters, the gift of the 1954 graduating class, are available to anyone using the library. The library possesses a collection of long-playing records, from which students and faculty may select the music, plays, or poetry they may wish to hear.

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

A new building, housing the science departments and their laboratories, lies to the south of the Library on Bryson Street. It is to be ready for partial use in the summer of 1959 and for full use in the fall.

Ford Hall

Ford Hall, at 547 Wick Avenue, was given to the college 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 Dana School of Music, form the University's spacious north campus. Until the summer of 1961 Ford Hall is reserved for the use of engineering students from India, participants in the INSTEP education program sponsored by the Ford Foundation and the Youngstown Sheet and Tube Company.

Pollock House

Pollock House, at 603 Wick Avenue, across from 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 offices, but the spacius parlors, dining room, and kitchen are available for responsible 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 Department of Metallurgical Engineering of William Rayen School of Engineering.

Rayen Building

Rayen Building, on the west side of Wick Avenue south 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 quarters, the building, still affectionately known to hundreds of Youngstowners as "Rayen School," was made available to Youngstown University and now houses William Rayen School of Engineering as well as the physics department of the College of Arts and Sciences.

Further description of the engineering and music facilities will be found in the sections devoted to those schools.

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Libraries

The holdings of the University library total about 88,000 volumes, and are increased by about 4,000 each year. The periodical list includes over 500 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 law collection is also housed in the library building.

The Association of 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 \$200,000 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 whole semester, subject to recall if needed. Library privileges are extended to alumni, and to members of the Association of the Friends of Youngstown University Library, upon application.

The main branch of the Public Library of Youngstown and Mahoning County, with 320,000 books and 508 periodicals and newspapers, is on Wick Avenue at Rayen Avenue, close to all parts of the University campus.

Laboratories

Biology, chemistry, and physics laboratories are in the Science Building. The engineering laboratories are in Rayen Building and Clingan-Waddell Hall.

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 all standard experiments in general, biological and physical chemistry, qualitative and quantitative analysis, organic preparations, and organic analysis. Furnaces, pulverizers, ultra-violet apparatus, and drying, vacuum, and high-temperature overs make possible much research work. Such special equipment as the Beckman pH meter, electric analyzer, Electropode, Geiger-Muller counter, polarimeter, spectrometer, and electric titrimeter affords extensive work in instrument analysis, preparing students for positions for which they might otherwise not be considered.

The physics laboratory has all the apparatus for college-grade experiments as published by the Central Scientific Company, and all major equipment is kept permanently assembled. Direct current and single- and three-

phase alternating current are provided. Classrooms are equipped for largescale demonstrations, which are supplemented by motion pictures and other visual aids.

The optics laboratory is equipped for the measurement of the interference, diffraction, polarization, and refraction of light, and the reflection of stray light has been minimized. Besides a self-contained unit for the Fresnel biprism experiment, there are collimators, telescopes, microscopes, comparitors, and spectroscopes: a large selection of prisms, filters, lenses, and diffraction gratings and slits; light sources such as sodium vapor, carbon arc, and Geissler tubes; and specimens of the new type of reflection coating on glass.

The electricity and magnetism laboratory provides various bridges and standards for measurement of resistance, inductance, and capacitance: several laboratory potentiometers for precise voltage measurements and for the calibration of direct current instruments: decade resistance boxes, slide-wire resistors, galvanometers, permeameters, meters, and assorted auxiliary equipment.

The engineering laboratories are described in the William Rayen School of Engineering section.

Physical Education Facilities

The Women's Physical Education Building, remodeled and renovated in 1953, provides offices, classrooms, a gymnasium, and showers for women's health 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; they also make use of municipal tennis courts and the Mahoning Country Club golf links.

R. O. T. C. Facilities

Equipment for instruction in military science and tactics is the most modern available to colleges and universities and includes small arms, communication material, crew-served weapons, and associated training material. Additional items are procured as they become available from Army stocks. Students are instructed in a variety of military subjects, such as map reading, marksmanship, military history, communications, organization and functions of the Armed Forces, and military tactics. Drill periods are conducted at Harrison Field, just east of the main campus. Range facilities for firing the caliber .22 rifle are also available.

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Parking facilities for students include a large lot operated by Student Council, on the east side of Wick Avenue between Lincoln Avenue and Spring Street; a small area between the Library and the First Christian Church: a lot on Spring Street east of Wick Avenue, behind Ford Hall: and another at the southeast corner of Bryson and Spring Streets. Faculty members use two lots in the central area and a lot north of the Library. A lot at Rayen Building serves both faculty and students. Students are not permitted to drive into the main campus.

Neighboring Facilities

A number of community facilities have been made available for use by the University. 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. Continuous or occasional use is also made of various other facilities of such agencies as the City of Youngstown, 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, the Board of Education, and the Mahoning Law Library Association. By arrangement, several rooms in the Board of Education building are used for classrooms by William Rayen School of Engineering.

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 work and to carry forward the University's program.

SERVICES AND OPPORTUNITIES

The Bookstore

The Youngstown University Bookstore, on the first floor of the Main Building, is the agency through which most textbooks and other required supplies are sold. Other stores in the Youngstown area do not stock most University textbooks and they are not authorized to issue books or materials on Veterans Administration book orders except for certain specifically authorized items. On the other hand, the Bookstore does not

attempt to compete with other stores in the area and carries very 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 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 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 sometimes participate.

The Youngstown chapter of Composers, Authors, and Artists of America is open to all music, art, drama, and literature students who can qualify as creative writers or patrons Creative talent also finds opportunity on the air, with University programs broadcast from two 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, thu

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 of rare beauty is Stambaugh Audi torium, which houses one of the great organs of the country an provides ample facilities for lectures, dances, musical programs and other functions, including the University commencement exercises. The main hall, noted for its acoustic excellence, seat 2,600 people. Many great visiting artists have expressed the appreciation of this beautiful auditorium.

Religious Opportunities

The Young Men's Christian Association, the Youn Women's Christian Association, and many churches are with easy walking distance of the University. Two chaplains by very OWlard eral

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Youn with ns bay full-time offices on the campus, one supported by the Roman Catholic Diocese of Youngstown, the other by the Council of Churches of Youngstown and Vicinity. 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. 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 and Roman Catholic chaplains, the Veterans' Education Officer, or of the psychometrist. These counselors wish to be of aid to students who desire help in preparing plans for the future, in increasing their ability to study effectively, in creating satisfying lives, or in determining the appropriateness of their vocational goals. Students uncertain of their vocational preferences may receive guidance designed to help them arrive at a choice. ous aids used for guidance are vocational literature and aptitude and interest tests which are administered through 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

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intelligence examinations administered to entering students who request them, and the test in English proficiency given to all freshmen. In addition, tests in personality, mechanical comprehension, and special aptitudes may be taken at any time. The English proficiency test may be re-taken at times announced by the Testing Office and the Division of Language and Literature.

Other tests may be taken, such as the Graduate Record Examinations for those interested in graduate work and the Chartered Life Underwriters examinations taken by students of certain courses in business organization. The fees for the latter 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 application is made 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 semesters 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 p.m. Monday through Friday and at other times by special arrangement; she can always be located through the University switchboard oper-The University provides emergency care; continued treatment, if necessary, is paid for by the student.

Group insurance to cover hospital and/or surgical care is available to all students at the time of registration, at a semiannual fee payable in advance. The plans are voluntary, community-sponsored, and non-profit, with no occupational restric-Membership may be retained after leaving the Univer-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.) and the National Association of Intercollegiate Athletics (N.A.I.A.).

Rifle Team

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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 second floor of the Annex.

Music students and alumni of 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 keep in mind 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 meetings.

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 office 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. Scheduling of all student events by the Co-ordination and Calendar Committee is centered in this office.

Office of the Dean of Men

The Dean of Men has joint responsibility with the Dean of Women for the over-all student personnel program with special responsibility for men students. He supervises the fraternities and assists the Registrar in the selection of students.

The office of the Dean of Men is Room 110 of the Main Building.

Student Housing

The University has no dormitories, but anyone wishing to make application for off-campus housing should contact the office of the Dean of Women where a registry of all current vacancies is maintained.

Women students who wish dormitory accommodations and activities may occupy a section of magnificently equipped Beuchner Hall, a privately operated residence hall for women located at 620 Bryson Street. Application may be made to the Resident Manager at that address.

The cafeteria in Central Hall serves meals at reasonable rates from 11:00 a.m. to 7 p.m. daily except Saturdays and Sundays. The Snack Bar in West Hall serves light lunches from 7.00 a.m. to 3 p.m. daily except Saturdays and Sundays

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

An up-to-date record of the more than 6,600 graduates is maintained in the Office of Public Relations. As far as possible, the graduate's record shows his place of employment and the type of work he is doing, 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.

Women holding degrees from the University are eligible for membership in the American Association of University Women.

For the Alumni Association of 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 probation may not take part in such activities. Also, participation may be forbidden to any student as a disciplinary measure.

Honor Point System

Achievement in extracurricular activities together with scholarship is recognized through the Honor Point System. Each year the three to 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. For extracurricular activities the point schedule is available at the office of the Dean of Women. 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

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operates under constitutional powers granted by the college administration. The council is composed of representatives from five undergraduate units (the College of Arts and Sciences, the Schools of Business Administration, Engineering, and Music, and the Secretarial School) in proportion to the enrollment in each. A member of the faculty and a member of the administrative staff are chosen by the administration to act as advisers to the group. All meetings of the council are open to all students, and any matter may be brought before a meeting by requesting that it be included in the agenda for the meeting.

Student Council exercises concurrently with the Faculty Executive Committee 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 to 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, 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 Union Fund and for band uniform replacement. The remainder is allocated through the operating budget.

Operating-budget allocations for student art shows, debate, dramatic productions, intramural sports, the Jambar and Neon, music organizations open to all students, and student radio programs, are administered by the groups to whom they are allotted. Student Council itself administers the appropriations for council expenses, the Student Handbook, student parkinglot maintenance, student all-University social functions, special projects, and matters connected with membership in the National Student Association.

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. The Neon and Jambar are supported 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: the Jambar also conducts a weekly program of University news and interviews over Radio Station WBBW. Thus they serve as laboratories for journalism classes, with credit in limited amounts given for work on the publications. Student Council has authorized the establishment of two scholarships of \$100 each, one for the editor-in-chief of the Jambar and one for that of the Neon, to be financed from the Student Activity Fund.

The Jambar is a member of the Ohio College Newspaper Association, and at annual conventions of that group it has been awarded the Scripps-Howard trophy for the best bi-weekly college newspaper in Ohio in 1940, 1941, 1948, 1949 and 1953. It was voted second best in 1945, 1950 and 1957 and won first honorable mention in 1952 and 1955. It has also, in competition with all college newspapers in the state, received frequent honors in news and editorial writing and advertising layout, including four such awards in 1952 and 1953. In 1958 and 1959 it was named the best college newspaper in the Penn-Ohio Press Association.

Horizon is an independent semi-annual magazine published by students of the University for the encouragement of creative writing. Short stories, poetry, and essays written by students are printed therein.

Dramatics

The Drama Guild produces plays each year in co-operation with the Department of Speech and Dramatics, and for several years an all-University variety show has been staged annually.

Among plays produced in recent years are Wilde's The Importance of Being Earnest, Eliot's Murder in the Cathedral. Wilder's The Skin of Our Teeth, Wouk's The Caine Muting Court Martial. Barrie's Dear Brutus, and Dark of the Moon by Richardson and Berney.

The Drama Guild, as a service organization, maintains and constantly improves the theatrical facilities of the C. J. Strouss Auditorium, where flexible arrangements of equipment permit many unusual effects. Sound and light are controlled from the rear of the auditorium, so that operators can observe the effects. A private telephone system affords constant contact between control room, backstage area, dressing rooms, orchestrapit, and box office.

Important radio programs can be re-broadcast across the main campus and in the auditorium and the cafeteria. Tape recordings are made of plays, recitals, and other events and replayed for study and enjoyment.

Students operate all equipment, which to a great extent they have bought, built, gathered and arranged. They have rigged over two thousand feet of fly-line and built an admirable array of sets, and are now collecting period costumes, furniture, and other properties.

Students who participate in these activities are automatically permitted to join the Drama Guild, whose purpose is to perform services that promote dramatic activity throughout Youngstown.

Musical Organizations

Many campus musical organizations are open to all students of the University. For a list of 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 sources, 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. The Art Department and Art Club sponsor a national print show which is open to all students and faculty members of colleges and universities in the United States. The print show is biennial, with purchase prizes up to \$300.

Radio and Television Programs

In addition to the Jambar 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.

Honorary and Professional Societies

A number of honorary and professional societies, national and local, are established at Youngstown University:

Alpha Mu is a local honorary advertising and merchandising fraternity.

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

Alpha Tau Gamma is a local honorary accounting fraternity.

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

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 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 Clarence P. Gould Society recognizes oustanding students in the liberal arts and sciences, and encourages superior students to distinguish themselves through high scholastic achievement while pursuing a liberal education. Final determination of membership is by vote of a faculty committee. (See the section on Senior Honors.)

Kappa Delta Pi is an honor 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.

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 promoting service to country.

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.

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

Phi Mu Alpha Sinfonia is a national honorary music fraternity, Delta Eta chapter of which is at Dana School of Music.

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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.

Sigma Alpha Iota is a national honorary music sorority, Alpha Nu chapter of which is at Dana School of Music.

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.

Student Organizations

All-University:

Alpha Pi Epsilon §†
Art Club
Composers, Authors, and
Artists of America*
Dana Music Forum
Drama Guild
Gessner Law Club
International Students
Organization
Los Buenos Vecinos
Newman Club
Psychology Club

Religion-in-Life Fellowship
Student Democrats of
Youngstown University
Student Education Association
Wilma A. Brown Home
Economics Club
Young Republican Club
Youngstown University
English Society
Youngstown University
Student Association

Departmental Organizations:

Athletic Department Varsity Y Club Women's Recreation Association† Secretarial School Alpha Iota*† Delta Chi Epsilon† Tau Kappa Nu†

Engineering School Dean's Council

Social Fraternities

The social fraternities in Youngstown University (local fraternities unless otherwise noted) are:

Alpha Phi Delta* Kappa Alpha Psi* Kappa Sigma Kappa* Phi Gamma Phi Sigma Kappa* Sigma Phi Epsilon* Sigma Tau Gamma* Tau Kappa Epsilon* Tau Omega Theta Chi* Upsilon Upsilon Zeta Phi

Social Sororities

The social sororities at the University are:

Alpha Omicron Pi* Beta Sigma Omicron* Phi Mu* Sigma Sigma Sigma* rsity

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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. It has two faculty advisers appointed by the president of the University. The Council governs the relations of such fraternities among themselves and with other groups.

Pan-Hellenic Council is composed of two representatives from each active all-University social sorority and has one 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 awards and prizes are announced each year at Commencement, unless otherwise indicated below. Changes in awards and prizes may be made from time to time at the discretion of the donors.

The YU Pins. Youngstown University annually awards a pin to each of the three to five graduating students who have the largest number of honor points in scholastic and extra-curricular activities. The pin is pearl-studded, in the form of a Y superimposed on a U. The pins are awarded at the rate of one to each hundred members of the graduating class.

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, on the basis of comprehensive examinations at the end of the second year: \$100.

The Greek Prize. An anonymous donor provides 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 Roberts Deliberating Club Award in Social Sciences. The Roberts Deliberating Club of Youngstown annually awards \$50 to the graduating student ranking highest in the social sciences.

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

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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, head of the department of chemistry.

The American Chemical Society Student Affiliates Award. The Youngstown University Chapter of Student Affiliates of the American Chemical Society annually presents Van Nostrand's Chemists Dictionary or another suitable book to the graduating senior, majoring in chemistry or chemical engineering, who has maintained the highest point average in chemistry or chemical engineering courses for at least three consecutive years.

The American Institute of Chemists Award. An Associate Member ship 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 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 City Office and Art Company Awards. The City Office and Art Company gives three \$10.00 purchase awards for outstanding works shown at the annual Youngstown University Art Exhibition.

Los Buenos Vecinos Art Award. Los Buenos Vecinos, the Youngs town University Spanish Club, gives a prize of \$10.00 for the best drawing shown at the annual Youngstown University Art Exhibition.

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

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 four years. The award is made in honor of the memory of Louis A. Deesz, the first dear of William Rayen School of 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. In addition, awards made possible by Mr. Henrik Ovesen, a life member of the society, are given to the two students with the next highest standings.

The American Institute of Industrial Engineers Award in Industrial Engineering. The American Institute of Industrial Engineers gives an award to the 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 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 Grace Prentice Maiden Award. In memory and honor of his mother, Judge Erskine Maiden, Jr., provides an annual award of \$100 for the law school student having the highest cumulative grade average at the completion of his study for the law degree.

The First Federal Savings and Loan Association Award. An award of \$100 is given to the student in the School of Law who attains the highest cumulative grade average of the second-year class.

The Land Title Guaranty and Trust Company Award. The Land Title Guaranty and Trust Company of Youngstown awards annually a prize of \$100 to the law student making the highest average grade in the regular course examinations in Real Property I, II, and III.

The Rose Rigelhaupt Memorial Award. An award of \$100 is given to the student in the School of Law who attains the highest grade in the course in Pleading and Practice.

The winners of the following awards are sometimes announced at times other than Commencement:

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), military science, leadership, and character.

To the cadet who completes the advanced course with the most outstanding excellence in all academic subjects (exclusive of military), military science, leadership, and character.

The names of the recipients are inscribed on a plaque presented to Youngstown University by the donors. No student may receive either award unless he has completed one full year of the R. O. T. C. course at Youngstown University.

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 career at Youngstown University the qualities of leadership.

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 career 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.

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hanical anding ible by 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), military science, and personal qualifications, and who has completed one full year of the R. O. T. C. course at Youngstown University.

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 Corps of Cadets Awards. Medals are awarded annually by the professor of military science and tactics to R. O. T. C. cadets as follows:

A silver medal is awarded to the Corps of Cadets squad leader whose squad is selected, through competitive drill, as the most proficient in squad

drill.

A silver medal is awarded to the first-year military science student who is selected, through competitive drill, as the most proficient freshman in individual drill, school of the soldier, and personal appearance.

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 Society of American Military Engineers Awards. The Society of American Military Engineers makes the following annual awards to R. O. T. C. students:

A gold medal with key replica to 10 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 10 outstanding students who are in the last year.

Applications for these medals are submitted for one qualified student in each of these years.

The Superior Cadet Ribbon Award. This award is presented annually by the Department of the Army to one 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 Distinguished Military Graduate Honor Award. Each year at graduation exercises the President of The 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 Professor of Military Science and Tactics Award. A trophy is presented annually by the Professor of Military Science and Tactics to the fourth year cadet whose record at the R. O. T. C. summer camp is most outstanding among the Youngstown University cadets attending.

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

SCHOLARSHIPS AND LOANS

All scholarships, grants-in-aid, and loans are under the supervision of the 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 Youngstown University Student Scholarship Fund. This fund is financed by a group of prominent business and professional men and women of the Mahoning Valley for the purpose of aiding worthy students. Fifteen \$300 scholarships, twenty \$200 scholarships, and twenty-five \$100 scholarships were available for 1958-1959, and were granted on the basis of high school record, competitive examination, and recommendation of the high school principal or teachers. Selection is made by the Committee on Scholarships.

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 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, or 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 Sharon Steel Corporation Scholarships. These three four-year scholarships were established in 1945 and 1946 by the Sharon Steel Corporation, which awards them each year to sons and daughters of its employees who are interested in studying engineering, metallurgy, or business administration. Each scholarship provides for the recipient's tuition, fees, textbooks, and supplies at Youngstown University to the extent of \$2,500 for four years. 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 on the basis of academic achievement, character, personality, and participation in

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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 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. (Award of this scholarship does not affect the recipient's eligibility for one of the National Scholarships offered each year by the General Motors Corporation.)

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 Contractors' and Employees' Christmas Gift Scholarships. The builders' supply dealers of the Youngstown area established in 1956 a \$5,000 scholarship fund, to be administered by the Committee on Scholarships, as a substitute for the usual Christmas gifts sent to customers. Subscribing to this fund are: The Boardman Supply Company: The City Coal and Supply Company: The Habuda Coal and Supply Company: the J. K. Horn and Son Company: The Reed Builders Supply Company: The Valler Builders Supply Company: The Wester Brothers Supply Company: The Wester Fuel and Supply Company: The Wickliffe Coal and Supply Company: and The Youngstown Building Material and Fuel Company.

The Business and Professional Women's Club Scholarship. A scholarship of \$500 is awarded to an upperclass woman by the Business and Professional Women's Club of Youngstown.

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 girl, from an endowment of \$12,000 contribute as a memorial to Tom Pemberton. The recipients must be in the upper two-thirds of their high school classes and plan to major in health, physical and recreation education. The scholarships were established in 1957.

The Westinghouse Achievement Scholarship in Electrical Engineering This scholarship, established in 1952 by the Westinghouse Education son orks. rain-

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Foundation, is awarded annually to a junior majoring in electrical engineering, for high academic achievement and demonstrated qualities of leadership. The stipend is \$500. The recipient is chosen on the basis of recommendations by the faculty of William Rayen School of Engineering.

The Westinghouse Achievement Scholarship in Mechanical Engineering. These are like the Westinghouse Achievement Scholarship in Electrical Engineering, but for a junior majoring in mechanicaal engineering.

The Westinghouse Industrial Scholarships in Engineering. These scholarships, established in 1956, are available to recent high school graduates with outstanding high school records. Recipients work part time at a regular job in the engineering department of the Westinghouse transformer plant in Sharou, Pennsylvania, and attend the University as part-time students. Details may be obtained from the Dean of the University or from the Supervisor of Training, Industrial Relations Department, Westinghouse Electric Corporation, Sharon, Pennsylvania.

The American Society for Metals Foundation Scholarship. This scholarship of \$400, established in 1955, is awarded, preferably to a student who has finished his sophomore year, upon the recommendation of the head of the department of metallurgical engineering.

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 Dr. and Mrs. Raymond S. Lupse Pre-Medical Scholarship. Estabblished in 1958, this scholarship is annualy awarded to a freshman premedical student by Dr. Benjamin S. Lupse, M. D., F. A. C. S., and his wife.

The American Business Women's Scholarship. This scholarship, instituted in 1957 in the amount of \$150, is provided by the Youngstown Chapter of the American Business Women's Association. It is awarded to a girl in the field of business administration.

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

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 National Office Management Association Scholarships. Five scholarships of \$100.00 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 Yo-Mah-O Chapter, National Secretaries Association Scholarship. This scholarship of \$500 is provided by the Youngstown Chapter of the National Secretaries Association (International). It is awarded to a girl interested in completing the two-year secretarial course and qualifying for the title of A. B. A.

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 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 girl graduate, chosen similarly.

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 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 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 is made by the Committee on Scholarships. It was established in 1954.

The Grace M. and Blanche F. Vail Scholarship. This scholarship is awarded annually to a freshman or upperclassman 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 Mahoning Valley Technical Societies Council Scholarship. A scholarship of \$200 is awarded to a sophomore or junior student in engineering from the Mahoning and Shenango Valleys.

R. O. T. C. Command Scholarships. Scholarships are granted to fourth-year military science students in recognition of their extraordinary responsibilities in administering the Youngstown Unversity Corps of Cadera Recipients must have demonstrated outstanding leadership and scholastic

ability, and must adequately perform their duties as cadet officers. The number of scholarships and the amount of each will be announced each year by the President of the Youngstown University. Each scholarship is made available at the beginning of the second semester.

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 American Association of University Women, Youngstown Branch, Scholarships. A scholarship grant of \$125 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 Salem Community Scholarship Association Scholarships. 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.

Music Scholarships. A limited number of scholarships are awarded by the University for proficiency in a band or orchestra instrument, in singing, or in accompanying. Applications may be sent to the dean of Dana School of Music, who makes recommendations to the Committee on Scholarships. The stipends vary.

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 one hundred dollars for each of four students in Dana School of Music. Applications may be sent to the dean of the School of Music, who makes recommendations to the Committee on Scholarships.

The Henry V. Stearns Scholarship. The Delta Eta chapter of the Phi Mu Alpha Sinfonia national honorary music fraternity awards a scholarship to a male junior or senior music student possessing outstanding musical and scholastic ability.

The Sigma Alpha Iota Scholarship. The local Alumni Chapter of Sigma Alpha Iota, honorary professional music sorority, offers a scholarship available only to members of Alpha Nu, the local undergraduate chapter of the sorority. The requirements for this scholarship may be learned from the chairman of the chapter's scholarship committee.

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

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Cadett cholastic 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.

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

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 Department of Education are eligible to receive loans from this fund.

Student Assistantships. Student assistantships are available to upperclassmen only. Applications may be made at the office of the Dean of the University. In return for a weekly amount of work stipulated by the administration, the student receives full tuition and fees plus a salary of \$25 a week. The student assistant carries a maximum academic load of 12 semester hours, and must maintain a point average not lower than 1.5 for the current semester

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.

Fulbright Scholarships. United States government scholarships for foreign study are available for graduate study abroad. Applications may be obtained at the Office of the Dean of Women.

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.

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 28 years of age.

General Requirements and Regulations

ADMISSION

Any graduate of a first grade high school or an accredited secondary school 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, for full-time students, compliance with physical examination requirements (see "Health Service," page 16).

The applicant, if accepted, is admitted to the Lower Division of the University. He becomes a candidate for a degree when he has completed 60 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 may be refused admission; if admitted he may be placed on probation at the discretion of the dean until he has demonstrated his ability to meet the demands of college study.

Application

Application is made on a form available at the Registrar's office. It must be accompanied by an official statement of high school credits and by the Matriculation Fee of \$10.00, and should be submitted to the Registrar as soon as possible after graduation from high school. Prospective students will receive a physical examination form with 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

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st udy ollege beginning his college career, but with the understanding that 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.

G. E. D. Test Credits

Certain credits for successful results in United States Army 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 to Advanced Standing

A student applying for permission to transfer from another college or university must present, preferably one month before his enrollment, a transcript of all his previous high school and 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 and Tactics" 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 the paragraph headed "Auditors.")

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Registration of Freshmen

Although the student enrolling for the first time is instructed at the Registrar's office about scheduling his courses and registering, he will find it helpful to read the "General Regulations" section. It may be pointed out here that an extra fee is charged for late registration, when that is permitted.

Freshman Day

Freshman Day is that on which prospective freshmen for the fall semester receive information helpful in enrolling and getting started properly. It occurs just before the opening of the fall semester; the date is given in the Calendar on page 3.

English Test Requirement

All freshmen are given a standardized test widely used among colleges to attempt to discover a student's competence in using and understanding the English language. The results indicate to the student and to his instructors his probable standing in these respects in relation both to his classmates and to other students throughout the nation. Any student may retake the test at stated times. The test is never used to determine a student's grade in a course.

Guidance Examinations

Prospective freshmen may take general intelligence examinations for guidance purposes. Those who wish to do so should make arrangements with the Testing Office. Prospective freshmen who plan to enter William Rayen School of Engineering must take placement tests in mathematics and science before registering.

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. This rule is not affected by a change in major. 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.

(Continued on page 39)

Condensed Table of Courses Required For Graduation including Specified Preparatory Units

(For requirements other than course-requirements, see pages 37, 39-41.)

(For the full names of he degrees, see page 42.)	A.B.	B.S.	B.S. in Ed.	B.S. in B.A.	B.E. Mi	us. B.
	(The	ese figure	s mean	high scho	ol units.)	
Pre-College ¹		3	3	3	3	3
English	3	2*				2
A foreign language"	2	1	1	1	1	1
U. S history and civics	1 25	1 or 25			2	
Algebra ⁴	1 or 25	1 01 2			1	
Geometry ⁴	1	- 1				
Biology, chemistry, or	,				1	
physics4	1				(physics)	1
			1	1	-	1
Any mathematics						-150
Any science or additional			1	1	ATT I	1
mathematics			-			
Any science	0 10	9 or 10	6	6	8	8
	9 or 10		10	10	87	8_
Other subjects"	7 or 6	7 or 6		16	16	16
Total high school units	16	16	16			edit)
In the University	(These	figures	niean s	emester n	ours of cr	curry
General						
Basic				9	9	9
	9	9	9	9	1	
Communication Health and Physical				3 1/2	31/2	3 1/
Education Education	3 1/2	3 1/2		-		1/
Orientation ⁸	1/2	1/2	1/	/2 1/2	14	
Orientation					9	12
			12	12	3	3
Area	12	12	1 4			
Area Social Studies	12	12	3	3	,	
Area Social Studies Religion	12	3	3			
Area Social Studies Religion For the Degree	3	3 Included	3	3	18	
Area Social Studies Religion For the Degree Laboratory science	3 . 8	Included in the	3	3	18	6
Area Social Studies Religion For the Degree Laboratory science Science or mathematics	3 · 8 3	3 Included	3 - 9'	3 0 910	18 20	6
Area Social Studies Religion For the Degree9 Laboratory science Science or mathematics Foreign languages11	3 · 8 3 6	Included in the major	$\frac{3}{9}$	$ \begin{array}{ccc} 3 \\ \hline 9^{10} \\ \hline 3 \end{array} $	18	_
Area Social Studies Religion For the Degree9 Laboratory science Science or mathematics Foreign languages11 English	3 · 8 3	Included in the major	$ \begin{array}{c} 3 \\ \hline 9^{1} \\ \hline 3 \\ 6 \end{array} $	$ \begin{array}{ccc} 3 \\ \hline 9^{10} \\ \hline 3 \\ 3 \end{array} $	18 20 	<u>-</u>
Area Social Studies Religion For the Degree ⁹ Laboratory science Science or mathematics Foreign languages ¹¹ English Degrebology	3 . 8 . 3 . 6 . 3	Included in the major	$\frac{3}{9}$	$ \begin{array}{ccc} 3 \\ \hline 9^{10} \\ \hline 3 \end{array} $	18 20	- 6 98
Area Social Studies Religion For the Degree Laboratory science Science or mathematics Foreign languages ¹¹ English	3 · 8 3 6 3 3	Included in the major 6"	3 -9' -3 -6 79	$ \begin{array}{ccc} 3 \\ \hline 9^{10} \\ \hline 3 \\ 3 \end{array} $	18 20 3 86	<u>-</u>

NOTES

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

"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 Director of the Division of Language and Literature.

^aForeign language study is not required for the Bachelor of Sciena degree if the student is a registered nurse or completes the combined major in medical technology.

(Continued on the next page)

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

Application. An application for graduation must be filed with the Recorder. For the time and fee for this procedure, see page 54. To avoid a penalty, it must be done by the first day of the last fall semester before the time of intended graduation. No application for graduation is accepted after March 31. If the student does not graduate in the year for which he has filed an application, he must reapply the next time he plans to graduate.

Residence. The last 30 semester hours leading to the degree or title must be completed at Youngstown University; except that in curriculums such as the pre-law and the pre-medical, which allow the student to earn his final credit hours in absentia, the last 30 hours prior to 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 1.00 (see page 49).

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, as ex-

'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 mathematics or physics department without University course-credit, or he may make it up in any other acceptable way.

One unit is enough except for a major in a science or combination of sciences requiring Mathematics 101R or 101 or for a minor in mathematics.

"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.

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

Part-time students are not required to take this course until they have completed 60 semester hours.

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

"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 Merchandising 121.

¹¹If this requirement is met with a language not previously studied, 12 hours are needed. No University course-credit is given for the first 6 hours if the student has not studied some one foreign language successfully for two years in high school. See "Credit Evaluation for the l'oreign Language Requirement" in the College of Arts and Sciences section.

These include all courses necessary for the major, minor or minors, teaching certification (if needed), and any other special purpose. 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.

This total is a few hours higher in some fields of specialization. (One music curriculum, a special five-year combination course, totals 164: Accounting and Management total 136 each; General Business, Commercial Art, and Traffic and Transportation Management total 130 each.)

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Science d major plained on page 47. 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 table in the preceding section 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 course numbered 200 or higher; at least 40 of these 60 hours must be in course 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 grade 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 head of the student's major department determines the course requirements for both the major and the minor or minor 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.

As soon as a student has decided on his major, he should consult the head 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.

General Course Requirements: Basic

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

Communication. The Candidate must show satisfactory proficient in the use and understanding of the English language. The director of the

^{*}For this purpose, Dana School of Music and William Rayen School of Enneering are departments, and each foreign language is a department..

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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 9 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 and Physical Education. Every candidate must have 3½ semester hours of credit in health education and physical education. Normally this consists of ½ hours of health education (Health and Physical Education 107 [1 credit hour] and 108 [½ credit hour]), and four ½ credit-hour physical activity courses totaling 2 hours. Any substitution of other courses or of training received in active military service to meet any part of this requirement must have the approval of the head of the Department of Health Education and Physical Education.

Orientation. Every candidate must have 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 one 200-level history course). However, a transfer student with less than 60 but more than 30 credit hours acquired elsewhere may omit Social Science 101 and 102, and a transfer student with 60 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 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 of the catalog.

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

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

- a. A student completing Military Science 101, 102, 201, and 202 may omit Social Science 102 (3 hours). Health and Physical Education 108 (½ hour), I hour in physical activity courses, and 3 other hours to be decided in consultation with his advisor.
- b. In addition, a student completing Military Science 301, 302, 401, and 402 may omit Psychology 201 (except as a prerequisite to other courses) and 9 other hours to be determined in consultation with his advisor. For the degrees of Bachelor of Arts, Bachelor of Science in Business Administration, and Bachelor of Science in Education, the courses thus omitted may include 3 hours of science, provided that the candidate for the Bachelor of Arts degree takes 8 hours of biology, chemistry, geology or physics.

Unless specifically named above, no course required for the degree sought may be thus 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 total of 30 semester hours, meet all requirements for the second degree, and complete the requirements for a new major.

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 is only one graduation ceremony each year: in June, at the end of the second semester of the academic year. A student who completes the requirements for a degree or title at the end of a first semester receives his diploma in June and is present, if at all possible, at the commencement exercises as a member of the graduating class. A student not eligible to graduate in June but planning to complete the necessary study during the ensuing summer session is present in cap and gown at the June ceremony but does not receive his diploma until he completes the requirements.

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, and every student's schedule must have the signed approval of the adviser, 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, may get 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 as to what courses will be offered in the future, or when a particular course will be offered again, the student may consult the dean of the unit concerned, or the department head.

Although the University tries, through the 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. He will do well to read the statements under "Candidacy for a Degree," below.

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Some Definitions

The class hour* is a 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. One 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 3 to 1 (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, thinking, writing, 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 permitted to carry depends on the degree he is seeking (and

^{*}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 56-minute sessions, or two 80-minute sessions, or (as in some laboratory courses) on or two 50-minute class session and one or more laboratory periods which include instruction, or any other practicable form.

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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 2.0 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 2.0 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.

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.

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 paragraphs.

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 instructor.
- 3. Such extra work may be done only under the supervision of a full-time instructor.
- 4. The extra credit may not exceed one hour per course nor one course per semester.
- 5. An application form must include the signatures of the instructor and the department head, 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. An auditor is not to be confused with a special student.

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.

For freshman registration see page 37.

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 instructor or instructors 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 a date set by the administration 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

A student who has less than 30 semester hours of credit is ranked as a freshman; one who has from 30 to 60 is a sophomore; one who has enough credits to make it mathematically possible to graduate in June or August of the succeeding academic year, and who has been admitted to the Upper Division is a junior; one who has enough credit to make it mathematically possible to graduate in June or August of the current academic year, and who has applied for graduation at that time, is a senior.

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 gradu

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ation, a certain amount of credit is required in courses on each of these levels: see page 40).

No freshman may take an Upper Division course 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 head of his major department waives the rule.

Candidacy for a Degree

Every student who wishes to become a candidate for a degree from Youngstown University must, when he has completed from 45 to 60 semester hours, file with the Records Office an application for admission to the Upper Division. A transfer student with 45 or more semester hours must file such an application when he applies for admission to Youngstown University. 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. His completion of all pre-college requirements for the degree he seeks and of all pertinent Lower Division requirements.
- 3. His major subject, with the signed approval thereof by the head 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 heads of both the old and new major departments.

Grading System

The grade for a course completed may be: A, excellent: B, good: C, average: D, poor but passing: or F, failure.

The 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 instructor 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 F in it for dropping it later than the sixth week.

The grade of F can result from (1) unsatisfactory achievement: (2) failure to complete a course, as stated above: (3) dropping a course improperly (by unofficial withdrawal): or (4) cheating, or dishonesty of any kind in the course.

Other marks recorded are:

AUD, signifying that the student has attended the class as an auditor.

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 means withdrawal with failing status.

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

A student 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 grades follows in general the "normal curve," according to which from 5% to 10% of the grades in a class are A's. 20% to 25% B's, 40% C's, 20% to 25% D's, and 5% to 10% F's. The teacher, however, is expected to use his judgment and to regard the curve as a guide rather than as something to be rigidly imposed.

Teachers may use plus and minus modifications of the grades A. B. C. D. and F: but the recorder does not record such modifications, and they are disregarded in calculating point

indexes.

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, 3 points: B, 2 points: C, 1 point: D, no points: F or WF—I point. For example, an A in a 3-hour course is

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point this, esents, oints: urse is worth 9 points; an F in a 4-hour course means—4 points. To find the point index, the total number of points earned is divided by the number of semester hours completed with passing grades. Thus a student who successfully completes 16 semester hours and earns 24 points has a point index of 1.50. (See also Repetition of Courses, below.)

Courses that give no credit toward graduation, as well as the grades received in them, are not included in the computation of the point index.

Grade Requirements and Probation

A student whose point index for a semester is less than 0.50 while he has fewer than 30 semester hours of credit, less than 0.75 while he has fewer than 61 hours, or less than 1.00 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 1.00 to be eligible for a degree.

A student seeking the degree of Bachelor of Engineering must maintain a point index of 1.00 or higher at all times; see the section on 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. A teacher may use other means to provide such information more quickly.

The Dean's List

The Dean's List consists of all undergraduates who earn a quality point average of 2.0 in any given semester.

The Honor Roll

The honor roll, announced once 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 on page 46. 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.

A student with an E on his record at the time the calculations for the honor roll are made is necessarily excluded from consideration.

Senior Honors

To be considered for membership in the Clarence P. Gould Honor Society, seniors must meet the following minimum requirements:

- 1. They shall be seniors who are candidates for graduation and whose major field of study is one in the College of Arts and Sciences.
- 2. Their point average for all of their college work shall place them in the upper ten per cent of their class, and shall not be below 2.5.
- 3. Their record must demonstrate that their course of study has not been narrowly specialized, but has included a sufficient number of courses in both the arts and sciences to indicate a breadth and depth of study in several disciplines.

Repetition of Courses

A student may repeat a course once. If the course repeated is prerequisite to another course, the repetition must be sucessfully 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, only one of the two grades—the higher—is used in calculating the point index, provided no F is involved: but if either grade is F or WF, both grades are reckoned in the point index.

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 instructor's consent in order to take any examination at a time other than the scheduled one The instructor, 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 instructor. 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 stand ing 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 to the University.

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 acceptance reasons; and provided 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 window, 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 and Fees for One Term

The rates in the following tables are for a single term (semester or quarter, as indicated). No tuition is charged for music ensemble courses.

In determining the student's load for the assessment of regular fees for services and activities, all courses are counted except music ensemble courses. The purposes of the fees are explained on pages 53-55.

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orable transtandcurred For All Students in the College of Arts and Sciences, the School of Business Administration, and William Rayen School of Engineering, and for Part-time-Students in Dana School of Music

Part-time-Students in Dana School of Wash	
Each semester: Tuition: each semester hour	
One half-hour private lesson a week	54.00 108.00
Two half-hour private lessons a week These figures become \$63.00 and \$126.00 if the from an artist-teacher. Preparatory Department rates are \$27 Fees for Services and Activities: Full-time Students carrying 12 hours or many students are \$27 fees.	7.00 and \$54.00.
Part-time Students carrying 1 to 11 hours May obtain Student Activity and Athletic Books	(inclusive):
For Full-time Students in Dana School of Waste	
Tuition (11 to 15 semester hours) Each semester hour over 15 Applied Music Charge, basic (3 lessons a week) Each additional lesson-per-week	†1120.00
In All Units (except the School of Law) Laboratory or other special course-feessee Courses of I Records and Reports Fee\$2.50 These and other special fees are explained on pages 5 NOTE: It is understood that any or all exceptions fees shall be determined by the business manager.	3-55.
In the School of Law Tuition (each quarter): each subject Student Fee (each fall and winter quarter only This fee covers the privileges of the Student Act	tivity, Library, and
Athletic Fees. Records and Reports Fee (each quarter, if app	\$2.50 to \$7.50
This fee varies according to the load carried.	School of Music and
in Dana	Denool or mane

*A full-time music student is one enrolled in Dana School of Music and carrying 12 or more semester hours, inclusive of applied music but exclusive of music ensemble courses. A full-time music student who during a semester reduces his load to less than 12 hours is charged as a part-time student for the whole

semester.

The Applied Music Charge and Hours of Credit. Every music curriculum includes courses in applied music that require 3 private lessons a week, which are paid for at a reduced rate through the basic Applied Music Charge. 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 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: a voice, instructured for sacred music major may enroll for and earn 4 semester hours of credit in applied music: a theory, composition, or music education major, 3 hours.

For refunds on withdrawal from applied music courses, see page 57.

For each lesson-per-week under an artist-teacher, add \$23.00 for the semester.

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In the Secretarial School

See the special brochure issued for this school. For fulltime work taken for college credit, the tuition and fees are the same as for the School of Business Administration. In the Technical Institute

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

Summer Session

The tuition rate for the summer session is \$16.00 a semester hour, plus any additional course and/or laboratory fees. A special bulletin describing the summer session and giving the schedule of classes is published each April.

If a student who during the academic year is a full-time music student takes summer courses in applied music, he pays tuition at the regular rate for the semester hours of credit, plus applied music charges at the rate of \$40.00 per credit hour.

Audited Courses

A person auditing a course or courses pays tuition at the regular rate of \$16.00 a semester hour, plus any laboratory, regular, or other special fees that may be applicable.

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.

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, and/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.

Matriculation Fee. A fee of \$10.00 is charged every new student, once only, to cover the cost of his initial registration. It must accompany his application for admission.

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 after a date fixed by the administration, unless he does so at the request of the administration. Waivers will be determined by the Deans of the various schools or by the Directors of Divisions; the Dean of the University will determine waivers for independent departments. Appeals and approvals will be subject to the supervision of the Finance Committee.

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

Fee for Credit by Equivalency or Examination. A tuition fee of \$16.00 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. This type of credit must have the approval of the department head, the division head or unit dean, and 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.

Graduation Fee. A fee is charged anyone who is to receive a degree or a title. The fee, which includes cap and gown rental, must be paid by May 1 of the year of expected graduation, whether the degree is to be received in June or in August; the amount depends on when the application for graduation (see General Requirements for Graduation) is filed, as follows:

(see General Requirements	the fee is
If the application for graduation is filed:	\$ 7.00
Before the last fall semester before graduation	10.00
During the last fall semester before graduation	15.00
During the last February before graduation.	20.00
During the last March before graduation	1 /1000

These fees apply for each degree or title granted (unless honorary), except that if two degrees are to be received by one person at the same commencement, the total fee is \$5.00 more than the pertinent amount listed above.

Transcript of Credits Fee. One transcript of credits is furnished free of charge. A fee of \$1.00 is charged for each additional or subsequent 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 page 18.

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Military Equipment Deposit and Fee. Every student taking military science deposits \$12.50, at the beginning of the college year, toward coverage of the cost of United States government property assigned him. When he turns in all such property at the end of the year or upon withdrawal from the University, he is refunded amounts as follows:

 First year
 \$ 6.50
 Third year
 \$ 9.50

 Second year
 12.50
 Fourth year
 12.50

- R. O. T. C. Activity Fee. Every student registered for a course in military science is charged \$2.00 each semester as a special activity fee. This fee provides funds for certain military purposes and R. O. T. C. extra-curricular activities which will enhance the value of the Corps to the University. These activities may be, but are not necessarily limited to:
 - 1. The Annual military ball.
- 2. Awards and/or recognition for meritorious service to the R. O.T C. in athletics and in extra-curricular events.
 - 3. Athletic events and contests.
- 4. Miscellaneous matters that the head of the Department of Military Science and Tactics may deem pertinent.

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
19.7	"	", minor	\$ 2.00 a semester
Organ	Practice	Fee. major.	\$40.00 a semester
997	"	", minor	\$20.00 a semester
Instru	ment Ren	tal Fee: each instrument	\$ 5.00 a semester
Studer	t Recital	Fee	\$15.00 for each recital
Theor	Placeme	ent Examination Fee. \$5.	00 (before taking examination)

Tuition Payment by Installments

Tuition (together with any other fees payable at the beginning of a term) may be paid in installments. The student electing to do so makes a down payment upon enrolling and arranges with the business office for payment of the balance. The business manager must approve the deferred payment plan before the student may complete his registration. The Finance Committee accepts appeals and recommends action on changes and refunds.

The minimum down payment of 33½% on tuition and fee charges of \$75.00 or more and 50% on tuition and fee charges of less than \$75.00 must be paid on the day of registration unless the balance remaining after the down payment is less than \$25.00, in which event cash in full must be paid at registration. There is a carrying charge (maximum \$15.00, minimum \$1.00) on the unpaid balance remaining after the down payment. The balance of the tuition including the

carrying charge must then be paid as follows: if the initial payment is 33\%%, then at least another 33\%% must be paid during the first third of the term and the remaining 33\%% during the second third of the term. If the initial payment is 50%, the remaining balance including the carrying charge must be paid within the first half of the term. Any student paying his account in full before the expiration of his deferred period will be refunded a portion of the carrying charge. A table of refunds is on file in the business office. Any refund is made by that office.

The University holds each student responsible for his financial obligations; therefore the bill is made out to the student, not to a parent. Until it is properly revised, the bill is final. Reminders will be sent periodically during the installment period.

A student who fails to meet an installment payment when due is suspended from classes until payment has been made. He must then pay the Reinstatement Fee.

No student may enroll for a new term until all his previous tuition and fees have been paid.

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 attend class or merely giving notice to the instructor 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:

or withdrawar by the		Length o	f Term:	
Date of Acceptance by Business Office:	16-19 Weeks Incl.	12-15 Weeks Incl.	9-11 Weeks Incl.	3-5 Weeks Incl.
	20%	20%	25%	50%
First week	20%	40%	50%	100%
Second week	40%	60%	75%	100%
During third week	60%	80%	100%	
During fourth week	80%	100%	-	-
During fifth week		-11272	-	
Sixth week or following_		· · · · · · · · · · · · · · · · · · ·	tuition	naid for

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 procedures shown below under "Exceptions."

Applied music. The foregoing applies to all courses except those in applied music. An applied music course dropped is charged at \$3.00 (Preparatory Department, \$1.50) times the number of lessons taken. For full-time music students a single semester hour of applied music is valued at \$40.00. When an artist-teacher is the instructor, computation is made separately, using the pertinent rate.

Exceptions

A student who is forced to withdraw from the University because of personal illness, military service, job transfer out of the commuting area. change of job shift, or for a similar cause beyond the control of the student, which makes attendance impossible, will be allowed a revised statement of charges for tuition on a week-to-week basis following a proper change of registration and valid evidence supporting the reason for withdrawal. Charges will be based on the date of last attendance or the date the cause of withdrawal becomes effective, whichever is the more reasonable.

A student who withdraws voluntarily may also receive an adjustment of tuition charges upon re-entrance to the University within the succeeding academic year. Exceptions to this rule will be made only to those who show evidence of involuntary absence beyond one year because of subsequent illness or military service. Adjustments will be made on a week-to-week basis, and will be made only after the fees for the semester in question have been paid in full and those for the new one have either been paid in full or (if payments are made by installments) after the second installment has been paid. This treatment is not automatic; it is the responsibility of the student to apply to the Business Office for an adjustment. No adjustment will be made if the student has made another settlement which is an exception to the regular practice, or if he has withdrawn at the request of the University.

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The College of Arts and Sciences

ORGANIZATION AND DEGREES

Organization and Program

Study done mainly or entirely in the College of Arts and Sciences leads 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 Education

Department of Health Education and Physical Education

Department of Home Economics
Department of Military Science and Tactics

Courses are also offered in astronomy, communication. general science, geology, humanities, journalism, library service. and nursing. 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 most foreign languages regarded as separate departments for this purpose). It may be an interdepartmental or combined major in classical studies. humanities, public relations, Romance languages, or social studies, or one of the combined majors mentioned in the next paragraph. It may be in music, 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 (with certain exceptions), geography, geology, medical technology, metallurgy, and military science.

For the B. S. in Ed. degree. The major is accomplished through completion of one of the teacher-training curriculums. Most of these appear further on, in the Department 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 consists 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 pages 38-39, where the explanatory notes should be read carefully.
- 2. The courses and other requirements to be completed in the University. These include:
- a. The general requirements for graduation from the University. These are explained on pages 37 and 39-42 but are recapitulated below.
- b. Requirements peculiar to the degree, which are stated and explained below.
- c. Requirements for the student's major and minor fields and for any other purpose, such as teaching certification.

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.**

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^{*}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 education. However, by attending summer sessions, the student 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 college.

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 on page 42.

the reduitements as all				B.S.
e. Char		A.B.	B.S.	in Ed.
Subject	1. Preparatory	Units	3	3
English		1	1	1
United States history and civics		2	2	
A foreign language	********	1 or 2*	1 or 2*	
Algebra		1	1	
Geometry				1
Any mathematics		1	1	
Biology, chemistry, or physics Any science subjects or additional	mathematics			1
Any science subjects of additional				
2. In	the University			
	a. General			
Other than courses (see pag	es 37, 39-42):			
Completion of minimum number	r of semester	125	136**	125
Upper Division status (including of any specified preparatory to at entrance)	inits lacking			

Major and minor requirements Course-level requirements Grade-average requirement

Residence requirement Application for graduation

11/2

Grade-average requirement			
Basic courses: Communication 105-106-107 Health and Physical Education 107 and 108 Health and Physical Education activity courses Orientation 100‡	Semester 9 1 ½ 2 2 ½	hours of 9 1 ½ 2 1/2	9 1 ½ 2
Area courses:			
Social studies: Social Science 101 and 102 History 201 and 202	6	6	6
Religion: a Philosophy and Religion Department course, or Humanities 401 or 402 b. For the Degree	3	3	3
Science Science	11	In the major	

For the A.B. degree: 8 hours of one laboratory science (biology chemistry, or physics) and 3 hours of astronomy, biology, chemistry, geology, mathematics, or physics, For the B. S. in Ed. degree: 6 hours in any science subjects plus an additional 3 hours in mathematics or science.

A foreign language (ancient or 6 or 12 6 or 12 modern)

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

**See the first note on the preceding page.

^{*}One is enough except for a science major needing Mathematics 101 or 109, or for a mathematics minor.

[‡]Not required of part-time students until they have completed 60 semester

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successful college study or its equivalent. Whether a student will need 6 or 12 semester hours to attain this knowledge depends on his high school language courses: see "Credit Evaluation for the Foreign Language Requirement," a few pages further on.

For the B. S. degree: the language chosen must have the approval of the major department head. Chemistry majors ordinarily must have a reading knowledge of scientific German. No foreign language study is required of registered nurses or medical technology majors.

For the B. S. in Ed. degree: no requirement in this area of study.

English 3 — 3

c. Other Courses

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 for the A. B. degree, however, most science and education curriculums allow comparatively little choice of courses.

Combined Liberal Arts-Professional Course for Law Students

A student who has acquired at least 95 semester hours of credit in the College of Arts and Sciences and has satisfied all requirements for the Bachelor of Arts degree except 125 hours of credit and the completion of a major, will be granted the degree of Bachelor of Arts on completing satisfactorily the remaining number of credit hours in any law school which grants the degree of Bachelor of Laws and which is approved by the proper accrediting agencies. The student may satisfy his major requirements by utilizing the remaining number of credit hours accepted for law study toward a combined major in social studies. A student duly enrolled in the School of Law of Youngstown University may complete a major of 30 semester hours in some department of the College of Arts and Sciences. He may carry six hours of undergraduate study a semester while in law school.

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.

Credit Evaluation for the Foreign Language Requirement

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 or no high school unit in language 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.* Thus it is to the student's advantage to take at least two years of one foreign language in high school.

For the Bachelor of Science degree, the same principle applies, but the language must be one that meets the approval of the head of the department in which the student is majoring. A sudent 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 credit for high school or college courses as stated above, the student must pass an examination in order to be certified.**

^{*}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.

^{**}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.

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COURSE NUMBERS AND ABBREVIATIONS

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 head of the department in which the course is given.

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." Credit for a two-semester course is indicated by such a notation as "3 + 3 h. c." meaning "three semester hours of credit each semester."

"Prereq." stands for "prerequisite."

An asterik 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.

It is important that the student familiarize himself with the coursenumbering system and its significance, as well as the abbreviations used to indicate the amount of credit.

COURSES OF INSTRUCTION AND CURRICULUMS

University Seminar

D. M. Behen, Cohen, O'Brien.

401-402. The University 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 three instructors—and occasional special lecturers—representing the above three fields. Meetings will be symposia in which the members present and discuss reports on projects embracing two or more fields of study. Eligibilty for the seminar will be determined by faculty selection. Students completing the seminar with distinction will be granted special honors by the University. Department heads will determine what credit can be applied toward the student's major.

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Ancient Languages and Literature

See Greek, Hebrew, and Latin. For literature in translation, see Humanities, and Philosophy and Religion 230, 303, 309, and 330.

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 401 and 402; Latin 101-102, 201, 202, 301, 302, 304, 305, 401, 402, 403, and 404; and Philosophy 301 and 309. The student should consult the director of the Division of Language and Literature before undertaking this major.

Art

Naberezny: R. Mills; Bertolini, Elwell, Leepard, W. Moore, B. Newman, Pressly.

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 Education.

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. Life Drawing and Painting. Experience in drawing from the human 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+3h. c.
- 203, 204. Drawing and Painting. 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, oil. and collage—for still life figure composition, life, landscape, and abstract forms, to develop a sense of plastic organization. Prereq.: Art 110, 111. Art 203 is prerequisite to 204.
- 211, 212. Color and Design II. The fine relationships of color, tone, line, shapes, notan, and texture, especially as applied to textiles; further experiments with collages and mobiles to develop sensitivity in combining materials; systems in pattern construction. Prereq.: Art 110, 111. Art 211 is prerequisite to 212.
- 223, 224. Advertising Art I. Practice with different styles of lettering; application of principles of Art 110, 111 to layouts, reproduction of

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1. Art 3 h. c. of letter-

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silk screen, linoleum block, monoprint, and dry point; study of current tendencies. Prereq.: Art 110, 111. 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 212. Art 301 is prerequisite to 302.

303, 304. Figure Drawing and 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.

305. History and Appreciation of Art: Italian Renaissance. 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. Prereq.: Art 113, 114. 3 h. c.

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. Prereq.: Art 203, 204 or equivalent.

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 3 h. c. previous training in art is required.

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, experiments 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.

Application of experiences in Art 316, 317. Interior Decorating. 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.

Jewelry and Metal Work I. Designing and shaping of 319. 320. copper ware: punching, etching, engraving. Jewelry design and fabrication. The properties and limitations of metals, learned through experience. Prereq.: Art 110, 111. Art 319 is prerequisite to 320. 3 + 3 h. c.

325, 326. Pottery and Modeling. Pottery-shaping: coiling, handbuilding, pinching; decoration and glazing; fashioning figures and heads to arrive at sculptural form; mold-making and casting; bas-relief. Prereq.: 3 + 3 h. c. Art 110, 111. Art 325 is prerequisite to 326.

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.

- 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. Figure Drawing and Painting II. Continuation of Art 303, 304. Art 403 is prerequisite to 404.
- 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. Prereq.: Art 113, 114, 305, and 306. 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. Prereq.: Art 325, 326. Art 410 is prerequisite to 411.
- 419. Jewelry and Metal Work II. Advanced work in processes: new problems in brass, silver, copper, and gold. Prereq.: Art 319, 320.

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

First Year 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 H. & P. E. 107 and 108 Health Ed. 1½ H. & P. E. activity courses 1 Orientation 100 13 33	Second Year Art 203, 204 Drawing and Painting Art elective (200 or above) Comm. 107 Basic Course III Engl. 200, 203, 204, 205, 206, or 275 *Foreign language (or electives) Hist. 201 and 202 The United States H. & P. E. activity courses Psych. 201 General Psychology
Third Year	Fourth Year Art 305 History and Appreciation of Art: Italian Renaissance Art 306 History and Appreciation of Art: Modern *Mathematics or other science Sp. and Dram. 219, 220 Play Production I Flectives (Upper Division) 12-13 *See pages 60-62.

Astronomy

Dustheimer

Lower Division Courses

103. Descriptive Astronomy. A descriptive and non-mathematical study of the solar system and the stars. A comparison of present theorem of the universe. Observations with the telescope and field glasses will be made.

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.: Mathematics 103 or high school trigonometry.

Bible

See Philosophy and Religion; also Humanities.

Biology

C. Worley: C. Evans, Hirabayashi, Marcy, Tucker, Webster, I. Worley: Staff.

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 desire to teach the biological sciences: and those who
plan to enter professional fields such as medicine, nursing, pharmacy, for-

General biology majors must take Biology 103, 124, 125, 224, 225, 321, and 414, and electives from Upper Division courses. Chemistry 321, 322 Biological Chemistry, may be counted toward a biology major.

estry, horticulture, and others requiring a knowledge of biology.

Pre-medical students and co-operative nursing students should consult the special curriculums at the end of the College of Arts and Sciences section.

Lower Division Courses

- 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.
- 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.
- 117. Spring Flora. Classification of vernal flowering plants. Fifty-four contact hours. Latter half of spring semester. I h. c.
- 118. Woody Plants, Summer. Classification of woody plants while in leaf. Fifty-four contact hours. Latter half of spring semester, or summer school.

 1 h. c.
- 119. Summer Flora. Identification of flowering plants exclusive of composites, umbels, and other difficult families. Fifty-four contact hours.

 Summer school only.

 I h. c.
- 124. Botany: Lower Forms. The thallophytes and bryophytes. Two two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 103. Fee: \$10.00.
- 125. Zoology: Invertebrates. Completion of comprehensive study of the invertebrates. Two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 103. Fee: \$10.00.
- ogy, and conservation of local fishes. Field and laboratory work, 108 contact hours. Summer school 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 school only, 2 h. c.
- 151-152. Functional Anatomy of the Human. Dissection of a mammal, to illustrate the structures of the human body. Considerations 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. Fee: \$10.00 each semester.

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- 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. Prereq.: Chemistry 100 or 101. Fee: \$10.00.
- 219. Advanced Summer Flora. Identification of the more difficult flowering plants. Fifty-four contact hours. Summer school or first half of fall semester. Prereq.: Biology 119, or consent of instructor.
- 224. Botany: Vascular Plants. A comprehensive study of the pteridophytes and spermatophytes. Three two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 103. Fee: \$10.00.
- 225. Zoology: Vertebrates. A comprehensive study of the morphology and taxonomy of the chordates. Three two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 103. Fee: \$10.00.
- 230. Anatomy and Physiology I. The dissection and interpretation of the cat, with correlations with the structures of the human body. Three two-hour laboratory-discussion periods a week. Prereq.: C or better in Biology 225. Fee: \$10.00.
- 250. Anatomy and Physiology II. Functions of the human body. Three one-hour lectures a week. Prereq.: C or better in Biology 230 or permission of the instructor.

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 the consent of the instructor. Fee: \$10.00.
- 308. Vertebrate Embryology. Germ cells. maturation types of cleavage and gastrulation. and the development of the frog. chick, and mammal. Living material used in demonstration. Two one-hour lectures and two two-hour laboratory periods a week. Prereq.: C or better in Biology 225. Fee: \$10.00.
- 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 225. Fee: \$10.00.
- 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.: permission of the instructor. 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 225. 3 h. c. Fee: \$10.00.
- 321. Genetics. Principles of inheritance, organic evolution, and eugenics. Three one-hour lectures a week. Prereq.: C or better in Biology 224 or 225.
- 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.
- 332. Plant Physiology. The chemistry, physics, and functions of green plants. Two one-hour lectures and two three-hour laboratory

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periods a week. Prereq.: C or better in Biology 224. Fee: \$10.00. Offered in alternate years. 4 h. c.

383. Ward Management and Teaching. The fundmental 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 in biology. Prereq.: standing as registered nurse.

3 h. c.

405. General Physiology. An introduction to the basic processes common to all organisms. Five one-hour lecture-demonstration periods weekly. Prereq.: two years of biology and one year of 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 permission of the instructor. Fee: \$10.00. Offered in alternate years.

408. Biological Techniques. The techniques of making microscopical preparations, plastic mounts, models, etc. Two three-hour laboratory periods a week. Prereq.: 20 semester hours of biology and permission of the instructor. Fee: \$10.00.

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 by staff. Fee: \$10.00.

413. Seminar: Historical. Lectures, readings, and discussions relevant to the history of biology and to classics in the field. Six hours a week. Prereq.: permission of the staff.

414. Seminar: Current. Examination of monographs, periodicals, pamphlets, etc. Written reports, with round-table discussions of them. One hour of class and five hours of assigned work a week. Prereq.: permission of the staff.

2 h. c.

416. Systematic Botany. The theory of plant taxonomy. Prereq.: permission of instructor.

3 h. c.

Botany

See Biology.

Chemistry

E. Scudder; W. Beckman, Bien, Bridgham, Cohen, Luginbill, McCoy; Elder, Goudsmit, Littman, Musselman.

A student studying for the degree Bachelor of Science with a major in chemistry must take Chemistry 111-112 (or 109-110 if he has not had a satisfactory year of high school chemistry), 203, 204, 217, 218, 221, 222, 301, 302, 303, 304, 407, 408, 409, 410, 423, 424, and six hours of additional advanced work in chemistry. Certain upper level courses in chemical engineering will be accepted toward meeting this advanced work requirement. Also required are two years of mathematics, including calculus: one year of physics; and a reading knowledge of scientific German or French.

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

Following the descriptions of courses, curriculums are suggested for the degrees of Bachelor of Science with a major in chemistry and Bachelor of Science with a major in metallurgy.

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.

103. The Slide Rale. Logarithms significant numbers and manipulation of the slide rule. Problems in chemistry are emphasized. 1 h. c.

- 109-110. General Chemistry. The fundamentals of chemistry for those who have not studied chemistry in high school. Three lectures and recitations and five hours of laboratory a week, including two discussion periods. Prereq.: two years of high school mathematics. Fee: \$10.00 per semester.
- 111-112. General Chemistry. The fundamentals of chemistry for those who have had a satisfactory year of high school chemistry. Three lectures and recitations and four hours of laboratory a week, including one discussion period. Prereq.: One year of high school chemistry and two years of high school mathematics. Fee: \$10.00 each semester. 4 + 4 h. c.
- 115-116. Everyday Chemistry. For students who wish to take chemistry for its cultural value. Emphasis on the chemistry of things with which we have daily contact in the home, the parks and fields, and in business and industrial life. Only the simpler mathematical phases are involved. Not accepted toward credit for a major in chemistry or for engineering. A student who has taken this course may take additional courses in chemistry providing he first takes Chemistry 110. Three lectures and recitations and one three-hour laboratory period a week. Fee: \$10.00 each semester.
- 115S-116S. Everyday Chemistry. The same as Chemistry 115-116 except that laboratory work is not included. 3+3 h. c.
- 203, 204. 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 are strongly stressed. One hour lecture and three hours of laboratory per week. Prereq.: Chemistry 112 or the equivalent. Fee: \$10.00 per semester.
- 209. Elements of Organic Chemistry. A survey of the fundamental principles including laboratory familiarization with standard apparatus and procedures. Primarily for students in home economics and dietetics. Three one-hour lectures and two three-hour laboratory periods a week. Prereq.: Chemistry 100, 110, 112 or 116. Fee: \$10.00.
- 215. Techniques of Glass Blowing. The course is designed to teach the rudimentary techniques of glass blowing needed in present day laboratory work. Various types of glass are used and the relation of the composition to working properties is consirered. The course requires three hours of laboratory per week with discussion. Prereq.: standing as a major in chemistry. Fee: \$10.00.
- 217. Chemical Literature and Technical Writing. Examination of standard reference works, periodicals, pamphlets, etc., with written reports following various technical writing procedures. One hour of class work and three hours of reference and composition work a week.

 1 h. c.
- 218. The Growth of Chemical Theories. A survey of early philosophic thinking and its effect on scientific development. Evolution of critical scientific thinking in the field of chemistry and the development of theories based on careful experimental work. Prereq.: Chemistry 112 or consent of instructor.
- 221. 222. Organic Chemistry. A systematic study of organic compounds, reactions and theories, with laboratory work in typical prepara-

tions and tests. Three lectures and three hours of laboratory per week. Chemistry 221 is offered every fall semester and the first summer session, 222 every spring semester and second summer session. Prerequisite or concurrent: Chemistry 203 or consent of instructor. Fee: \$10.00 each semester. 4 + 4 h. c.

Upper Division Courses

- 301, 302. Intermediate Inorganic Chemistry. A systematic study of the periodic classification of elements, and of certain descriptive inorganic chemistry: theoretical concepts: the preparation of representative inorganic compounds and the analyses for purity. Various types of techniques are studied; e.g., crystallization, fusion, non-aqueous solvent technique, oxidation-reduction, ion exchange, sealed tube technique, vacuum technique. Prereq.: Chemistry 204. Fee: \$10.00 each semester. 2 + 2 h. c.
- 303, 304. Quantitative Analysis. The applications of chemical equilibrium in the measurement of the amounts of ions present in inorganic substances. Both solids and solutions are analyzed by standard gravimetric or titrimetric procedures. Extensive practice in the use of an analytical balance and of volumetric apparatus to measure relatively high percentages of constituents, and some use of colorimetric apparatus. Emphasis on the influence of pH and other factors on all of the reactions taking place. Extensive calculations involving many types of quantitative procedures. One lecture and six hours of laboratory work each week. Prereq.: Chemistry 203-204. Fee: \$10.00 each semester.
- 309. Plastics. A course in the fundamentals of chemistry pertaining to plastics. Two hours of lecture and recitation per week. Prereq.: 2 h. c.
- 321, 322. Biochemistry. The chemistry of living organisms. The study involves work in both plant and animal life in a broad sense; a study of biochemical methods now used; composition of cell structural parts in relation to their functions; biochemical substances; the unusual reactions which proceed in living organisms; and the overall result of many reactions; the growth of organisms. In the rapidly advancing portions of the subject, the latest research results are included. Two hours of lectures and three hours of laboratory work each week. Prereq.: Chemistry 203-204 and 221-222 and at least one course in biology. Fee \$10.00 each semester. 3+3h.c.
- 330. Chemical Microscopy. Analysis by means of procedures carried out on slides and observed under the microscope. Precipitation, filtration, decantation, sublimation, fusion, etc., permit the identification of the elements separately and from mixtures. Trace amounts of unknowns may be readily detected. One hour of lecture and six hours of laboratory a week. Prereq.: Chemistry 303. Fee: \$10.00.
- 340-341. Principles of Chemical Engineering. Identical with Engineering 380-381.

 3 + 3 h. c.
- 342. Chemical Engineering Techniques. Identical with Engineering 382.
- 343. Fuels and Fuel Analysis. The study of various fuels and the analysis of natural and artificial gases, gas calorimetry, analysis and calorimetry of coal, and analysis and physical testing of oils. One lecture and two three-hour laboratory periods a week. Prereq.: Chemistry 303. Fee: \$10.00.
- 345. The Rarer Elements. A study of the rarer elements, including preparation, properties and qualitative separation. Prerequisite or concurrent: Chemistry 302.
- 349, 350, 351. Unit Operations. A study of the development and application of the theoretical concepts involved in the physical conversions

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ganic paraof matter as to state, flow, particle size, diffusion and absorption, in relation to the energy transformation and transfer requirements accompanying or effecting such changes. Prereq.: Chemistry 340-341 and 342. Identical with Engineering 383, 384, 385.

- 405, 406. Advanced Analytical Chemistry. A study of the theoretical foundations of instrumental procedures, and the application and use of instruments in analytical work. Prereq.: Chemistry 304. Fee: \$10.00 each semester. 2+2h. c.
- 407, 408. Physical Chemistry. The principles of theoretical chemistry. including the structure of matter, equilibria, chemical kinetics, chemical thermodynamics, electro-chemistry, catalysis, and mechanism of reactions. Prereq.: Mathematics 210 and 20 semester hours in chemistry, metallurgy or physics. Chemistry 407 is prerequisite to Chemistry 408. 3+3h. c.
- 409. 410. Physical Chemistry Laboratory. Quantitative investigation of gas laws, surface tension, speed of reaction, solutions, phase diagrams, electromotive force, hydrogen ion concentration and absorption. Two three-hour laboratory periods a week, including a discussion period. Prerequisite or concurrent: Chemistry 407, 408. Chemistry 409 is prerequisite to 410. Fee: 10.00 each semester.
- 411. Thermodynamics. Classical and axiomatic presentation of the laws of thermodynamics: thermodynamic functions and their applications to ideal systems. Listed also as Physics 411. Prereq.: junior standing with major in chemistry or physics.
- 412. Thermodynamics. Fugacity, activity and activity coefficient; non-ideal systems: strong electrolytes, theory of Debye and Huckel; the third law of thermodynamics, and statistical mechanics. Listed also as Physics 412. Prereq.: Chemistry 411.
- 415. Electro-Chemistry. The fundamental principles and applications of electro-chemistry, including potentiometric measurements, electrolysis, conductance, theories of Cnsager and Flakenhagen, the relationship of electrochemical cell voltages to activities, free energies and entropies of aqueous salt solutions, and the Debye-Huckel theory of strong electrolytes. One lecture and two three-hour laboratory periods a week. Prereq.: Chemistry 304 and junior standing. Fee: \$10.00.
- 419. Advanced Inorganic Chemistry. Theories of inorganic chemistry. Prereq.: Chemistry 302.
- 421. Advanced Organic Chemistry. An introduction to advanced study in organic reactions and theories. Two lectures per week. Offered summers for ten weeks. Prereq.: Chemistry 222.
- 423, 424. Organic Analysis. Qualitative organic analysis. One lecture and three hours of laboratory during first semester, six hours of laboratory including one discussion per week during second semester. Chemistry 423 is offered every fall semester and 424 every spring semester. Prereq.: Chemistry 222 and 304. Fee: \$10.00 each semester. 2 + 2 h. c.
- 430. Unit Design. The development and study of apparatus to carry out laboratory proved reactions. Prereq.: junior or senior standing with major in chemistry, physics, or chemical engineering, and permission of the department head. Fee: \$10.00. Identical with Engineering 480.

 Hours and credit to be arranged.
- 450. Group Research. Each student works on a different phase of a group problem; the work is coordinated and closely supervised by the instructor. Prereq.: senior standing, candidacy for the Bachelor of Science degree, and at least 30 semester hours of chemistry with a B average or better. Fee: \$10.00.
- 452. Chemistry Seminar. Reports and discussions of research studies and problems. Prereq.: Chemistry 450.

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Curriculums

If either of these curriculums is to be completed in four years, some courses must be taken in summer terms to avoid overloading.

Chemistry

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

	Control of the Contro
First Year Chem. 111-112 General Chemistry 8 (109-110 if no high school chemistry) Comm. 105-106 Basic Course I-II 6 Mathematics 10 Soc. Sci. 101, 102 Introduction to the Social Sciences 6 H. & P. E. 107, 108 Health Education 1½ H. & P. E. activity courses 1 Orientation 100 4½ 33	Second Year Hrs. Chem. 203, 204 Qualitative Analysis 8 Chem. 221, 222 Organic Chemistry 8 Chem. 218 History of Chemistry 1 German 101-102 Elementary German 6 Math. 209-210 Calculus 10 Hist. 201, 202 The United States 6 H. & P. E. activity courses 1 36
Third Year Hrs. Chem. 217 Chemical Literature 1 Chem. 301, 302 Intermediate Inorganic Chemistry 4 Chem. 303, 304 Quantitative Analysis 6 Comm. 107 Basic Course III 3 German 215-216 Chemical German 6 Physics 201, 202 General Physics 6 Physics 2011, 202L General Physics Laboratory 2 Electives (biology recommend) 6 34	Fourth Year Hrs. Chem. 407, 408 Physical Chemistry 6 Chem. 409, 410 Physical Chemistry Laboratory 4 Chem. 423, 424 Organic Analysis 4 Philosophy and Religion elective or Humanities 401 or 402 3 Electives (Upper Division chemistry) 6 Electives (Upper Division) 10 33

Metallurgy

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

with a Major in	n Metallurgy
First Year Hrs. Chem. 111-112 General Chemistry 8 (109-110 if no high school chemistry) Comm. 105-106 Basic Course I-II 6 Engr. 101 Engineering Drawing 2 Mathematics 10 Soc. Sci. 101, 102 Introduction to the Social Sciences 6 H. & P. E. 107, 108 Health Education 11/4 H. & P. E. activity courses 1 Orientation 100 1/4 35	Second Year
Third Year Chem. 303, 304 Quantitative Analysis 6 Engr. 351, 352 Physical Metallurgy 6 Engr. 351L, 352L, Metallography Laboratory 3 German 215-216 Chemical German 6 Hist. 201, 202 The United States 6 Electives 8	Fourth Year Chem. 407, 408 Physical Chemistry 6 Chem. 409, 410 Physical Chemistry Laboratory Laboratory 4 Chem. 411, 412 Thermodynamics 4 Engr. 453, 454 Advanced Metallography 3 Engr. 455 Iron and Steel Metallurgy 3 Engr. 456 Nonferrous Metallurgy 3 Philosophy and Religion elective or Humanities 401 or 402 3 Electives (Upper Division science and mathematics) 6 35

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 401 and 402 and Philosophy and Religion 309 and 330.

Communication

English and Speech Staffs

Communication 105-106-107 is the course ordinarily taken to meet the general requirements in communication. It may be counted toward a major in English, on the approval of the head of the Department of English.

Day students take Orientation 100 in conjunction with Communica-

tion 105.

Non-credit Course

10. English for Foreign Students. An intensive course in speaking, comprehending, reading, and writing English as a second language. The course will include both class instruction and drill. This course is designed for foreigners who have an elementary knowledge of English, but one which is inadequate for the needs of the college classroom. The class will meet 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 will carry no credit, but upon recommedation of the instructor, 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.

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. (For certification, graduation, and transfer purposes, this course may be interpreted as six hours of composition and three hours of speech.) Concurrent with 105, for day students: Orientation 100.

Dramatics

See Speech and Dramatics.

Economics

J. Smith; Kermani, McCarty, Mackall, Niemi, Whitelock; Callahan,

Desing. Sevasten, Weidman, Zimmerman.

A major in economics consists of 24 semester hours in addition to Social Science 101 and 102 and History 201 and 202. Courses in other units and departments for which credit may be given toward the major in economics are Geography 119. Economic Geography: History 301. Economic History of Europe: History 302. Economic History of the United States: Business Organization 221. Mathematics of Finance: Merchandising 224. Marketing: and Engineering 465. Methods Engineering 1. The major is designed to prepare students for research and statistical work in business and government service and to give a foundation for graduate study in the field.

For economic geography, see also Business Organization 120.

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. Staff. 3+3 h. c.

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Upper Division Courses

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princisystem. 3 h. c. 303. Financial Organization. Intended to furnish a foundation for the more technical studies in the field of finance, and to describe the fiancial institutions with which most people come in contact, such as the commercial bank, the building and loan association, and the finance company. Staff.

304. Public Finance. The development and present status of public finance; federal, state, and local taxation; public credit; the budget; financial administration. Kermani.

- 305. Economic and Social Statistics. 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. Listed also as Sociology 305. Staff. 3 h. c.
- 315. Corporation Finance. Promotion of new industries, capital structure of corporations, evolution of a business, working capital, surplus, dividends, voting trusts, investment trusts, public utilities, co-operative plans, and reorganizations. Prereq.: Business Organization 202. Niemi.

 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. Staff.
- 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 202. Kermani.
- 401. Labor Problems. The history of the labor movement in England and in this country is outlined as a background of discussion of present issues. Smith.
- 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. 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. Kermani. 3 h. c.
- 404. Personnel Management. The background of labor management; selection and training of employees; maintenance of business relationships, including wages and hours policy, safety and health, benefits, and labor relations. Prereq.: Social Science 101 and 102 and History 201 and 202. Staff.

 3 h. c.
- 407, 408. Seminar. Readings in the history of economic thought. Prereq.: standing as senior economics major. Smith. 3+3 h. c.

Education

Swartz: M. Braden, Gabel, Glasgow, Shipman, Webb. Wilcox; Baehler, Batham, Bishop, Cruise, A. Davis, S. Davis, R. Dehnbostel, Flood, Jewett. Laughbaum, Ledger, Lepore, Martin, Miller, Moore, Reese, Robertson, Russo, Schoenhard, Smith, Terpack, Varkonda, Viets, Wagner, Walter, Winsen.

Courses are offered leading to the degree of Bachelor of Science in Education with the major in art education, business education, elementary education, kindergarten-primary education, music education, nursing education, health and physical education, or secondary education, and to the degree of Bachelor of Arts with the major in either education or a teaching

subject. The curriculums for most of these majors appear below, after the last education course description: for those given elsewhere in the catalog, the location is indicated. They include a dual curriculum leading to both high school and elementary school certificates.

Each curriculum leads to an Ohio State Provisional Certificate. Minimum requirements for teachers' certificates are determined by the Ohio State Department of Education: if those requirements change, the new requirements become effective immediately as requirements of the Department of Education of Youngstown University. Teaching candidates at Youngstown University must exhibit better than average capacity as evidenced by required tests and better than average work quality in terms of marks in all their college courses. Admission to the University does not automatically guarantee admission to candidacy for a teaching certificate. This factor is controlled by the Education Department. Students must file an application for admission to the Department of Education, and this application must be approved before they may be permitted to enroll in Upper Division Education courses. Until formally admitted to the Department of Education prospective teaching candidates are designated as Pre-Education students.

A Bachelor of Science in Education degree will be granted only to students who qualify for teaching certificates. Completion of at least 60 hours of required lower division work and specific test and quality criteria are all prerequisite to admission to the Department of Education, which normally will not occur until a candidate's third year. (An exception to this statement and to the 60-hour requirement is noted in the case of elementary candidates seeking a cadet certificate. A separate bulletin, available from the Department of Education, deals with this program.) The instructor in the Education 101 course will deal at considerable length with the specific requirements mentioned here, so this course should definitely be scheduled during the first or second term.

Pre-Education students receive advisement and counseling from the general faculty of the College of Arts and Sciences or from the faculty of their special school or department during the first 60 hours of lower division courses. Upon admission to the Upper Division and to the Department of Education, advisement and counseling become the responsibility of the Education Department faculty, either independently (where the major is Education) or in cooperation with the department or the school of the student's major area (for other than an Education major).

A course in student teaching (Education 404 or 405) is required in each curriculum. Its admission requirements are high, and each student planning to complete the requirements for a certificate at Youngstown University is urged to read the descriptions of Education 404 and 405.

A candidate for the Provisional High School Certificate must complete the requirements for at least one teaching field, and he should complete the requirements for as many fields as possible. He should observe carefully the requirements in the various fields as stated in the Handbook for Prospective Teaching Candidates at Youngstown University, a copy of which may be obtained from the office of the Department of Education.

A student who expects to teach in high school or elementary school should consult with an advisor in the Department of Education to insure that his plans for professional preparation are satisfactory. He is urged to participate in extracurricular activities in college in order to be qualified to direct such activities in the public schools.

A major in education consists of 30 semester hours, and satisfies the major requirements of either the Bachelor of Arts or the Bachelor of Science in Education degree. Within the limits allowed by the certification requirements, credits toward an education major may be given for the following courses in other departments:

English 251, Modern American English

Health and Physical Education 321C, Health Education in Elementary Schools

Health and Physical Education 322C, Physical Education for Elementary Grades

Health and Physical Education 415C, School Health Education

Music 315-316, Music in the First Six Grades

Music 321. Music Education for Elementary Teachers Music 411-412, Junior and Senior High School Methods

Psychology 201, General Psychology

Psychology 202, Psychology of Education Psychology 305, Child Psychology

Psychology 306. Psychology of Adolescence

Psychology 308. Personality and Mental Hygiene

Psychology 310, Psychological Aspects of Personnel Relations

Psychology 405, Interviewing and Counseling Psychology 406. Vocational Guidance

Psychology 425, Guidance of High School Students

Education 101 is prerequisite to any other course in education unless waived by the head of the Department of Education.

Non-Credit Courses

- English for Proficiency. A course for prospective teachers who need improvement in English usage and proficiency. Enrollment by permission of the Education Department 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 Education Department, provided that they have shown promise as interpreted by course marks and other entrance criteria. Evaluated as 3 hours for load and billing purposes. No Credit.
- Arithmetic for Proficiency. A remedial and drill course for elementary teachers. May be required as a prerequisite for Education 313 (The Teaching of Arithmetic), where need is shown. Evaluated as 3 hours for load and billing purposes. No Credit.

Lower Division Courses

- Introduction to Education. Thorough orientation in state, institutional, and departmental policies pertaining to graduation and certification requirements, and presentation of a broad background for subsequent courses in education, with wide supplementary reading.
- 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 book departments, libraries, and classrooms. 3 h. c.

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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.

Upper Division Courses

Open only to students who have been approved for admission to the Department of Education.

301. 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 in-Observation of teaching in high schools. struction.

304. Classroom Management. Problems of classroom administration. control, and organization: attendance, curriculum, program, procedure, and extracurricular activities in the light of a modern philosophy of education.

Observation of teaching in public schools.

305. Apprenticeship. For elementary school teachers. Experience in an actual elementary school situation under the direction of a regular elementary school teacher. An elective for elementary candidates except that the course may be required in individual cases at the discretion of the 3 h. c. Head of the Department of Education.

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.

308. Educational Sociology. The sociological foundations of educa-tion: the relation of the individual and the social group; the school as a social institution: the relations between education and the home, the com-munity, 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. Listed also as Sociology 308.

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.: 3 h. c. junior or senior standing.

Methods of teaching penman-312. The Teaching of Handwriting.

ship; improving the student's own handwriting.

Principles in the learning of 313. The Teaching of Arithmetic. arithmetic and their application to its effective teaching. 314. The Teaching of Content Subjects. Principles effective in the

learning of content subjects, and their application to the teaching of history.

geography, and other content subjects.

Various points of view on extra-Extracurricular Activities. curricular 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.

320. Statistical Methods in Education. Identical with Psychology 320.

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 acquisition 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.

- 322, 323. Crafts and Advanced Crafts. Creative experiences in many kinds of material used in elementary and high schools, such as paper, cloth, wood, clay, metal, and scrap materials. Education 322 is prerequisite to 323. 3+3h.
- 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. Many 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 adapted to boys and girls 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.
- 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.
- 332. The Exceptional Child in the Regular Classroom. The fundamentals of special education for the classroom teacher. Discovering the exceptional child: the causes, prevention, and treatment of physical and mental handicaps in children; handling mentally gifted children and those who are behavior problems. Prereq.: Psychology 201. Listed also as Psychology 332. Elective.
- 333. Philosphy of Education. Identical with Philosphy and Religion 333. Elective.
- *351. Guidance and Character Formation. The purpose of this course is to supply principles for guiding and directing the moral growth and development of the child. Special efforts are made to provide the means and techniques necessary to aid the child in developing self-control through a disciplined will, suitable habits, emotional balance, and right attitudes. Elective.
- 352. The Elementary School Curriculum: Basic Principles and Cuntent. The philosophical principles which guide the selection of materials for the elementary school curriculum, with a study of the allocation of those materials in the different years and subject-matter areas. Elective. 3 h. c.
- *353. Social Studies in the Roman Catholic Elementary School Curticulum. The basic philosophical and theological principles governing the area of the social studies, with particular reference to the Roman Catholic elementary schools. Elective.
- *354. Roman Catholic Philosophy of Education I. On the premise that a philosophy of education implicity or explicity is founded on a philosophy of life and an answer to life's basic problems, this course investigates and analyzes the assumptions and principles underlying the various modern philosophies of education. Elective.

 3 h. c.
- sentations of the Roman Catholic Philosophy of Education II. The classic presentations of the Roman Catholic philosophy of education are analyzed to discover the basic principles. Modern practice is examined and criticized in the light of these principles. Elective.

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^{*}Designed for members of Roman Catholic religious orders and lay teachers in Roman Catholic schools. Does not satisfy the University's general course-requirement in religion. May not be substituted for courses required in any certification pattern. May be used as electives only.

- 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 head of the department of his major teaching subject. Prereq.: Education 301 and senior standing.
- 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.
- 404. Supervised Student Teaching and Apprenticeship: High School. Observation and teaching of high school classes, under supervision. Taken in the last semester in the University.

Application. Application to take this course must be made on a special form, not later than the end of the fourth week of the preceding semester.

Prerequisites. The applicant must have senior standing at the time of application; a point index of 1.5 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; a percentile rank of 34 or higher in the Ohio State University Psychological Test, and of 40 or higher in the American Council on Education Co-operative English Test; and the unqualified approval of the head of the department of each of his teaching fields and of the head of the Department of Education.

Quality and Nature of Work. Classroom teaching must be satisfactory at all times or it may be discontinued without warning. The apprenticeship part of the course is under the direction of the principal of the high school to which the student is assigned or under someone designated by the principal. Besides teaching, the apprentice teacher may be assigned to any duty that a regular teacher might have to perform. Students failing to attend the first conference will be automatically dropped.

Schedule. The applicant, if accepted, leaves a half-day free, every day, in his schedule for the semester in which he takes this course. One class meeting each week; individual conferences with the course instructor or with the regular classroom teacher, as needed. Fee: \$10.00. 6 h. c.

- 405. Supervised Student Teaching: Elementary Education. The same as Education 404, but for the elementary grades. Fee: \$10.00.
- 413. The Teaching of Reading. 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.
- 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.
- 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.
- 433. Teaching Slow Learners in the Regular Classroom. Problems, techniques, and helps, with opportunity to study individual problems and attention to curricular units, guidance, and planning. Elective. 3 h. c.



Art Exhibit at Butler Institute

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Life Class





Science Activity

Zoology Laboratory



- 434. Teaching the Mentally Retarded Child. Materials, equipment, and general course of study applicable for severely retarded (mentally handicapped) children. Emphasis on children below the I. Q. of 50. Prereq.: successful teaching experience or Psychology 305 plus at least 6 hours of elementary methods. Elective.
- 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.

 3 h. c.

Education Curriculums

Semester-by-semester curriculums may be obtained from the Department of Education.

(An asterisk or other reference mark in any of these curriculums refers to a note immediately following the curriculum in which the mark is used.)

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: General6
Comm. 105-106 Basic Course I-II 6
Educ. 101 Introduction to Education 2
Soc. Sci. 101 and 102 Introduction to
the Social Sciences
Science
H. & P. E. 107 and 108 Health Ed. 11/4
H. & P. E. activity courses
Orientation 100
72
32

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	3
Hist. 201 and 202 The United State	s 6
Psych, 201 General Psychology	3
Psych. 202 Psychology of Education	1 3
H. & P. E. activity courses	. 1
	31
	91

Application for admission to the Department of Education must be approved at the end of the sophomore year or the course changed.

Art 223 Advertising Art I	Hrs
Art 303, 304 Figure Drawing and	
Educ. 301 Principles of Teaching .	
Educ. 304 Classroom Management	-
Educ. 322 Crafts Educ. 308 Educational Sociology	
Mone, 324 Teaching of Art.	
Science Elective (Upper Division)	
	3

Fourth Year Hrs.
Art 306 History and Appreciation
of Art: Modern3
Art 319 Jewelry and Metal Work I . 3
Art 325 Pottery and Modeling 3
Art 329 Sculpture3
Art 350 Architectural Drawing 3
Educ. 404 Supervised Student
Teaching and Apprenticeship:
High School
Philosophy and Religion elective, or
Humanities 401 or 4023
Electives (Upper Division)7
91

Dual Curriculum

Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Education and to both the Elementary and the High School Provisional Certificates

First Year Comm. 105-106 Basic Course I-II	Hrs
Muc. 101 Introduction to Educa	tion :
the Social Sciences	n to
P. E. 107 and 108 Health F	d. 11/
Orientation 100	1/
	to 34

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, 275	or 3
Hist. 201 and 202 The United Si	tates 6
Psych. 201 General Psychology	3
Psych. 202 Psychology of Educa *Science	tion 3
H. & P. E. activity courses	1
Teaching Field	3
	31

Application for admission to the Department of Education must be approved at the end of the sophomore year or the course changed.

Third Ye	ar Hrs.
Educ. 301 Principles of	f Teaching3
Edua 304 Classroom	Management2
Edna 308 Educational	Sociology2
Educ 313 Teaching of	Arithmetic
Educ. 314 Teaching of	Content
Subjects	
DA. 200 Crafts	3
Educ. 324 Teaching of	Art2
Educa 412 Teaching of	Reading
H. & P. E. 321C Heal	th Teaching in
Elementary Grades	2
H. & P. E. 322C Gam	es for Elemen-
tary Grades	2
Mus. 321 Music Educa	tion for
Elementary Teacher	2
Elementary Teacher	on elective
Philosophy and Religion or Humanities 401	311 GIGCTIVE,
or Humanities 401 6	3
Teaching Field	
	33

		Fourth	Ye	ar			Hr
Educ.	400	Special I	Meth	ods .			
Educ	401	Principle	s of	Edu	cati	on	
Edwa	404	Student	Tea	ching			
Hier	h S	chool					
Edina	105	Student	Te	achin	E :		
Tel las	ment	ary Scho	oI .				
Teach	ing	Field					1
1 0	10						3

*Any laboratory or non-laboratory science will satisfy the requirements within limits. as noted in this catalog. If any one science is to be the student's teaching field, the selected science necessarily will be in that area. For example, Biology 103 (3 hours) would be followed by Biology 124 (2 hours) for the biology teaching field; Chemistry 109 (5 hours) would be followed by Chemistry 110 (5 hours) for the chemistry or physical science teaching field, etc.

**For the teaching field in English, the student should take English 203.

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-II6
Education 101 Introduction to Education 2
Geog. 102 Principles of Geography 3
Hist, 105 or 106 History of West-
ern Civilization3
Mus. 121 Introduction to Music for
Elementary Teachers
Science 6
Soc. Sci. 101 and 102 Introduction to
the Social Sciences 6 H. & P. E. 107 and 108 Health Ed. 11/2
H. & P. E. activity courses
Orientation 100
Orientation 100
31

Second Year	drs.
Comm. 107 Basic Course III	. 2
Educ. 214 Children's Literature	
Educ. 225 General Art	
Engl. 200, 203, 204, 205, 206, or 275	h 9
Engl. 251 Modern American Englis Hist. 201 and 202 The United State	R E
Mus. 221 Music Literature and A)-
preciation for Elementary Teacher	0 %
Psych. 201 General Psychology	. 4
Psych. 202 Psychology of Educatio	1 0
Science	
H. & P. E. activity courses	33

Application for admission to the Department of Education must be approved at the end of the sophomore year or the course changed.

Education Third Year Educ. 304 Classroom Management . . 2 Educ. 308 Educational Sociology ... Educ. 310 Educational Measurement and Guidance ... Educ. 312 Teaching of Handwriting .1 Educ. 313 Teaching of Arithmetic . .3 Educ. 314 Teaching of Content Subjects Educ. 322 Crafts
Educ. 324 Teaching of Art
H. & P. E. 321C Health Teaching in Elementary Grades H. & P. E. 322C Games for 2 Elementary Grades Mus. 321 Music Education for Elementary Teachers Philosophy and Religion elective, or Education.

Fourth Year	Hrs
Educ. 401 Principles of Education	8
Educ. 405 Supervised Student	
Teaching: Elementary School	9
Educ. 413 Teaching of Reading	3
Electives (or, for Kindergarten	Pri-
mary, Educ. 431 and 432 Childhe	bod
Education)	6
Electives (Upper Division)	9
	30
	90

Kindergarten-Primary Education

Hrs.

A Kindergarten-Primary Certificate may be earned by taking Education 431 and 432 in addition to the elementary education curriculum, and taking 3 semester hours of the student teaching credit in student teaching in the kindergarten and 3 in a primary grade, preferably the first grade.

Business Education

For a business education curriculum, consult the Department of

Health Education and Physical Education

For a health education and physical education curriculum, see "Health Education and Physical Education."

Music Education

For music education curriculums, see the Dana School of Music section.

Public School Nursing

For the curriculum leading to the degree of Bachelor of Science in Education for public school nurses, the student may consult the head of the Department of Education.

Secondary Education

Required Curriculum Leading to the Degree of Bachelor of Arts and a Provisional High School Certificate

The degree 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	
Comm. 105-106 Basic Course I-II Educ. 101 Introduction to Educati	
Foreign language (or elective) .	
Science Sec. Sci. 101 and 102 Introduction to the Social Sciences Teaching Field elective	(
H. & P. E. 107 and 108 Health Ed H. & P. E. activity courses Orientation 100	. 11/
	32

	Second Year	
Comm. 107	Basic Course	III3
*Engl. 200,	203, 204, 205,	206, or 275 3
Foreign lan	guage (or ele	ectives)6
Hist. 201 ar	nd 202 The Ur	nited States 6
Psych. 201	General Psych	nology 3
	Psychology of	
Science		
H. & P. E.	activity cours	es 1
Teaching F	ield elective .	2
W = 1 24		32

Application for admission to the Department of Education must be approved at the end of the sophomore year or the course changed.

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Hrs.

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Third Year Hrs. Educ. 301 Principles of Teaching 3 Educ. 304 Classroom Management .2 Educ. 308 Educational Sociology 2 Philosophy and Religion elective, or Humanities 401 or 402 3 Teaching Field electives 22	Fourth Year Educ. 400 Special Methods Educ. 404 Supervised Student Teaching and Apprenticeship Teaching Field electives

*For the teaching field in English the student should take English 203.

The student seeking the Bachelor of Science in Education degree should follow this curriculum with the exceptions that a foreign language is not required and that 9 hours of any sciences may be substituted for the 11 hours of sciences specified for the Bachelor of Arts degree.

The student should read carefully the information on science requirements for various degrees.

English

K. Dykema; Ives, J. Harder, K. Harder, Howard, T. Miner, W. Miner, O'Brien, Schultz.

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. 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, 116 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 English literature. However, under special circumstances the instructor may grant permission to enter Upper Division courses without the prerequisite.

Besides the courses described below, credit in English will be given for Humanities 401. Greek Classics and the Old Testament; Humanities 402. Roman, Medieval, and Renaissance Classics and the New Testament; Humanities 403. Early Modern Classics; and Humanities 404. Later Modern Classics.

Non-Credit Course

10. English for Foreign Students. See Communication.

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. (Not offered regularly.) 3+3 h. c.

105-106-107. Basic Course in communication. See Communication.

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.

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

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205, 206. Survey of American Literature. First half: Colonial times to 1860. Second half: Civil War to the present. munication 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.

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 permission of instructor.

275. Introduction to Shakespeare. A critical survey of about 15 of Shakespeare's major comedies, chronicle plays, and tragedies. Prereq.: Communication 107.

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.

353, 354. Advanced Composition, Second Course. A course in writing for mature students, providing opportunity to develop creative ability. Prereq.: preparation satisfactory to the instructor.

I to 3 h. c. + 1 to 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.

355L. News Writing and Reporting Workshop. Application through student publications of the principles of English 355. Six hours of workshop activity a week. Prereq.: permission of instructor. Prerequisite or concurrent: English 355. May be repeated once.

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.

3571. Editing and Make-Up Workshop. Application through student publications of the principles of English 357. Six hours of workshop activity a week. Prereq.: permission of instructor. Prerequisite or concurrent: English 357. May be repeated once.

A 200-level English course, or the permission of the instructor, is prerequisite to any of the following courses.

381. The English Novel. The history and development of the novel in England during the eighteenth and nincteenth centuries. 3 h. c.

The American Novel. The history and development of the novel in the United States during the nineteenth and twentieth centuries.

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 reflectious of some basic problems in modern

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

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.

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

cluded, in translation.

407. American Drama. The emphasis will be mainly on the drama 3 h. c. since 1915.

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

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

English.

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.

471. The Seventeenth Century. Milton and the non-dramatic litera-

ture to 1700.

481. The Eighteenth Century. The major writers of the period but excluding novels and plays.

491, 492. The Nineteenth Century. The major writers of the pe-3 + 3 h. c. riod but excluding novels and plays.

Modern American and British Poetry. An intensive study of poetry in English published since 1890.

Foreign Languages and Literature

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

French

Richardson; C. Dykema; Hammond.

A major in French consists of 24 semester hours above the elementary level, plus 6 hours in Latin, Italian, or Spanish, or 6 hours of upper division French. 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 instructor. Freshmen who satisfy this prerequisite may enter Upper Division courses.

Lower Division Courses

101-102. Elementary French. Fundamental principles of grammar and the reading of simple prose. No credit is given for this course if 3 + 3 h. c the student has credit for two years of high school French.

201. Intermediate French. Modern prose works are read and dis cussed. Grammar is reviewed briefly. Prereq .: C or better in French 102 3 h. c or in second-year high school French.

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 instructor.

Upper Division Courses

325. Advanced French Grammar. A review of the essential rules of French grammar, with particular stress on generic differences between French and English, especially as regards the verb.

French Civilization. A summary study of the geography, his tory, and traditions of contemporary France with a view to facilitating the reading of modern books and periodicals.

327. Cours De Style. Through translation of English literary selections into French and of French passages into literary English, the relative differences in expression between the two languages are studied.

328. French Literary Tradition. A brief survey of the principal significant writers of France together with the reading of selections from the great masterpieces of French literature.

3 h. c.

329. Conversational French. One hour a week of systematic drill in pronunciation, and two hours of conversation based on composition exercises.

3 h. c.

330. Contemporary French Literature. A study of modern France in the writings of such contemporaries as Duhamel, Gide, Giraudoux, Romains, Valéry, and others.

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.

General Science

N. Dehnbostel; Glenny, Klasovsky; Berich, 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. Physical Science. Basic principles and fundamental facts underlying the newer concepts of matter and energy as revealed by chemistry. Problems and questions involving these principles are used to encourage reasoning and the application of the principles to specific problems. (Not open to students who have had high school chemistry.)

3 h. c.

121. Physical Science. Basic principles and fundamental laws of physics as illustrated by mechanics, sound, light, heat and electricity. (Not open to students who have had high school physics.)

3 h. c.

122. Plant and Animal Life. Biological principles of plant and animal life. Physiology, types, distribution, and ecology; relationship to human life and activity. Not open to students who have had one year of high school biology.

3 h. c.

203. Our Natural Resources and their Conservation. Identical with Geography 203. Prereq.: Geography 102.

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: General Science 120 or 121 and General Science 122 or high school biology.

Geography

Glenny, Klasovsky; Berich, Maharry. 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.

201. 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 cli-

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mate and their factors; natural vegetation; soils; the historical geography; the geographical regions. Prereq.: Geography 102.

202. Regional Geography of Latin America. A regional approach to the economic and cultural backgrounds of the countries of South and Central America, stressing the application of geographic principles in Latin-American development and behavior. Prereq.: Geography 102, 119, or equivalent.

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. Prereg.: Geography 102.

204. Regional Climatology. The general principles of climatology. The nature and elements of climate; factors governing climatic types and their distribution; influences on soils, land forms, plants, and man; simplified classification of climates; detailed treatment of the major types of continents. Prereq.: Geography 102 or equivalent. Fee: \$5.00.

225. General Meteorology. Identical with Physics 225. Prereq.: sophomore standing.

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Upper Division Courses

- 301. Geography of World War II. The distributions of raw materials: the need for markets: the German, Italian, and Japanese desire for empire: the British Commonwealth: America as world-wide producer and as a market: the battleground; and geographical problems at the peace table.
- 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 geo-political evolution. Prereq.: Geography 102 and History 202. (Geography 301 is suggested but not required.)

311. Regional Geography of Asia. A regional approach to the economic and cultural backgrounds of the countries of Asia. stressing the application of geographic principles in Asian development and behavior. Prereq.: Geography 102.

312. Regional Geography of Africa and the Middle East. Resource endowments. political affiliations, and stages of economic development of Africa and the Middle East. Prereq.: Geography 102.

Geology

(C. Worley;) P. Scudder; Klasovsky, Maharry. 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 two hours of laboratory work per week.

4 h. c.

101S. Physical Geology. The same as Geology 101 except that there is no laboratory work.

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 two hours of laboratory work per week. Prereq.: Geology 101 or permission of the instructor. 4 h. c.

1028. Historical Geology. The same as Geology 102 except that there is no laboratory work.

German

Richardson; Goodman, Weltman.

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 instructor. Freshmen who satisfy this prerequisite may enter Upper 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 credit for two years of high school German. 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.
- 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 instructor.
- 215-216. Chemical German. A basic course designed to develop expeditously 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

- 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.
- 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.
- 330. Contemporary German Literature. Twentieth century writers and tendencies. Prereq.: German 202 or equivalent. 3 h. c.

Greek

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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 in humanities.

Lower Division Courses

101-102. Elementary Greek. Grammar, syntax, and simple composition; reading selections from various Greek writers and the New Testa-

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of work ment. Introduction to Greek literature, history, and civilization; attention to the Greek element in the English language. 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. 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 the instructor. 3+3 h. c.

Health Education and Physical Education

Men's Department: DiOrio; Rosselli; Carson, Pollock, Reed, L. Reilly; Staff. Women's Department: Laborde; Chuey, Robinson; L. Reilly; 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 $3\frac{1}{2}$ semester hours of credit in health education and physical education. Of these, $1\frac{1}{2}$ hours are in health education (usually Health and Physical Education 107 [1 credit hour] and 108 [$\frac{1}{2}$ credit hour]): the other two, normally, are in physical activity (four one-semester courses, each providing $\frac{1}{2}$ hour of credit).

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 students are scheduled in separate sections for Health and Physical Education 107 and 108. Activity courses may be taken separately or coeducationally, depending on the activity. A woman student purchases the required uniform through the Women's Department of Health Education and Physical Education: a man provides suitable clothing himself, but should consult his instructor first. 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 instructor before buying new equipment.

If a student is excused from the regular activity courses for any reason, the head of the Department of Health Education and Physical Education 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 (\$8.00 for one half-hour of credit), there is a course fee for most half-hour activity courses taken.

Lower Division Courses Meeting the General Requirement For Men

107M. Health Education I. Personal health and good community living, including study of such common disorders as heart disease, cancer, and tuberculosis, and of other communicable diseases and their control. Rosselli.

I h. c.

108M. Health Education II. Home nursing, including care of the sick and the sickroom, bedfast patients, and infants and children. Reilly or Staff.

Activity courses:

116M. Football. Course requirements are met by completing a season of participation as a member of the intercollegiate football squad. Staff.

½ h. c.

117M. Basketball. Course requirements are met by completing a season of participation as a member of the intercollegiate basketball squad. Staff.

12 h. c.

118M. Baseball. Course requirements are met by completing a season of participation as a member of the intercollegiate baseball squad. Staff.

119M. Track and Field. Course requirements are met by completing a season of participation as a member of the intercollegiate track squad. Staff.

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. Y. M. C. A. Staff.

126M. Beginning Wrestling. Elements of wrestling for professional students. Fee: \$2.50. Staff.

of participation as a member of the intercollegiate golf squad. Staff.

137M. Tennis. Course requirements are met by completing a season of participation as a member of the intercollegiate tennis squad. Staff.

152M. Swimming. Course requirements are met by completing a season of participation as a member of the intercollegiate swimming squad. Staff. $\frac{1}{2}h.c.$

Coeducational

206C. Health Principles. The basic principles of personal and community health, including home nursing techniques. May be taken in place of Health and Physical Education 107 and 108 upon approval of the head of the Department of Health Education and Physical Education. Prereq.: sophomore standing. Reilly or Pollock.

213C. Sports Appreciation. The rules, mechanics, skills, social benefits, contemporary status, and other aspects of baseball, football, golf, tennis, skiling, sailing, fishing, and many other sports. Fee: \$2.50. DiOrio or 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 approval of the head of the department. Fee: \$2.50. Staff.

130C. Archery. Techniques of target archery. Consideration is also given to the selection, care, and repair of equipment. Fee: \$2.50. Staff.

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131C. Badminton. The skills, mechanics and rules of badminton.

1/2 h. c. Fee: \$2.50. Staff. Beginning Badminton and Archery. The beginning skills and 132C. rules of badminton and of target archery. Fee: \$2.50. Staff. 1/2 h. c.

134C. Fencing. Fundamentals of foil fencing. Basic techniques of attack and parry and elements of bouting and officiating. Fee: \$2.50. Staff.

Golf. Fundamentals for beginning and intermediate golfers 135C. 1/2 h. c. Fee: \$2.50. Staff.

137C. Beginning Tennis. The skills, mechanics, and rules of tennis with emphasis on the doubles game. Fee: \$2.50. Staff. 1/2 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. The polka, jitterbug, and other popular dance steps are also included. Fee: \$2.50. Staff. 1/2 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. 1/2 h. c.

157C. Beginning Tap Dance. Basic tap technique for the beginner. Fee: \$2.50. Staff. 1/2 h. c.

Intermediate Modern Dance. A continuation of Health and 160C. Physical Education 159W. Consideration is given to problems in composition. Prereq.: Health and Physical Education 159W or permission of the instructor. Fee: \$2.50. Staff. 1/2 h. c.

For Women

107W. Health Education I. Principles of personal health, including posture and body mechanics, body care, nutrition, and the study of such common disorders as heart disease, cancer, tuberculosis and poliomyelitis. Reilly; Staff.

108W. Health Education II. Home nursing, including care of the sick and the sickroom, bedfast patients, and infants and children. Reilly; Staff. 1/2 h. c.

Activity courses:

100W. Physical Activities. Techniques and rules of field hockey, soccer, and volleyball. Prereq.: standing as a freshman physical education major or minor. Fee: \$2.50. Staff. 1/2 h. c.

101W. Physical Activities. Techniques and rules of bowling, basketball, and softball. Prereq.: standing as a freshman physical education major or minor. Fee: \$2.50. Staff. 10W. Team Sports. Techniques and rules of playing field hockey

or soccer and volleyball. Fee: \$2.50. Staff. 1/2 h. c.

111W. Team Sports. Techniques and rules of playing basketball and softball. Fee: \$2.50. Staff. 1/2 h. c.

120W. A, B, C, D Adapted Activities. Designed for students restricted from praticipation in the general program. Physical activities and recreational games are adapted to individual needs and capacities. Prereq.: recommendation of a physician and approval of the head of the department. Fee: \$2.50. Staff. 1/2 h. c.

Archery. Techniques of target archery. Consideration is also given to the selection, care, and repair of equipment. Fee: \$2.50. Staff. 1/2 h. c.

Badminton. The skills, mechanics, and rules of badminton. 131W. 1/2 h. c. Fee: \$2.50. Staff.

132W. Beginning Badminton and Archery. The beginning skills and rules of badminton and of target archery. Fee: \$2.50. Staff. 1/2 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. 1/2 h. c. nces

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134W. Beginning Fencing. Fundamentals of foil fencing. Basic technique of attack and parry, and elements of bouting and officiating. Fee: \$2.50. Staff.

136W. Gymnastics, Apparatus, Stunts, and Tumbling. Gymnastic exercises, stunts, and tumbling activities. Instruction in apparatus includes the horse, box, ropes, trampoline, and buck and parallel bars. Fee: \$2.50. Staff.

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, front crawl. and elementary water safety. For non-swimmers. Fee: \$2.50. Staff.

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 and Physical Education 145W or the equivalent. Fee: \$2.50. Staff.

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 and Physical Education 146W or the equivalent. Fee: \$2.50. Staff.

of plain and fancy diving, including the competitive aspects of swimming and diving. Prereq.: Health and Physical Education 147W or the equivalent. Fee: \$2.50. Staff.

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. The polka, jitterbug, and other popular dance steps are included. Fee: \$2.50. Staff.

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.

157W. Beginning Tap Dance. Basic tap technique for the beginner. Fee: \$2.50. Staff.

159W. Beginning Modern Dance. Fundamental movement techniques, elements of rhythmic and musical patterns. Basic composition. Fee: \$2.50. Staff.

160W. Intermediate Modern Dance. A continuation of Health and Physical Education 159W. Consideration is given to problems in composition. Prereq.: Health and Physical Education 159W or permission of instructor. Fee: \$2.50. Staff.

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 Course

250M. 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.: permission of instructor.

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. Rosselli.
- 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 semestre. DiOrio.
- 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 satsfactory completion. Prereq.: current certification as Red Cross Senior Life Saver. Staff. 2 h. c.
- 369M. 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. The course has a duration of two weeks in Canada. Prereq.: permission of instructor. Fee: Special. Glenny.

 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.: permission of instructor. Fee: \$2.50. Staff.
- 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 and Physical Education 303C. DiOrio. 3 h. c.
- 409M. Coaching of Baseball and Track and Field. Prereq.: Health and Physical Education 312M. DiOrio and Rosselli. 3 h. c.
- 410M. Coaching of Football and Basketball. Prereq.: Health and Physical Education 312M. DiOrio and Rosselli.
- 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. DiOrio.
- 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 commonly encountered in physical education situations. 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.

303C. History and Principles of Health and Physical Education. The historical development and biological, sociological, psychological, and educational principles related to the field of health and physical education. Prereq.: Biology 103, Psychology 202, and junior standing. DiOrio or Laborde.

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. Laborde.

3 h. c.

307C. Community Health Agencies. The administrative interrelationships of special agencies dealing with community health. Prereq.: Health and Physical Education 306C. Laborde. 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 206C. Pollock.

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. Chuey.

404C. Playgrounds: Organization and Administration. Study and practice of techniques involved in the organization and administration of playgrounds. Prereq.: junior standing. Staff. 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. DiOrio.

415C. School Health Education. Principles. curriculum planning, teaching methods, evaluation. organization and administration of health education in elementary and secondary schools. Prereq.: Health and Physical Education 306C. Pollock.

417C. Kinesiology and Applied Anatomy. Muscular structure and function in relation to physical movement; analysis of fundamental movements. Prereq.: Biology 230. Fee: \$2.50. Laborde. 2 h. c.

419C. Teaching of Rhythmic Activities I. Rhythmic and movement fundamentals; methods and materials of teaching folk, square, and social dance. Prereq.: Health and Physical Education 312M or 312W. Fee: \$2.50. Staff.

420C. Teaching of Rhythmic Activities II. Methods and materials of teaching tap and modern dance. Prereq.: Health and Physical Education 419C. Fee: \$2.50. Staff.

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.

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- 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 and Physical Education 418M or 418W. Staff.
- 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 buman communicable diseases. Three one-hour discussion and three one-hour periods of demonstration and laboratory study each week. Fee: \$2.50. Glenny.
- 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 each week, to provide for adequate field observation and training in recognition of communicable diseases and problems. Field trip fee: \$2.50. Glenny.

For Women Lower Division Course

250W. Life-Saving Methods. Techniques of life saving, with Amercan Red Cross methods as the basis of instruction. Upon satisfactory completion, Red Cross certification is granted. Three class hours a week. Prereg.: permission of instructor. Fee: \$2.50. Staff.

Upper Division Courses

- 311W-312W. 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. Laborde, Staff.
- 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. Pre-req.: current certification as Red Cross Senior Life Saver. Staff. 2 h. c.
- 370W. Theory of Camp Counseling. Camp administration, objectives, activities, program planning, and camp craft as related to camp leadership. Trips to nearby camps and camp sites afford practical experience. Prereq.: junior standing and permission of instructor. Fee: \$2.50. J. Laborde.
- 371W. Practice of Camp Counseling. Application of camp leadership skills is emphasized. Supervised counseling is afforded the student through co-operation with nearby camps. Prereq.: Health and Physical Education 370W and permission of instructor. Laborde. I 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 and Physical Education 303C. Fee: \$2.50. Laborde. 3 h. c.
- 407W-408W. Techniques of Officiating. The theory and practice of officiating in field bockey, soccer, basketball, volleyball, softball, tennis, and badminton. 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, basketball, volleyball, softball, and track

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and field. Prereq.: Health and Physical Education 312C. Fee: \$2.50 each semester. Laborde, staff. 3+3 h. ϵ .

418W. 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, dysmenorrhea, post-operative cases, and certain orthopedic conditions. Evaluation of therapeutic exercises and activities. Prereq.: Health and Physical Education 417C. Fee: \$2.50. Staff.

470W. Seminar in Camp Administration. Study of special problems pertinent to camp administration. Prereq.: senior standing. Staff. 2 h. c.

Curriculum

(For the MAJOR in Health Education and Physical Education)

Curriculum 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. 103 General Biology	3
Biol. 225 Zoology: Vertebrate	3
Comm. 105-106 Basic Course 1-II	
Educ. 101 Introduction to Educatio	n 2
H. & P. E. 200C Introduction to He	alth
Ed., Physical Ed., and Recreatio	n 2
Paych, 201 General Psychology	
Soc. Sci. 101, 102 Introduction to th	1e
Social Sciences	6
*H. & P. E. activity courses (4)	2
Orientation 100	1/2
Elective	. 3
	101/2

Third Year (Men) Hrs.
Educ. 301 Principles of Teaching 3
Educ. 304 Classroom Management 2
Educ. 308 Educational Psychology 2
H. & P. E. 201C First Aid and Care
of Athletic Injuries2
H. & P. E. 303C History and Princi-
ples of Health and Physical Ed 3
H & P. E. 307C Community Health
Agencies
H. & P. E. 309M Intramural Sports 3
H. & P. E. 370M Theory of Camp
Counseling, 404C Playgrounds, or
405C Recreational Activities 3
H. & P. E. 409M Coaching of Base-
hall and Track and Field3
H. & P. E. 410M Coaching of Foot-
ball and Baskethall3
H. & P. E. 417C Kinesiology and
Applied Anatomy
H. & P. E. 418M Remedial and Cor-
rective Physical Education3
31
01

Second Year Hrs.
Biol. 230 Anatomy and Physiology I 3
Biol. 250 Anatomy and Physiology
II
Comm. 107 Basic Course III 3
Engl. 200, 203, 204, 205, 206, 251
or 275
**H. & P. E. 201C First Aid and Care
of Athletic Injuries
†H. & P. E. 306C Advanced Health
Education
H. &. P. E. 311M-312M or 311W-
312W Teaching of Individual and
Team Sports
H. & P. E. 322C Physical Education
for Elementary Grades2
Hist. 201, 202 The United States 6
Psych. 202 Psychology of Education 3
34

Third Year (Women) Hrs.
Educ. 301 Principles of Teaching 3
Educ. 304 Classroom Management 2
Educ. 308 Educational Sociology 2
H. & P. E. 303C History and Princi-
ples of Health and Physical Ed 3
H. & P. E. 307C Community Health
Agencies H. & P. E. 370W Theory of Camp
Counseling
H. & P. E. 407W-408W Techniques
of Officiating
Team Sports
H. & P. E. 417C Kinesiology and
Applied Anatomy
H. & P. E. 418W Remedial and Cor-
rective Physical Education 3
30
30

Fourth Year H	rs.
Educ. 404 Student Teaching	6
H. & P. E. 403M or 403W Health	
H. & P. E. 403M of 403W Hearth	
and Physical Ed: Organization	0
and Administration	. 3
H. & P. E. 415C School Health	
Education	.4
Education H. & P. E. 419C Teaching of Rhyth-	
mic Activities I	3
††H. & P. E. 420C Teaching of	
TTH. & P. E. 4200 leaching of	9
Rhythmic Activities II	. 0
Philosophy and Religion elective,	
or Humanities 401 or 402	. 3
tPsych. 305 Child Psychology or	
Psych. 306 Psychology of Adoles-	
r sych. and r sychology of	3
cense	,
Psych. 308 Personality and Mental	3
Hugiene	
##Electives	1/2
30½ or 31	1/2
00 72 01 01	12

Courses for the Minor

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 High School Health Education and Physical Education

Course o	r Subject Group A	Hours
	(Biological Life Sciences: Biology, Zoology, Comparative Anatomy, Human Anatomy, and Physiology)	
Biology	103, General Biology 225, Zoology: Vertebrates 230, Anatomy and Physiology I 250, Anatomy and Physiology II	3
	Group B	
Health a	(Principles, Organization, and Administration of Physical Education, including Athletics, Recreation, and Intramural Sports) and Physical Education 403M or 403W Organization and nistration of Health Education and Physical Education	Ad3
	Group C	
of Health	(Methods and Materials in Rhythms, Games of Low- Organization, Stunts, Tumbling, Apparatus, Recreational Group Activities, and Elementary Activities) and Physical Education 311M-312M or 311W-312W, Teac Individual and Dual Sports and Physical Education 322C Physical Education for Elementates	0
*F	or women, one of the activity courses is Health and Physical E	ducation

*Not taken by men in this year; the total for men is thus 32 hours.

†Students taking Health and Physical Education 306C are exempt from the general requirement of Health and Physical Education 107M-108M or 107W-108W.

††Men are not required to take Health and Physical Education 420C.

‡Women may take Health and Physical Education 428C, Normal and Physical Diagnosis (2 hours) instead of Psychology 305 or 306, thus making the semester total 15 hours.

 $$\ddagger\ddagger$ For men, electives in the senior year amount to $6\frac{1}{2}$ hours; for women, electives are $2\frac{1}{2}$ or $3\frac{1}{2}$ hours.

Group D

ing Football, Basketball, Baseball, Track, Tennis, Golf, Swimming, Soccer, Speedball, Volleyball and others com- monly used in Secondary and College Programs)
Health and Physical Education 409M, Coaching of Baseball and Track and Field (for men)
Health and Physical Education 410M, Coaching of Football and Basket- ball (for men)
Health and Physical Education 411W-412W, Teaching of Team Sports (for women)
Health and Physical Education 419C. Teaching of Rhythmic Activities

Group E

(Principles,	Organization, and Administration of School
Health Educ	ation, including School and Community Re-
lationships,	Methods and Materials for Teaching Health,
	and Evaluation)

Health and	Physical	Education	415C	School	Health	Education
	I IN TOIC GI	Luddation	1170,	SCHOOL	Health	Education

Group F

(Personal and Community Hygiene, Nutrition, D	isease Pre-
vention and Control, Mental and Emotional Hea	Ith. Acci-
dent Prevention and Control, Health Factors in and Problems of Medical Care)	Marriage,

Health and Physic	al Education	201C,	First	Aid	and	Care	of	Athletic	
Health and Physica	I Education	306C /	Advance	d H	alth	Educa	tion	THE PARTY OF	

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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. 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. 3+3 h. c.

History

Mr. Behen; Bullough, Dodd, Fulkerson, Low, Skardon; Mrs. Behen, Darling, Garcia, Slavin.

A major in history consists of thirty 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, 302, 304, 305, 309, 310, 317, 318, 319, 325, 333, 376, 390.

Group C—History 213, 214, 254, 304, 305, 306, 307, 308, 313, 321, 322, 352, 360, 364, 368.

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, 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 History Department takes seriously the University's emphasis on the importance of adequate competence in the English language (see "Proficiency in English," page 48); 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 a civilized form in the Near East down to the present day, with emphasis upon Europe. Bullough, Low. 3+3h. 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. Low. 3 h. c.
- 200. American Military History, 1607 to the Present. A military history of the United States from 1607 to the present, to include the social, political, and economic aspects during the period. 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.
- 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. Fulkerson. 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. Garcia, Skardon.
- 254. Modern Spain. A survey of Spanish history from the Middle Ages to the present. Garcia.

Upper Division Courses

- 302. Economic History of the United States. The economic development of the United States from Colonial times to the present, emphasizing the influence of economic forces on society and the individual. Prereq.: History 201 and 202. Behen.
- 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 instructor. History 306 is prerequisite to 307. Fulkerson.

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 instructor. Low. 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 (400 to 1500). Preq.: History 105 or consent of instructor. Bullough.
- 317. Civil War and Reconstruction. An intensive study of the Union's disintegration and reconstruction beginning with the Compromise of 1850 and ending with the election of Cleveland in 1884. Prereq.: History 201 and 202. Skardon.
- 318. The United States Since 1900. The period from the Peace of Versailles to the present is emphasized, with special attention to economic problems and the New Deal. Prereq.: History 201 and 202. Behen. Mrs. Behen.
- 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. Behen, Fulkerson. 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 instructor. Low. 3 h.c.
- 322. Renaissance and Reformation. A political, cultural, economic, and intellectual history of Europe from the High Middle Ages to the end of the religious wars. Prereq.: History 105 or 106 or consent of instructor. Bullough.
- 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. Behen. Mrs. Behen.
- 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.
- 352. Classical Civilization. A survey of the political, economic, intellectual, and cultural achievements of the Greek and Roman world and its contributions to modern life. Prereq.: History 105 or consent of instructor. Bullough.
- 360. Europe from Westphalia to Waterloo. A political, economic, intellectual, and cultural history of Europe from 1648 to 1815 with special emphasis on the French Revolutionary and Napoleonic periods. Prereq.: History 106 or consent of instructor. Bullough, Slavin.
- 364. Russia in the Twentieth Century. The history of Tsarist Russia since the turn of the century, the Revolution of 1917, the political, economic, social, and intellectual development of Russia in the Soviet period, and its emergence as a world power. Prereq.: History 106 or consent of instructor. Low.

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- 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 instructor. Low.
- 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. Skardon.
- 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. Prereg.: History 201 and 202. Behen. 3 h. c.

Home Economics

Feldmiller; Houston, Hugli, 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.

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 160 and 250 Chemistry 101 and 209

Education 101, 301, 304, and 404

Home Economics 101, 1011, 103, 201, 202, 204, 301, 303, 304, 305, 307, 400, 402 and 450

Psychology 201 and 202

The student should also read carefully the information provided by the Department of Education on pages 75-77, on the requirements of that department 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 food and nutrition. For this purpose the student, besides meeting all general requirements for the Bachelor of Science degree, must complete the following courses:

Biology 160 and 250

Chemistry 101, 209, and 210

Home Economics: 35 semester hours, including 101, 1011, 201, 202. 303, 309, 310, 407, 408, 409, 410, and 450 Psychology 201 and 202

Lower Division Courses

- 101. Food and Natrition. 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 Feldmiller. health.
- 1011., 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. I h. c.

student in analyzing personal and family resources and needs in the selection, 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.

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.

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. Beldmiller.

302. Design and Flat Pattern-Making. Planned to develop greater understanding and skill in the designing, fitting, and construction of garments. 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. Feldmiller.

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 the instructor. Feldmiller.

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 the instructor. Feldmiller.

305. Child Development. Identical with Psychology 305 except for the addition of directed observation. Staff. 4 h. c.

307. Matriage and Family Relations. Identical with Psychology 307. Listed also as Sociology 307. Staff.

309. Advanced Natrition. 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. Houston.

310. Diet in Disease. The modifications and adaptations of normal diets to meet the special nutritional needs in abnormal conditions where

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choice of food is of particular importance. Prereq.: Home Economics 309. Staff. 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. 2 h. c.
- 402. Home Management. Study of the home, its functions, 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.
- 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.
- 410. Experimental Cookery. Application of scientific principles and experimental procedures to cooking and to 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.

 I h. c.

Humanities

K. Dykema, Ives.

The material of the four 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 to our present society.

Credit in these courses is acceptable toward a major in any of the following subjects. to the extent indicated: English, full credit: 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.

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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.
- 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.
- Later Modern Classics. Goethe. Balzac. Mill. Thackeray, Dostoevsky, Huxley, Ibsen, Tolstoy, Henry Adams, Hardy, William James, 3 h. c. Shaw. Prereq.: junior or senior standing.

Combined Major in Humanities

A combined major in humanities consists of Humanities 401, 402, 403, and 404, and 33 hours chosen from the following courses:

English 101-102 (or its equivalent). 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, 328, 330. German 101-102, 201, 202, 325, 328, 330.

Greek 101-102, 201, 202, 301, 302.

Italian 101-102, 201, 202, 328, 330.

Latin 101-102, 201, 202, 301, 302, 304, 305, 401, 402.

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 9 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, 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; Latin *201, *202, 301, 302,

304, 305, 401, 402, 403; Philosophy and Religion 230, 303, 309, 330.

Italian

Richardson: Polito.

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

^{*}At the discretion of the adviser.

The prerequisite for any Upper Division course is either Italian 202 (or its equivalent) or the consent of the instructor. 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.

 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. 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 instructor.

Upper Division Courses

- 325. Advanced Italian Grammar. A review of the essentials through grammatical analysis of a modern text.
- 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

Ives; Morgan.

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 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 instructor. 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. 3+3 h. c.

201. Cicero: Prose Composition. Selection from Cicero's letters and orations. Prereq.: Latin 101-102 or two years of high school Latin.

3 h. c.

202. Virgil: Prose Composition. Selections from the Aeneid, books I-VI. Prereq.: Latin 201 or three years of high school Latin. 3 h. c.

Upper Division Courses

301.	Ovid's Metamorphoses; Prose Composition.	3	h.	с.
302.	Cicero's De Amicitia and De Senectute.	3	h.	c.
304.	Latin Lyric Poetry: Horace and Catullus.	3	h.	с.
205		2		100

305. Pliny's Letters: Prose Composition. 3 h. c. 401. Roman Historians. Selected passages from Sallust, Livy, and 3 h. c.

Tacitus.

3 h. c.

402. Virgil and Lucretius. The emphasis is on Virgil: the Aeneid (all twelve books), the Georgics, and the Eclogues. Some study of Lucretius' De Rerum Naturae.

3 h. c.

403. History of Latin Literature. A study of the development of Latin literature from its beginning through the Silver Age. 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.

Law

A pre-law curriculum is suggested at the end of the College of Arts and Sciences section. See also page 61.

Library Service

G. Jones.

Lower Division Course

101. Use of Books and Libraries. A survey of library resources and services; what the library is and how to use it: arrangement of books in the library; the card catolog; general reference sources and aids in special fields. Designed to aid the college student in his study and research. G. Jones. I h. c.

Mathematics

Malah: Barnard. Ciotola, Dillon, Dustheimer, Mavrigian, Ricksecker, Stauffer, Yozwiak: 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 is required to complete, in addition to the general University requirements for the degree (see pages 59-60), the following mathematics courses: Mathematics 102², 104², 209, 210, 309, and any five of the following: 310, 311, 312, 320, 330, 340, 341, 350, 360.

Students interested in secondary school teaching should refer to the secondary education curriculum (see pages 83-84) and consult the Department of Education.

²The course requirement listing does not waive Mathematics 101 (or 101R) and 103. The student must take Mathematics 101 (or 101R) and 103 as pre-requisites to the required courses for graduation.

The minor field of study for candidates for the Bachelor of Science degree must be in biology, chemistry, or physics.

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 I high school credit.
- 11. Plane Geometry. Three hours a week, at night. Evaluated as 1 high school credit.

Lower Division Courses

- 101R. College Algebra. A remedial course in algebra offered primarily for students deficient in mathematics. The subject matter is identical with that of Mathematics 101. Five hours a week. Prereq.: one year of high school algebra and one year of high school geometry or Mathematics 10 and 11.
- 101-102. College Algebra. The number system, elementary algebraic operations, algebraic functions and their graphs, the solution of linear algebraic equations, quadratic equations. Inequalities, arithmetical and geometric progressions, mathematical induction, the binomial theorem, permutations and combinations, determinants and other topics. Prereq.: for Mathematics 101, two years of high school algebra and one year of high school geometry; for Mathematics 102, Mathematics 101 or 101R.
- 103. Trigonometry. Trigonometric functions, graphs of trigonometric functions, trigonometric equations, and trigonometric identities. Solution of right and oblique triangles. A thorough investigation of logarithms, complex numbers, and the inverse trigonometric functions. Prereq.: high school geometry or Mathematics 11. Prerequisite or concurrent: Mathematics 101.
- 104. Analytic Geometry. A detailed study of curve tracing. Two-dimensional rectangular Cartesian and polar co-ordinate systems. The straight line and the conic sections. Transformations of the co-ordinate axes—translation and rotation. Parametric equations. Three dimensional co-ordinate frames. The plane in three dimensions and quadric surfaces. Empirical curves. Prereq.: Mathematics 101 or 101R and 103. 3 h.c.
- 209-210. Differential and Integral Calculus I and II. A study of limits. The derivative of a function of a single independent variable—its definition, interpretation, and its application to geometry and mechanics (curve, tracing, maximum-minimum problems, velocity and acceleration, simple harmonic motion, curvature). The differential of a function. Approximations. The theorem of the mean. Partial differentiation and the total differential of multi-variable functions. The integral of a function of a single variable and the integral of a function of several variables—their definitions, interpretations, and application to geometry and mechanics (areas, volumes, arc lengths, centroids, and engineering problems). Taylor series expansions. Approximate integration. Prereq.: Mathematics 102 and 104. Mathematics 209 is prerequisite to 210.

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. Additional or special techniques for ob-

- taining a solution—operator methods. transforms of the calculus, series expansions, and also graphical and numerical methods. A study of various classical ordinary differential equations, including the Legendre and Bessel equations. Prereq.: Mathematics 210.
- 310. Partial Differential Equations. An introduction to the theory of linear partial differential equations with applications to initial and boundary-value problems in mathmetical physics. Techniques for solving partial differential equations—Fourier series expansions, the Laplace transformation, the method of separation of variables, and numerical methods. A discussion of Lagrange's equation, Laplace's equation, and the wave, heat, and telegrapher's equations: additional selected topics in applied mathematics. Prereq.: Mathematics 309.
- 311. Theory of Equations. The solution of cubic and quartic equations. Graeffe's method: symmetric functions; determinants: systems of linear equations; resultants: discriminants. Prereq.: Mathematics 209. Offered in alternate years.
- 312. Modern Algebra. A postulational study of numbers. A discussion of groups, fields, matrices, vector spaces, linear transformations, and other selected topics. Prereq.: Mathematics 210. Offered in alternate years.
- 320. Vector Analysis. The elementary vector operatious; scalar and vector products of two or three vectors, differentiation of vectors. Applications to electrical theory and to mechanics. Prereq.: Mathematics 309. Offered in the spring semester.
- 330. College 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 209. Offered in alternate years.
- 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 210, Mathematics 340 is prerequisite to 341.
- 345. Operations Research. An introduction to operations research: problem formulation, linear programming, and design of research. Emphasis on mathematical methods. Prereq.: Mathematics 210.
- 350. History of Mathematics. A course designed to give prospective teachers of secondary mathematics a survey of the historical development of mathematics. Prereq.: Mathematics 209. Offered in alternate years.
- 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. Prerequisite or concurrent: Mathematics 309. 3 h. c.
- 401-402. Thesis. A student preparation of research or detailed investigation of some mathematical subject. The thesis submitted, which must meet with departmental approval, will contain at least 2500 words and be presented in three bound copies according to present specifications on technical report writing. Prerequisites and credit hours are determined by the Department of Mathematics.

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Metallurgy

See Chemistry: also the William Rayen School of Engineering section.

Military Science and Tactics

A unit of the Reserve Officer's Training Corps was established at this institution in 1950 and is administered as the Department of Military Science and Tactics.

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, after successfully completing four years of academic study at college level, 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.

Study in military science and tactics 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 available to any male student of Youngstown University who

(1) is a citizen of the United States not less than 14 years of age.

- (2) is physically qualified,
- (3) has not reached his 23rd birthday at the time of initial enrollment.
- (4) has at least three academic years remaining in his course at this institution, and
- (5) 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 available to any male student of the University who

- (1) is a citizen of the United States.
- (2) is physically qualified,

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- (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) execute 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 pages 32-33).

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 returned to him when he turns in.

^{*}Each case will be judged individually so that the best interests of the student, the liniversity, and the service will be served.

at the end of the school year (or upon withdrawal from school), 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 \$78 a month 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 the pertinent information on pages 42 and 45.

A curriculum leading to the degree of Bachelor of Science with a combined major in military science is offered for the student who wishes to prepare himself specifically for a military career. Students who wish such a curriculum should consult the head of the Department of Military Science and Tactics.

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; American military history; leadership, drill and command. 2+2h. c.
- 200. Basic course, first year (Military Science I). American military history; leadership, drill and command. Prereq.: Military Science 101. Second semester. Listed also as History 200.
- 201-202. Basic course, second year (Military Science II). Map and aerial photograph reading: United States Army and national security; crew-served weapons and gunnery; leadership, drill and command. Prereq.: Military Science 101 and 102, or waiver of these on the basis of active military service. 2+2 h. ϵ .

Upper Division Courses

- 301-302. Advanced course, first year (Military Science III). Leadership: military teaching methods: small unit tactics and communications: leadership. drill and command. Prereq.: Military Science 101-102, 201-202, or waiver of these on the basis of active military service. 3 + 3 h.c.
- 401-402. Advanced course, second year (Military Science IV). Operations: logistics: Army administration and military justice: service orientation; leadership, drill and command. Prereq.: Military Science 302.
- 402L. 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.

Modern Languages and Literature

See English, French, German, Hebrew, Italian, Portuguese, 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 Dana School of Music may be taken as electives by students in other units.

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 near the end of the College of Arts and Sciences section. See also Biology 383.

Orientation

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K. Dykema.

Orientation 100 is a requirement for graduation. Every day freshman takes it in conjunction with Communication 105. Evening students take the course during their junior year—after they have 60 semester hours of credit and before they are classified as seniors.

Lower Division Course

100. Freshman Orientation. 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 text is the University catalog; there will be examinations on it and on the lectures. One hour a week for freshmen; a more concentrated course for juniors.

Philosophy and Religion

Riley: K. Harder, Father J. R. Lucas, W. Miner, O'Brien; Almgren, Rabbi J. L. Azneer, Eminhizer, Kennedy, Father A. M. Lang, Murphy, Schulman.

Philosophy is the traditional major of pre-ministerial students. While admission to accredited theological schools may be granted upon completion of practically any university major, it is generally conceded that a thorough familiarity with the major problems which have occupied human thought. together with the solutions which have historically been offered to such problems, is a highly desirable foundation for theological studies. In many seminaries such knowledge is assumed and the ministerial student is at a disadvantage without it.

The major in philosophy has been planned in recognition of these needs. as well as those of the student who plans to make philosophy his life work. It consists of thirty hours in the department, including Philosophy and Religion 203, 220, 301, 302, and 305. These required courses must be passed with a grade of C or better.

A major in religion, for the student desiring to prepare himself for social work, church school work, or related professional activity, may be planned in consultation with the head of the department and the director of the Division of Social Sciences.

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.

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.

One-third credit toward either the philosophy or the religion major will be allowed for any courses listed under Humanities.

Lower Division Courses

- 201. 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. The semester is divided equally among Rabbi Azneer, Father Lucas, and Dr. Riley.
- 203. 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. Dr. Riley, Father Lucas, Mr. Eminhizer, Mr. Murphy, Mr. Schulman.
- 207. The Christian Ethic. A study of the records of the New Testament, with the object of discovering Jesus' conception of life, and the ethical principles revealed in both His life and teachings; the relation of these principles, in terms of agreement, difference, and transcendence, to other major systems of ethical theory, and their relevance for present conduct. Dr. Riley.
- 208. 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 or Mr. Eminhizer.
- 212. Church History I. The history of the Christian Church from its origin to the Reformation. Father Lucas or Mr. Eminhizer. 3 h. c.
- 213. Church History II. A continuation of Philosophy and Religion 212. 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. Dr. Riley or Mr. Eminhizer.
- 220. 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. Dr. Riley or Dr. K. Harder.
- 222. 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, or Mr. Murphy. 3 h. c.
- 230. Introduction to Biblical Literature. A survey of the literature of the Old and New Testaments, with attention to the authorship and purpose 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 or Mr. Almgren.

Upper Division Courses

301. History of Philosophy. The development of philosophic thought from early Greek times through the Middle Ages. Dr. Riley or Dr. O'Brien.

3 h. c.

302. History of Philosophy. Continuation of Philosophy and Religion 301 from the end of the Middle Ages to the present. Dr. Riley or Dr. O'Brien.

3 h. c.

303. 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 or Rabbi Azneer.

304. 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, Father Lucas, or Rabbi Azneer.

305. 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, or Mr. Kennedy.

306. 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. Dr. Riley.

3 h. c.

307. 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 203. Prereq.: Philosophy and Religion 203. Dr. Riley.

308. 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. Rabbi Azneer. 3 h. c.

309. 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. Dr. O'Brien.

310. Making of the Modern Mind. The philosophic, religious, scientific, political, and social developments out of which our present patterns of thought have arisen. Rabbi Azneer.

3 h. c.

315. History of Religion. An introductory course. The mechanisms of religious origins: primitive religion and its concepts: comparison of ethnic and prophetic religions: the classic religions of the ancient world, and their contributions to Judaism and Christianity: an introductory historical review of living religious systems. Dr. Riley.

3 h. c.

322. Philosophy of Man. A discussion of the sentient, emotional, and rational life of man. Life: mechanism vs. vitalism. Sensation and its philosophical explanations. Rational life and its principles. Freedom of the will vs. determinism. The human soul, and its origin and destiny. A philosophical discussion of evolution. Father Lucas, Father Lang, or Mr. Murphy.

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323. 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. Prereq.: Philosophy and Religion 220. Father Lucas.

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.

325. 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.

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. Father Lucas.

330. Philosophical Classics. Reading and discussion of some of the great documents of philosophy: Plato's Republic, Aristotle's Nicomachean Ethics, Descartes' Meditations, Kants' Critique of Pure Reason, and James' Essays, or alternative selections of comparable significance. Dr. Riley or Dr. O' Brien.

331. Philosophy in America. History of philosophic ideas in this country and an introduction to its intellectual history. American intellectual currents will be related to their background in the history of philosophy.

Prereq.: Philosophy 301 and 302. Dr. W. Miner.

Philosophy of Education. This course explores the foundation of modern education in the several schools of educational philosophic 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.

409. History of Social Philosophies. Identical with Sociology 409.

Mrs. Botty.

427. 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. Father Lucas. Father Lang. or Mr. Murphy.

428. 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 Industrial ethics: the solution of the communist: wages, strikes, labor unions. The nature of civil society. Father Lucas or Father Lang.

431. 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 .: Philosophy and Religion 315 or 306 and the consent of the in-3 h. c. structor. Dr. Riley.

The Psycho-Social Dynamics of Religion. The same considerations as in Philosophy and Religion 431, applied to present-day religious cults. Prereq.: Philosophy and Religion 315 or 306, and the consent of the instructor. Listed also as Psychology 432 and Sociology 432. Dr. Riley.

Physical Education

See Health Education and Physical Education.

Physics

Ellis: Clark; Gilboy, Lyu; 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, commercial work, 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 head of the Department of Education.

Non-Credit Course

The following course is for students whose preparation for college is incomplete in physics or in other laboratory sciences at the time of their admission to the University. It provides no University course-credit.

20. High School Physics. Three hours a week for one semester. Evaluated as I high school credit.

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. Prerequisite or concurrent: one year of high school physics or Physics 20: Mathematics 101 and 103. 3+3h. c. 3+3h.
- 101L-102L. Fundamentals of Physics Laboratory. Two hours a week: taken concurrently with Physics 101-102. Fee: \$10.00 each semester. I+I h. c.
- 201. General Physics: Mechanics, Heat, and Sound. Composition and resolution of forces: Newton's laws of force and motion: accelerated motion. circular and simple harmonic motion: molecular forces in liquids and solids: surface phenomena: fluids at rest and in motion: expansion and thermometry: heat energy and calorimetry: the kinetic theory of matter: elementary thermodynamics: transfer of heat and radiation: wave motion and vibration: sound and hearing: combination of sound waves. Prereq.: one year of high school physics, or Physics 20. Prerequisite or concurrent: Mathematics 209.
- 2011. General Physics Laboratory. Three hours a week: taken concurrently with Physics 201. Fee: \$10.00.
- 202. General Physics: Light and Electricity. Propagation of light by wave motion: mirrors and lenses: reflection, refraction, absorption, and dispersion of light: diffraction and interference: optical instruments: fundamental phenomena of charge at rest: introduction to current electricity: electric current and its production: magnetic phenomena: Ohm's and Kirchoff's laws: measurements in simple circuits, electrical energy, and power: elementary electrical oscillations. Prereq.: Physics 201.

 3 h. c.
- 202L. General Physics Laboratory. Three hours a week: taken concurrently with Physics 202. Fee: \$8.00.
- 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. 3h. 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 analysis of surface maps. Prereq.: sophomore standing. Listed also as Geography 225.

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 coordinate systems. Prereq.: Physics 201 and 202 and Mathematics 209-210.
- 303. Electricity and Magnetism. The fundamental laws of electrostatics and electromagnetism. Prereq.: Mathematics 209-210 and Physics 3 h. c.
- 3031. Electricity and Magnetism Laboratory. Experiments in measuring the electrical quantities: resistance, current, voltage, capacitance, inductance, and impedance, in both direct and alternating current circuits: comparison of the unknown quantity with a laboratory standard using the bridge, or "null," method. Two hours a week; taken concurrently with Physics 303. Fee: \$10.00.
- 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.: Mathematics 209-210 and Physics 201 and 202.
- 3221. 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 band spectra. Two hours a week: taken concurrently with Physics 322. Fee: \$10.00.
- 401-402. Thesis. The student investigates a subject selected by either the student or the head 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 head of the Department of Physics. Prereq.: senior standing. Estimated thesis expense: \$50-\$60.
- 411, 412. Thermodynamics. Identical with Chemistry 411 and 2 + 2 h. c.
- 424. History of Physics. The history of physics from early times, the lives of the great physicists, and the development of the physical laboratory. Prereq.: consent of the department head 3 h. c.
- 425. Theory of Heat Transmission. The theory of heat transmission for radiation, convection, and conduction. Development of dimensional analysis and heat transfer. Prerequisite or concurrent: Mathematics 310 or 420, and Physics 411, 412.
- 426-427. 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.: consent of instructor. $3+3\ h.\ c.$

Suggested Curriculums for the Degrees Bachelor of Arts and Bachelo Science with a Major in Physics*	r of
Course or Subject H	ours
For General and Degree Requirements (See pages 37-41, 58-61)	
Communication 105-106-107, Basic Course I-II-III	9
Health and Physical Education 107 and 108. Health Education I and II	1 1/2
Health and Physical Education activity courses	2
Orientation 100, Freshman Orientation Social Science 101 and 102, Introduction to the Social Sciences	1/2
Foreign Language (See pages 60-62: College credit only)	6
Chemistry 109-110. General Chemistry	10
English 200. Introduction to Literature	3
Psychology 201, General Psychology	3
Psychology 201, General Psychology Economics 305, Economic and Social Statistics	3
Humanities 401 or 402. Greek Classics or Roman, Mediaeval and Renaissance Classics	3
	53
For the Major	
Physics 201, 201L, 202, and 202L, General Physics	8
Physics 301. Classical Mechanics	4
Physics 322 and 3221. Physical Optics and Advanced Light	4
Physics 411. 412. Thermodynamics Physics 424, History of Physics	4
Physics 424, History of Physics Physics 426-427, Elements of Nuclear Physics	3
Engineering 213. Principles of Electrical Engineering	3
Engineering 311, 3111, 312, and 3121. Alternating Current and	,
Electrical Networks	8
	40
For the Minor	40
Mathematics 101 or 101R and 102. College Algebra	4
Mathematics 103 and 104, Trigonometry and Analytic Geometry	6
Mathematics 209-210, Differential and Integral Calculus I and II	10
	20
Additional Subjects	20
Chemistry 103. The Slide Rule (Omit for the A. B. degree)	11
Chemistry 201, Analytical Chemistry I	4
Chemistry 202, Analytical Chemistry II (Omit for the A B degree)	4
Mathematics 309 and 310, Ordinary Differential Equations and Partial	
Differential Equations (Omit for the A. B. degree) Electives. Upper Division Level	
Commes. Opper Division Level	6
10 or	
A semester-by-semester version of each of these social	1.1

A semester-by-semester version of each of these curriculums is available at the office of the Department of Physics.

Political Science

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of ys. raSmith: Boyer, Low. Rees, Sterenberg, Schuman.

A major in political science consists of 24 semester hours in addition to Social Science 101 and 102 and History 201 and 202. The major is designed to prepare students for graduate study in political science or law, and to provide a background for the student interested in a career in government or politics.

^{*}If the curriculum for the Bachelor of Science degree is to be comloading. It is recommended that these be non-science courses, such as Social Science 181 and 102 and the language courses. A student may obtain by himself the required reading knowledge of a foreign language; see page 62.

Courses in other departments for which credit may be given toward the political science major are: Economics 304, Public Finance: Economics 402. Comparative Economic Systems: History 308. The Far East: and History 306, 307. Constitutional History of England. One-sixth credit will be allowed toward a major in political science for any courses listed under Humanities.

Lower Division Courses

201. American National Government and Politics. The historical background, form, structure, administrative organization, and expanding activities of the Federal Government. Rees.

202. American State and Local Government. The form, structure administrative organization, and functioning of state, county, and municipal government in the United States. Boyer.

3 h. c.

Upper Division Courses

301. Comparative State Government. A comparison of the Ohio constitution with other state constitutions to acquaint the student with the need for revising the Ohio constitution. Prereq.: Political Science 202 or consent of the instructor. Staff.

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 instructor. Sterenberg.

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 instructor. Staff.

306. International Law and Government. Principles of international law as they have developed through custom and usage, international agreement, and judicial decisions; international organization with emphasis on the United Nations in action. Prereq.: Political Science 201 or History 106. Low.

307. American Political Parties. The origin, functions, and development of the political party, with emphasis on its relation to practical politics, propaganda, and pressure groups. Prereq.: Social Science 101 and 102. Schuman.

308. Public Administration. The organization and practice of national state, and local administration, including problems of governmental reorganization, civil service, budget procedures, and administrative law. Prereq.: Political Science 201 and 202. Staff.

309, 310. Constitutional History of The United States. The formation, amendment, and interpretation of the Constitution of the United States. Of special interest to prelaw 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.

311. Development of American Foreign Policy. The diplomatic problems that have confronted the United States from the American Revolution to the present. Prereq.: History 201 and 202. Staff. 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. Staff.

390. Diplomatic History of the United States. Listed also as History 390. Staff.

403. Comparative Government. The structure and functioning of the principal types of national governments, with emphasis on the governments of the western European nations and of Soviet Russia. Prereq.: one of the following: Political Science 201, History 201, 202, 309, 310, 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, 106, and junior standing. Low.

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Lower Division Courses

101-102. Elementary Portuguese. Grammar, pronunciation drill, vocabulary; dictation, reading of simple texts, oral and written composition. No credit will be given for this course if the student has credit for two years of high school Portuguese. 3+3 h. c.

201. Intermediate Portuguese. Vocabulary building, oral and written practice: readings from Portuguese and Brazilian authors. Prereq.: C or better in Portuguese 102 or in second-year high school Portuguese.

202. Intermediate Portuguese. A continuation of Portuguese 201, using texts of increasing difficulty; conversation and composition. Prereq.: Portuguese 201 or three years of high school Portuguese, or consent of instructor.

3 h. c.

Pre-Law Study

A suggested curriculum for the pre-law student is provided at the end of the College of Arts and Sciences section. See also page 61.

Pre-Medical Study

Suggested pre-medical curriculums are at the end of the College of Arts and Sciences section. See also pages 61-62.

Psychology

Mayer; P. Beckman; Bare, R. Dehnbostel, Dobrich, Ebeling, Graham, Luce, Schoenhard, Scollon, Shushereba, M. Smith, Tear.

A major in psychology consists of 30 semester hours including Psychology 201, 301, 302, and 320. Biology 321, Philosophy and Religion 333, and Sociology 405 may be counted toward the major.

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 or minor 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.

202. Psychology of Education. The psychological principles in learning, teaching, and the growth of a successful personality. Prereq.: Psychology 201. Staff. 3 h. c.

211. General Experimental Psychology. An introduction to the experimental study of behavior: methods and apparatus, design of experiments, and treatment of data; laboratory problems in such areas as sensory functions, discriminative processes and capacities, learning, emotion, and social interaction. Prereq.: Psychology 201. 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. Prereq.: Psychology 201. Listed also as Sociology 300. Staff.
- 301. Applied Psychology. The psychological factors in the human relationships of everyday living: psychological principles applied to individual development, education, religion, and various vocations. Prereq.: Psychology 201. Staff.
- 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. Prereq.: Psychology 201. Staff. 3 h. c.
- 303. Psychology of Religion. Identical with Philosophy and Religion 306. Riley.
- 304. Psychology of Music. A study of important psychologial 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. Prereq.: Psychology 201. R. Dehnbostel.
- 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. Prereq.: Psychology 201. Listed also as Home Economics 305. Child Development (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. Prereq.: Psychology 201. Staff. 3 h. c.
- 307. 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, eugenics, mental hygiene, homemaking with economics 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. Luce and M. Smith.
- 308. Personality and Mental Hygiene. The principles and habits that insure a well-balanced personality and a sound mind. Prereq.: Psychology 201.
- 310. Mental and Educational 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.: 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. Prereq.: Psychology 301. Staff.
- 320. 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. Listed also as Education 320. Prereq: Psychology 201. Staff.

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. Prereq.: Psychology 301. 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. Prereq.: Psychology 201. 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. Prereq.: Psychology 201. Staff.

406. Vocational Guidance. Techniques of vocational guidance and their application to high school students, college students, vocational rehabilitation subjects, and adults in general. Prereq.: Psychology 301. Bare. 3 h. c.

407. Clinical Training. Clinical experience, for a limited number of qualified students, of mental and physical illness and delinquency. Hospital and institutional work is supplemented by seminar sessions. Prereq.: Psychology 302 and consent of instructor. Staff.

3 h. c.

425. Guidance of High School Students. Principles and procedures in vocational, educational, personal, and social counseling at high school level. The discovery of students' problems and needs: methods of interviewing and testing; classroom procedures and organization of guidance programs. Prereq.: Psychology 202. Staff. 2 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 301 and 302 and Biology 103. Staff,

429. Introduction to Psychiatry. The fundamental psychoses and psychoneuroses, with special attention to schizophrenia, manic-depressive psychosis, alcoholism, and psychopathic personalities. Electroshock, insulin, and other forms of psychotherapy. Prereq.: Psychology 300, 302, and 308. Staff.

430. Contemporary Schools of Psychology. A survey of psychological theories: their evolution, salient principles, and current status of acceptance. Prereq.: Psychology 301 and 302. P. Beckman and Mayer. 3 h. c.

432. The Psycho-Social Dynamics of Religion. Identical with Philosophy and Religion 432: listed also as Sociology 432. Riley. 3 h. c.

Public Relations

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0. c. 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. Portuguese, and Spanish separately. For literature in translation, see Humanities.

R. O. T. C.

See Military Science and Tactics.

Russian

Richardson. 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.

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.

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.

3 h. c.

Upper Division Courses

305, 306. Russian Literary Tradition. A survey of the important writers of Russia up to the Revolution, with special attention to Puskin, 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.

Social Science

J. Smith: Fulkerson, Botty, Boyer, Bullough, Crites, A. Low, Lyman, McDonald, O'Connor; Berich. Chambers, Foster, Goterba, R. Low, Mowry, Powers, Schumacher, Sedlacko; Staff.

Twelve credit hours in courses in the social sciences are required of every student graduating from Youngstown University, with certain exceptions stated on pages 41 and 42. This requirement is met by taking the four courses listed below, except that transfer students may meet it by taking other courses as explained on page 41.

Lower Division Courses

101. Introduction to the Social Sciences I. Methods and concepts used to describe and analyze social behavior: prevailing patterns and values of human life in modern society; the processes by which the individual is oriented to them, with special emphasis on organized economic activity. (For certification and transfer purposes, this is regarded as a course in introductory economics.) Staff.

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102. Introduction to the Social Sciences II. A continuation of 101. emphasizing our political community and the powerful interests of government, business, and labor. Students are advised to take Social Science 101 before 102 and not to attempt both in one semester. (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. 401, 402.

Social Science Seminar. Advanced readings from the al science, with emphasis upon discussion. These two literature of social science, with emphasis upon discussion. courses are offered in alternate spring semesters, with a registration limited to twelve students. The readings for the two courses are independent and do not overlap each other. The grade achieved will depend upon a comprehensive examination. Prereq.: junior standing and consent of instructor. Fulkerson. 3 + 3 h. c.

Combined Major in the Social Sciences

A combined major in the social sciences 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, 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.

Suggested Social Science Curriculum

*Biol. 103 General Biology and 124 or 125 Botany or Zoology 5 Comm. 105-106 Basic Course I-II 6 *Foreign Language (or elective) 6 Hist. 105, 106 or 107 Western Civilization or Eastern Civilizations (any two) 6 Soc. Sci. 101 and 102 Introduction to the Social Sciences H. & P. E. 107 and 108 Health Ed. 11/4 H. & P. E. activity courses 1 Orientation 100 1/2 (Maximum load) 32	*Biol. 224 Vascular Plants and 225 Nertebrates
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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) and the student knows the extent to which he may safely burden himself with outside employment and extracurricular activities. Otherwise, he may fill out his major and other requirements according to his needs and aspirations from among the optional courses above, plus Sociology 204, upper division courses offered by the departments of sociology, political science, history (except History 333) and humanities: and from the following: Economics 304, 305,

^{*}Chemistry or Physics may be substituted, and other combinations of biology courses are appropriate; but 8 hours must be in one science, with 3 additional hours in the same science, in one of the other two, or in astronomy, geology or

^{**}See pages 60-62. French or German is preferred for admission to graduate school. The prospective graduate student should consider the advisability of two years' study in each.

401, 402, and Philosophy and Religion 301, 302, 305, 306, 308, 310,

330, 333. A rather wide selection is to be preferred.

A student taking the arts-law course may apply toward such a major 30 hours of credit obtainable in a school of law.

Sociology

Botty; McDonald, M. Mills; Gotecha, D. Griscom, E. Griscom, Harris, Kiriazis, Klein, J. Miller, Pollack, Sprinzen.

A major in sociology consists of 24 semester hours in addition to Social Science 101 and 102 and History 201 and 202. 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.
- 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 3 h. c. and 102. Upper Division Courses

300. Social Psychology. Identical with Psychology 300. 302. 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, proverty, vice. suicide. Prereq.: Sociology 203.

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 3 h. c. consent of the instructor.

Economic and Social Statistics. Identical with Economics 305. 305.

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.: Psychology 3 h. c. 201 and junior standing.

307. Marriage and Family Relations. Identical with Psychology 307: 3 h. c listed also as Home Economics 307.

308. Educational Sociology. Identical with Education 308. 311. Juvenile Delinquency. Social and psychological factors underlying delinquency: the juvenile court and probation; treatment in the community and in institutions; preventive measures. Prereq.: Social Science 101 and 102.

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

- 315. Criminology I. The legal, psychological, and social factors underlying crime, criminal behavior, and crime prevention. Prereq.: Social Science 101 and 102.
- 316. Criminology II. Modern philosophy with regard to methods of apprehension, treatment, and institutional care of adult criminals. Procedures governing probation and parole. Prereq.: Social Science 101 and 102.

 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.: Social Science 101 and 102, and Sociology 204.
- 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: Social Science 101 and 102, and Sociology 204.
- 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.: Social Science 101 and 102, and Sociology 204.
- 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 other areas within our society such as the family, government and power politics, social change; technological progess and its repercussions. Prereq.: Social Science 101 and 102.
- 331. Urban Sociology. The city as 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. Prereq.: Sociology 203.
- 404. Political Sociology. The social conditions that affect government and politics, determine political order and regulate struggles for power; political behavior and processes such as pressure groups: associations, political parties and movements to stabilize or change the political order. Special reference will be made to the 19th and 20th century movements. Prereq.: Social Science 101 and 102, History 201 and 202, Sociology 203. 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 science, and consent of instructor.

 3 h. c.
- 409. History of Social Philosophies. The evolution of social theory, with emphasis upon various present-day schools of thought. Prereq.: Sociology 203 and 9 semester hours of Upper Division sociology courses. Listed also as Philosophy and Religion 409.
- 410. Minority Groups. A survey of the origin, characteristics, status, and adjustment of national and racial minority groups, with emphasis

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203. h. c. on the significances of membership in such a group of the in-group, the outgroup, and community solidarity. Prereq.: Sociology 203 or consent of the instructor.

3 h. c.

413. Introduction to Social Casework Methods. Analysis of the major processes employed in social casework: relation of the social work methods in casework to areas other than social work, such as nursing, teaching, legal counseling, personnel and business administration. Prereq.: Sociology 312 and 313, or senior standing with a major in sociology or social science.

414. Introduction to Social Group Work Methods. Analysis of the major processes employed in social group work: relation of the social work methods in group work to areas other than social work, such as teaching, recreational leadership, committee work, civic and community participation. Prereq.: Sociology 312 and 313, or senior standing with a major in sociology or social science.

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 and 313, or senior standing with a major in sociology or social science.

2 h. c.

432. The Psycho-Social Dynamics of Religion. Identical with Philosophy and Religion 432; listed also as Psychology 432. 3 h. c.

Spanish

Mills, Richardson; Garcia.

A major in Spanish consists of 24 semester hours above the elementary level, including Spanish 301. 302. 6 hours in Latin, French, or Italian or 6 hours of upper division Spanish. For a combined major in humanities, see page 105.

The prerequisite for any Upper Division course is Spanish 202, or four years of high school Spanish, or the consent of the instructor. 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. 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.

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 instructor.

3 h. c.

201L, 202L. Spanish Conversation. A laboratory course in oral Spanish, with the instructor 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 more Spanish-speaking countries, accompanied by an instructor. One and a half hours of instruction daily for twelve days. Prereq.: Spanish 101-102. or consent of the instructor, with whom arrangements should be made. The student pays his own expenses.

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.)

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.

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.

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.

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

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 Assigned readings are in Spanish.

401. Classical Spanish Literature. The literature of the Golden Age, with special emphasis on the dramatists, Cervantes, Tirso, Lope de Vega, Zorrilla, Calderon.

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.

405. The Generation of '98. The principal writers of the early twentieth century: Baroja, Unamuno, Valle-Inclan, Azorin, Benavente, and

Twentieth Century Spanish Literature. A survey of the lead-406. ing 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.

The Spanish-American Novel. An outline of the development of the Spanish-American novel up to the present day. Reading and anlysis

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

Crites, Elser, Foley.

Majors are expected to complete the basic requirements for the English major. Courses in speech and dramatics may be counted toward a major in English, with the approval of the head 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 and 116, Communication 105-106-107, or preparation satisfactory

to the instructor.

Lower Division Courses

105-106-107. Basic Course in communication. See Communication.

115, 116. Fundamentals of Speech. This course aims to develop selfexpression 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.)

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.

215, 216. Public Speaking and Oral Interpretation. A continuation of Speech and Dramatics 115, 116 on a more advanced level. wish may concentrate on oral interpretation. Those who 2 + 2 h. c.

217. Principles and Practices of Broadcasting. A lecture and observation course designed to familiarize students with the principles. tools, and 2 h. c.

skills required in radio and television broadcasting.

219. 220. Play Production 1. This course has three purposes: to develop interest in and appreciation of legitimate drama, particularly as found 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. Class is formed after casting and continues through final production date. May be repeated. 1/2 to 2 + 1/2 to 2 h. c.

Upper Division Courses

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 1. Rehearsal and classroom performance of scenes and

pantomimes. Students of Speech and Dramatics 421 and 422 assist in

directing, under faculty supervision.

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 .: 3 + 3 h. c. consent of instructor.

Applied Public Speaking. Preparation of speeches and their delivery before various groups. Conducted mainly through individual con-2 or 3 h. c. ferences. Prereq .: consent of instructor.

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 instructor.

422. Theater Directing II. An advanced approach to the work of Speech and Dramatics 421. Each student directs a play. Prereq.: consent of instructor.

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Teacher Training See Education.

University Seminar See page 63.

Zoology

See Biology.

Pre-Law Study

Following is a curriculum recommended for a student who expects to enter a school of law. In addition, he should consult his adviser,

Suggested Pre-Law Curriculum for the Degree of Bachelor of Arts

The major may be a combined major of 45 semester hours in the social sciences 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 30 credit hours from an approved law school toward the completion of the degree of Bachelor of Arts. See page 61.

Acctg. 201-202 & 201L-202L Eler try Accounting & E. A. Lab tory or Hist. 105, 106 Wester Civilization Biology or chemistry "Comm. 105-106 Basic Course I-1 Foreign language (or elective) Soc. Sci. 101 & 102 Introduction the Social Sciences I & II H. & P. E. activity courses Orientation 100	nen- ora- ora- ora- ora- ora- ora- ora- ora
Eng. 200, 203, 204, 205, 206, or 2: Hist. 306, 307 Constitutional Hist of England History, political science, sociol economics, accounting (in any lection or combination) Mathematics or science Philosophy and Religion elective, Humanities 401 or 402 Elective (Upper Division)	tory 6 ogy, se- 12 3 . or

Foreign Hist. 201 Pol. Sc. 2 ment of 202L E A. Lab Psych. 20 H. & P. I & II H. & P.	07 Basic language & 202 Th 01 & 202 r Acctg. lementary pratory 1 Genera E. 107 &	d Year Course III (or electiv (or electiv American 201-202 & Accountin Psycholo, 108 Heal	7e)
Electives	Fourth (Upper	Year Division)	Hrs

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.

^{*}Eight hours of biology cannot be completed in two semesters; the student electing it must rearrange this curriculum slightly, and should consult his adviser.
**English 101-102 and Speech and Dramatics 115, 116, totaling 10 hours, may be substituted for Communication 105-106-107. †Foreign language requirements are explained on pages 60-62.

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; see pages 61-62.

First Year Hrs. Biol. 103 General Biology 3 Biol. 125 Zoology: Invertebrates 2 Comm. 105-106 Basic Course I-II 6 Math. 101 or 101R and 102 College Algebra 4 Math. 103 Trigometry 3 Math. 104 Analytical Geometry 3 Soc. Sci. 101 and 102 Introduction to the Social Sciences 6 H. & P. E. 107 and 108 Health Ed. 1½ H. & P. E. activity courses 1 Orientation 100 1½ 30	Second Year
Third Year Hrs. Biol, 309 Vertebrate Anatomy I 3 Biol. 310 Vertebrate Anatomy II 2 Chem. 201 Analytical Chemistry I 4 **Chem. 202 Analytical Chemistry II 4 Chem. 305 Organic Chemistry 4 English elective (Upper Division) 3 *Foreign language (or elective) 6 Hist. 202 The U.S. since 1865 3	*Biol. 313 Vertebrate Histology 3 *Biol. 321 Genetics 3 **Chem. 306 Organic Chemistry 4 *Foreign language (or elective) 6 Philosophy and Religion elective (Upper Division) or Humanities 401 or 402 3 Electives (Upper Division) 12

**Recommended but not required. However, there must be a minimum of 40 semester hours in Upper Division courses.

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*See pages 60-62.

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, the head of the Department of Biology may be consulted.

Nursing

1. Pre-Nursing.

*Foreign language (or elective) Hist. 202 The U.S. since 1865 Psych. 201 General Psychology

For the student wishing two years of college as preparation for entering a nursing school, the following curriculum is suggested:

First Year Hrs. Biol. 103 General Biology 3 Biol. 225 Zoology: Vertebrates 3 Chem. 109-110 General Chemistry 10 Comm. 195-106 Basic Course I-II 6 Soc. Sci. 101 and 102 Introduction to the Social Sciences 6 H. & P. E. 107 &108 Health Ed 1½ H. & P. E. activity courses 1 Orientation 100 ½	Second Year Hrs. Biol. 230 Anatomy and Physiology I. 3 Biol. 250 Anatomy and Physiology II. 3 Comm. 107 Basic Course III
Orientation 100	02

Advisement is provided by the Department of Biology. 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 section 4 below).

2. Youngstown Hospital Association Affiliation.

The first-year student in the Youngstown Hospital Association School of Nursing takes:

a. A course in orientation to the nursing arts and techniques which is carried concurrently with the courses listed under "b."

b. The following courses at Youngstown University:

 Advisement is provided by the Department of Biology. The college courses may be counted toward a bachelor's degree if the student wishes to resume college study after getting the nurse's certificate (see section 4 below).

3. Public School Nursing.

For the curriculum leading to the degree of Bachelor of Science in Education for public school nurses, the student may consult the head of the Department of Education.

4. 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 achievement tests, for study at an accredited nursing school. A balance of 90 or more semester hours must be completed in college, including:

- a. One acceptable academic major.
- b. Biology 383 (Ward Management and Teaching).
- c. All other requirements for either (1) the degree of Bachelor of Science, except those in foreign language and in health and physical education, or (2) the degree of Bachelor of Arts, except those in health and physical education. See pages 59-62.

General advisement for a student following this program is provided by the Department Sociology.

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. Thirty 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. Advisement is provided by the Chemistry Department.

However, students interested in medical technology frequently prefer to obtain degrees with majors in biology or chemistry and obtain their technology training afterward. In such cases, the regular curriculum of the major department is followed, and advisement is provided by the major department. If a student so desires, he may obtain a second Bachelor of Science degree with a major in medical technology after he has completed his technical training.

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At present, students are admitted to medical technology laboratories after completing the first two years of college work, but completion of three years before starting the training period is strongly recommended.

Required Curriculum Leading to the Degree of Bachelor of Science with a Major in Medical Technology

First Year Hr	s.
Biol. 103 General Biology	3
Biol. 103 General Biology	2
Biol. 225 Zoology: Vertebrates	0
Cham 109-110 or 111-112 General	
Chemistry	8
Chemistry	9
Chem. 119-120 Chemical Mathematics	-
Comm 105-106 Basic Course 1-11	. 6
Math. 101 or 101R and 102 College	
Mach. 101 of 1011	4
Algebra	1/
H. & P. E. 107 and 108 Health Ed. 1	/=
H. & P. E. activity courses	. 1
Orientation 100	1/0
Orientation 100	20
31 or :	29

Second Year	Hrs.
Biol. 230 Anatomy and Physiolog	ry I 3
Biol. 230 Anatomy and Thysiolog	71 0
mili 950 Anatomy and Psysiolog	y II o
Chem. 201-202, 201L-202L Ana	Ivti-
Chem. 201-202, 2011-2022	9
cal Chemistry I	
Comme 107 Rasic Course 111	
Physics 101-102, 101L-102L Fun	da-
Physics 101-102, 10111-1022	C
mentals of Physics	
C Cai 101 and 102 Introduction)II W
the Social Sciences	
the Social Sciences	
H. & P. E. activity courses	
	35

Summer Session Hrs.
Chem. 305-306 Organic Chemistry ... 8

		No. of the last	and the second	
	Third	Year_	4.000	Hrs.
Biel. 308	Vertebrate	Embryo	ology .	4
Riol 313	Histology			
Biol. 321	Genetics .			6
Chem. 32	1, 322 Bio	chemistr	y	0
Engl. 200	, 203, 204,	205, 206	OF 210	
Hist. 201	202 The	United	States	0
Philosoph (300 or	above) or	Human	ities 40	113
*Electives	s (Upper D	ivision)		10
				÷38

Fourth Year
Fourth

[†] Since this is an overload, a part may be taken during the following summer, or an application for an overload may be submitted to the Academic Standards Committee if the student's point average is high.

The School of Business Administration

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 relations, traffic and transportation management and secretarial studies. Minors are offered in the same fields except for secretarial studies. In addition, a minor is offered in business organization.

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 pages 59-61. 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 pages 35-36.
- 2. The courses and other requirements to be completed in the University, comprising:
- a. The general requirements for graduation from the University, explained on pages 37-41 and recapitulated below.
 - b. Requirements peculiar to the degree, which are stated below.
- c. Requirements for the major and minor fields, and for any other purpose.

The curriculums leading to the degree require a minimum of 125 semester hours of credit (130 for general business, commercial art, or traffic and transportation management, 136 for accounting and management), 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 advisor.

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

R. O. T. C. students are allowed certain modifications of the requirements, as explained on page 42. 1. Pre-college

High school units Subject English United States history and civics Any mathematics Science or additional mathematics Others 2. In the University a. General a. General

Other than courses (see pages 37, 39-40):

Completion of 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 requirement. Residence requirement.
Course-level requirements. Application for graduation. Grade-average requirement. Basic courses: Communication 105-106-107, Basic Course I-II-III Health and Physical Education 107 and 108, Health Education I and II 11/2 Health and Physical Education activity courses ______2 Area courses: Religion, a course in the Department of Philosophy and Religion, or Humanities 401 or 402 Sciences: specified below under degree requirements Social studies: Social Science 101 and 102, Introduction to the Social Sciences _____ 6 History 201 and 202, The United States ______6 b. For the Degree* Non-professional in purpose: English Three hours of literature, English 200, 203, 204, 205, 206 or 275, or English 251 or 253. Psychology 201, General Psychology Six hours in any science courses, and Business Organization 131 (Mathematics of Business) or Merchandising 121 (Merchandising Mathematics) where applicable. Professional in purpose: Accounting 201-202, Elementary Accounting 6 **Advertising 227. Advertising Principles 3
**Advertising 228. Advertising Procedures 3
†Business Organization 111. Principles of Business 3
Business Organization 201 and 202. Business Law I and II 6 *Business Organization 210. Public Relations 3
Business Organization 322. Credits and Collections 3
Merchandising 224. Marketing 3

end of this section.

**Not required for the major in accounting or traffic and transportation management.

†Not required for the major in merchandising.

^{*}When the major is in secretarial studies, some of these degree-requirement courses may be replaced by courses taken in the Secretarial School, and the science requirement differs a little. See the suggested curriculum for that major, at the end of this section.

for Merchandising 225, Salesmanship, for the major in accounting.

c. Other Courses

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 Department of Business Organization. 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.

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 1.0, 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 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.

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

It is important that the student familiarize himself with the coursenumbering system and its significance, as well as the abbreviations used to indicate the amount of credit. These are explained in the College of Arts and Sciences section, on page 63.

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.

NOTE. The parts of a hyphenated course must be taken in numerical order, and both parts must be successfully completed before credit toward graduation can be given for the first part.

Accounting

R. Miller; M. Evans, Jenkins, Niemi, Petrych, E. Reilly; Bannach, Barr, Cole, Donchess, Fuller, Goddard, Nicastro, Provance, Reali, Rodkey, Scheel, Stephens.

Accounting courses provide a study of bookkeeping methods and the presentation, analysis, and interpretation of financial data. They also cover

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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 46 semester hours: each includes Accounting 201-202, 300, 301-302, 303, 304, 401, 403, 404, 405, 407, 410 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 2.0 in accounting is necessary to carry two accounting courses the following year.

Lower Division Courses

201-202. Elementary Accounting 1-11. The theory and use of balance sheets, operating accounts, and working papers, with special attention to books of original entry and special ledger accounts. The setting up of accounts and adjusting and closing of books at the end of the fiscal period are developed through practice sets and problems. Accounting 201L-202L must be taken concurrently.

2011-2021. Elementary Accounting Laboratory 1-11. 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, for work equivalent to that for one hour of credit. No Credit.

Upper Division Courses

- 300. Basic Concepts of Machine Accounting. An approach to accounting methods through the use of the unit record card. Fundamentals of punched card machine operations and a logical approach to systems developments and procedures including: the unit record and what it will do: machine fundamentals; applications involving billing, accounts receivable, accounts payable, inventory and payroll; and a case study of a mechanized installation. Prereq.: standing as a junior and as a major in Accounting,
- 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, surplus, 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 1-11. 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, for work equivalent to that for one hour of credit. Prereq.: Accounting 201-202 and 2011.-2021..
- 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 201-202. 3 h. c.

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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. Appropriate problems and a standard practice set are used. Prereq.: C or better in Accounting 303.

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: aud a case study of an electronic computer installation. Prereq.: Accounting 300.

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.

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.

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.

407. Auditing. Methods of auditing, with emphasis on the verification of balance sheets and operating statements and the analysis and use of prepared statements. Prereq.: C or better in Accounting 302 and 304.

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, trends, and other variations. Each student prepares an analysis of some prominent corporation and makes comparisons with its principal competitors. Prereq.: Accounting 401.

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 permission of the instructor. 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.

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 302 and 304.

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.

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.

Advertising

Flad; F. Braden, R. Miller; Farragher, Hackett, Mamula, Mittler, Pratt, 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, including the various forms of advertising. This course includes the economics, methods, and psychology of advertising, with discussion of visualization, copy, layout, printing, photo-engraving, and the graphic arts. Prereq.: sophomore standing.
- 228. Advertising Procedutes. This course deals with such problems as the study of the product, determination of appeals to be used, selection of media. publication schedules, various types of campaigns: radio, television, outdoor advertising, market research, copy testing, packaging, labeling, and point-of-sale advertising. Prereq.: Advertising 227.

Upper Division Courses

- 329. Advertising Copy. Practical, creative applications of basic advertising objectives. Newspaper, magazine, direct-mail, billboard, bus card, and radio copy are written as outside assignments and classroom projects. Prereq.: Advertising 228.
- 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.
- 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.
- 411. Direct 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.
- 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.

- 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 selling the campaign. Prereq.: Advertising 329.
- 435. Window Display. Identical with Merchandising 435 except that Advertising prerequisites are Advertising 330 and Art 110. 3 h. c.
- 451. Seminar. Each student undertakes original research in some phase of advertising or the advertising business and presents his findings to the class, who study and discuss them. Prereq.: senior standing with major in advertising.

Business Organization

E. Reilly; M. Browne, McK. Browne, M. Evans, Hahn, K. Harder, Jenkins, Kermani, Lengyel, McCarty, R. Miller, Ormos, Petrych, Whitelock; Ameduri, Beil, Brennan, Church, Donchess, Edwards, G. Elser, Griffin, Grim, Hamady, Linville, Long, Macejko, Mamula, Mediate, Meiners, Meshel, N. Moore, J. Morgan, D. Nelson, Provance, Roberts, Teodorescu, Vivalo, Weller.

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, commercial art, management, public relations, and traffic and transportation management, and for the major in business education, and (c) provide for the minor in business organization.

The combined major in general business consists of a total of 45 semester hours in accounting, advertising, business organization, merchandising, and economics. The combined major in management consists of a total of 45 semester hours in business organization, economics, engineering and merchandising. The combined major in public relations consists of a total of 45 semester hours in accounting, advertising, business organization, economics, 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 Department of Education of the College of Arts and Sciences.

Lower Division Courses

- 111. Principles of Business. An introductory course covering the development of forms of business enterprises. management, employer-employee relationship, credit, banking, and elementary accounting. 3 h. c.
- 113. Typewriting I. Primarily for students with no previous instruction in typewriting. A speed of 20 words a minute must be attained. Two hours a week; credit applicable only toward the Bachelor of Science in Business Administration degree.

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SITTESS

- 114. Typewriting II. For improving efficiency: a speed of 30 words a minute must be attained. Two hours a week: credit applicable only towards the Bachelor of Science in Business Administration degree. I h. c.
- 115. Office Machines. Designed to impart a working knowledge of the adding and the calculating machines. Two hours a week; credit applicable only toward the Bachelor of Science in Business Administration degree.

 1 h. c.
- 120. Economic Geography. An elementary survey of the raw materials of the earth, methods of livelihood, land utilization, and population problems.

 3 h. c.
- 131. Mathematics of Business. Designed to meet the needs of students of business, to provide the kind and amount of mathematical background needed for success in the study of finance, commerce, accountancy, business statistics, merchandising operations, and related topics. 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 or English 102, and Social Science 101.
- 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.
- 210. Public Relations. An introduction to public relations and the media thereof, emphasizing management-labor-community relationships.

 3 h. c.
- 212. Business Letters and Reports. A study of sound business letters and reports, stressing content, effective sentences, intelligent punctuation, psychology of tone, and the internal structure of the sales letter. The location of information on any business subject in writing reports is also covered. Prereq.: Communication 107 or English 102.
- 215. Principles of Transportation. The historical and economic background of the growth and development of the five modes of transportation. with attention to the increasing importance of carrier coordination and to such controversial subjects as promotional policy, subsidies, and railroad control of competing modes of transportation. Prereq.: Communication 107 or English 102.
- 216. Elementary Traffic and Transportation. Designed to acquaint the student with the use of classification of freight and freight classification shipping documents and special services. Prereq.: Business Organization 3 h. c
- 217. Intermediate Traffic and Transportation. Designed to acquaint the student with the construction of freight rates and tariffs, and to enable him to analyze or prepare a tariff. Prereq.: Business Organization 216.
- 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. Prerequipments of the programment of the
- 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 131 and 201.

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.

306. Advanced Traffic and Teansportation. An analysis from the legal point of view, of through rates and routes, technical tarciff and rate interpretation, milling in transit, overcharges and undercharges, loss and damage and export procedures. Prereq.: Business Organization 217.

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 passenger: terminal methods and procedure, and federal, state and municipal regulations and restrictions as to weight, length, and public liability. 3 h. c.

310. Industrial Organization. The growth and present status of development of modern industrial organization, and indication of its trends, with particular attention to the principles determining locations of plants, type of management, control of production, and type of equipment. Wage payments, cost-finding methods, and policies regarding inspection standards and human relations. Prereq.: Business Organization 131 and Accounting 202. Listed also as Merchandising 310.

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.

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.

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.

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 and 201.

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.

3 h. c.

350. Business Management. The application of functions and techniques of management, including basic market and product considerations: planning for physical facilities, manpower and production. A study of financing the enterprise, determining the organizational structure and the

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of insurisk to be impanies ish rates 3 h. o use of case studies to show the role management plays in the operation of a successful business. Prereq.: Accounting 202. Business Organization 202 and Economics 202.

- 406. Interstate Commerce Commission Practice and Procedure. A general discussion of the construction and application of the Interstate Commerce Act and practice and procedure before the Interstate Commerce Commission. Prereq.: Business Organization 306.
- 410. Material Handling and Inventory Control. Typical material-handling devices and their application; material movement as affecting processes. layout, and storage. Economics of handling and conveying material; problems in selection and application of equipment. Methods of inventory control; when to order and in what amounts, with consideration of mode of transportation. Prereq.: Accounting 304 and Business Organization 310.
- 419. Production Management. A brief review of the principles, policies, and definitions of management, followed by an examination of the functions of typical production planning and control departments. Specific work on the techniques of scientific management, such as co-ordination of manufacturing plans with sales budgets, analyzing manufacturing capacities for job scheduling, and keeping records. Discussion and analysis of specific types of management controls. Prereq.: Accounting 303 and 304. 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.
- 450. Development of Executive Ability. The development of the basic processes of administration: 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, and the use of organizational charts and manuals: determination of executive personnel needed, selection, development and compensation, and the directing and controlling of administrative actions through budgets standards, appraisals of performance and test checks. Case studies of actual management problems will be presented in a discussion forum laboratory which must be taken concurrently. Prereq.: senior standing and consent of instructor.
- 450L. Development of Executive Ability Laboratory. A two hour per week discussion forum in which actual business case studies will be presented. The class will be divided into small groups for discussion and solving of a particular management problem. Each group will present its decision. Each student will have a chance to conduct group discussions, present his group's decisions to the class and participate in his group's decisions. Prereq.: senior standing and consent of the instructor. I h. c.

Merchandising

McK. Browne: F. Braden, M. Browne, S. Einstein, Gillespie, Ormos; Dunlevy, Hulme, LaLumia, Larson, Loyer, D. Malone, Plumm, Pratt, Rutecki, Walls.

Merchandising courses comprise a study of materials and their sources, buying and selling methods, quality analyses, fashions, and methods of promotion. They are designed for the student who wishes to become a store 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 34 semester hours and a major in industrial merchandising consists of 30 semester hours: they include Merchandising 224, 225, 326, 420 and other courses included in the curriculums printed below. A student majoring in 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.

Upper Division Courses

- 310. Industrial Organization. Identical with Business Organization 2 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.
- 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.
- 332. Textile Fabrics. Textile fibers: cotton, silk, linen, nylon, wool, rayon, and other new materials: methods of dyeing and printing; weaves: twill, plain, satin, jacquard: tests to distinguish the fibers. Government ruling are studied: uses and wearability of materials are investigated. Swatches of materials are used as illustrations.
- 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.
- 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.: Merchandising 311-312.

 3 h. c.
- 409. 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: Prereq.: Merchandising 224 and 225.

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- 410. Industrial Marketing. Characteristics 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.
- 411. Buying and Merchandising Methods. The methods used by retail organizations in buying from sources of supply; sales planning: dollar and unit control, involving six-month merchandising plans, purchase planning, model stocks and calculation of customer demand and re-order quantities. Prereq.: Accounting 202 and Merchandising 121, 224, and 225, 3 h. c.
- 412. Techniques of Retail Merchandising. The course aims to teach a merchandiser to adjust prices and quantities of offerings to customer demand in such a way as to earn a profit: to have a sensitivity to customer demand and flexibility in operation: and to develop the quality of leadership essential to success. Prereq.: Merchandising 411.
- 413. Marketing Research. To introduce the student to marketing research; in particular, the application of marketing research in the major areas of interest to marketers: defining a problem and carrying out research necessary for its solution. Prereq.: standing as a senior and Merchandising 409 or 410.
- 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.: Merchandising 411 and 412. 3 h. c.
- 425. Sales Management. This course deals with the functions of the sales manager. Principal topics considered are: sales organizations, identification of merchandise, including testing, branding, packaging, labeling, warranties, and service: free deals and allowances: planning quotas and territories: selecting, training, and compensating salesmen: promotional campaigns and supervision: and the use of cost data as a guide to the formulation of sales and price policies. Prereq.: Business Organization 225. 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.
- 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 to select the correct materials and to provide the necessary mrechandising information. Prereq.: Merchandising 332 or consent of the instructor.
- 435. Window Display. 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.: Art 110 and Merchandising 332. Listed also as Advertising 435. 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. I h. c.
- 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.: Accounting 303. Business Organization 202. Merchandising 224 and 225, and Economics 305.
- 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.
- 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.

 I to 3 h. c.

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 courselevel requirements.

In all of these curriculums, English 101-102 and Speech and Dramatics 115, 116, totaling 10 hours, may be substituted for Communication 105-106-107.

R. O. T. C. students may have certain course-requirements waived: see page 42.

Attendance is required in the non-credit laboratory courses taken in conjunction with Accounting 201-202 and 301-302.

Accounting

Second Year First Year Acetg. 201-202 & 201L-202L Elemen-Acctg. 301-302 & 301L-302L Intermeditary Accounting & E. A. Laboratory 6 ate Accounting & I. A. Laboratory 6 Bus. Org. 201 & 202 Business Law I Bus. Org. 111 Principles of Business 3 Bus. Org. 131 Mathematics of Business 3 Comm. 105-106 Basic Course I-II 6 Comm. 107 Basic Course III Finance

 Comm. 107 Basic Course 111
 3

 Econ. 202 Principles of Economics
 3

 Engl. 260, 203, 204, 205, 206, 251, 253, or 275
 3

 Hist. 201 & 202 The United States
 6

 Mdsg. 224 Marketing
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 Psych. 201 General Psychology
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 H. & P. E. activity courses
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148	School of Business Administration
Specialization in Public Accounting Third Year Hrs. Acctg. 300 Basic Concepts of Machine Accounting 2 Acctg. 363 Basic Cost Accounting 3 Acctg. 364 Advanced Cost Accounting 3 Acctg. 407 Auditing 3 Bus. Org. 212 Business Letters and Reports 3 Bus. Org. 222 Insurance 3 Bus. Org. 322 Credits and Collections 3 Bus. Org. 322 Credits and Collections 3 Bus. Org. 350 Business Management 3 Econ. 303 Money and Banking 3 Economics Elective 3 Liberal Arts Elective 3	Specialization in Private Accounting Third Year Hrs. Acctg. 300 Basic Concepts of Machine Accounting 3 Acctg. 303 Basic Cost Accounting 3 Acctg. 304 Advanced Cost Accounting 3 Acctg. 401 Advanced Accounting 3 Acctg. 407 Auditing 3 Bus. Org. 212 Business Letters and Reports Bus. Org. 222 Insurance 3 Bus. Org. 322 Credits and Collections 3 Bus. Org. 350 Business Management 3 Econ. 303 Money and Banking 3 Econ. 305 Economics and Social Statistics 3 Liberal Arts Elective 3 35
Fourth Year Hrs. Acctg. 403 Federal Taxes I 3 Acctg. 404 Federal Taxes II 3 Acctg. 405 State and Local Taxes 3 Acctg. 410 Statement Analysis 2 Acctg. 415 Systems Bus. Org. 456 Development of Exceutive Ability Bus. Org. 456L Development of Exceutive Ability Laboratory Econ. 365 Economics and Social Statistics 3 Philosophy and Religion Elective or Humanities 401 or 402 3 Liberal Arts Electives 6 Elective 31	Fourth Year

Advertising

First Year Hrs.	Second Year Hrs.
Art 110 Color and Design I Bus. Org. 111 Principles of Business 3 Bus. Org. 120 Economic Geography 3 Bus. Org. 131 Mathematics of Business 3 Comm. 105-106 Basic Course I-II 6 Science 6 Sec. Sci. 101 & 102 Introduction to the Social Sciences I & II 6 I & F E. 107 & 108 Health Ed. I I & II II 11/4 II. & P. E. activity courses 1 Orientation 100 14/4 33	Acctg. 201-202 & 2011-202L Elementary Accounting & E. A. Laboratory & Adv. 227 Advertising Principles 3 Adv. 228 Advertising Procedures 3 Art. 223 Advertising Procedures 3 Bus. Org. 210 Public Relations 3 Comm. 107 Basic Course III 3 Hist. 201 & 202 The United States 4 Mdsg. 224 Marketing 3 Mdsg. 225 Salesmanship 3 H. & P. E. activity courses 1 34
Third Year Hrs. Adv. 329 Advertising Copy 3 Adv. 330 Advertising Layout 3 Bus. Org. 201 & 202 Business Law 1 & 11 Bus. Org. 212 Business Letters and Reports 203, 204, 205, 206, 251, 253, or 275 Mdsg. 411 Buying and Merchandising Methods 7 Hill Buying and Merchandising Methods 8 Philosophy and Religion elective, or Humanities 401 or 402 3 Psych. 201 General Psychology 3 Elective (Upper Division) 3	Fourth Year Hrs. Adv. 401 Advertising Problems 3 Adv. 411 Direct Advertising 3 Adv. 414 Advertising Case Studies 3 Adv. 415 Radio and Television Advertising 3 Adv. 451 Seminar 1 Bus. Org. 322 Credits and Collections 3 Econ. 305 Economic and Social Statistics 3 Mdsg. 420 Sales Promotion 3 Mdsg. elective (Upper Division) 5 Elective (Upper Division) 2 Elective (Upper Division) 3

Management

Suggested Curriculum for the Degree of Bachelor of Science in Business Administration with the Major in Management and the Minor in Accounting

The following suggested curriculum meets all the requirements demanded by the preceding curriculums.

	First Year	Hrs.
Acctg. 201-202 ing & E. A.	Elementary Laboratory	Account-
Comm. 105-106	Basic Course	I-II 6
	College Algebr	
Mdser 224 Mar	keting	2
Soc. Sci. 101 Social Science Science (Labor H. & P. E. 10 I & II	Introduction ces I atory) 07 & 108 Heal	to the
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	Third Year	Hrs.
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Second Year H	rs.
Acctg. 301-302 & 301L-302L Intermed ate Accounting & I. A. Laboratory	
Bus. Org. 201 & 202 Business Law I & II	. 6
Bus. Org. 210 Public Relations	. 3
Bus. Org. 212 Business Letters and Reports	.3
Bus. Org. 221 Mathematics of Finance	
Comm. 107 Basic Course III	
Econ. 202 Principles of Economics Engl. 200, 203, 204, 205, 206, 251, 253, or 275	. 3
Soc. 203 Principles of Sociology	
H. & P. E. activity courses	34
Fourth Year H	rs.

	Third Year		Hrs.
Econ. 303 Fina	sic Cost Accuraced Cost vanced Cost vanced Cost Principles 222 Insurar ancial Organ statement Aronomic and Analysis and 2 The Unit lesmanship 1 Religion el 401 or 402.	Accounting Accounting Accounting Accounting Accounting Of Trans Accounting Ac	. 3 ang 3 ang 3 ang 3 ang 3 ang 2 ang 2 ang 2 ang 3 an
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Bus. Org. 340 Office Management.
and Methods or Econ. 404 Person- nel Management
Bus. Org. 350 Business Management 3
Bus. Org. 410 Material Handling and
Inventory Control or Bus. Org. 419
Production Management3
Econ. 401 Labor Problems
Econ, 403 Business and Government 3
Engr. 366, 367 Industrial Organiza-
tion and Management
Mdsg. 409 Retail Marketing or 410
Industrial Marketing 2 or 3
Mdsg. 411 Buying and Merchandising
Methods or 441 Industrial Pur-
chasing I
Electives 6-3
35-33

Bus, Org. 322 Credits and Collections 3

The following courses are suggested as electives:

Acetg. 416 Budgetary Control Acetg. 417 Controllership Bus. Org. 320 Advanced Public Relations Econ. 304 Public Finance Econ. 319 Economics of American Industry 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 Sp. & Dram. 315 Debating & Public

Public Relations

Discussion

Suggested Curriculum for the Degree of Bachelor of Science in Business Administration with the Major in Public Relations

This suggested curriculum meets all the requirements met by the preceding curriculums. Attendance is required in the non-credit laboratory course taken in conjunction with Accounting 201-202. The student should see also "Public Relations" under Courses of Instruction in the College of Arts and Sciences section.

At least 9 hours of electives, including 3 hours of literature, must be courses in the College of Arts and Sciences. Suggested electives are listed below the curriculum.

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First Year Hrs. Bus. Org. 111 Principles of Business 3 Bus. Org. 120 Economic Geography 3 Bus. Org. 131 Mathematics of Business 3 Comm. 105-106 Basic Course I-II 6 Science Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II 6 H. & P. E. 107 & 108 Health Ed. I & II H. & P. E. activity courses 1 Orientation 100 1/2 30	Second Year
Third Year	Bus. Org. 320 Advanced Public Relations 3 Bus. Org. 322 Credits and Collections 3 Econ. 319 Economics of American Industry Econ. 401 Labor Problems or 404 Personnel Management. 3 Engl. 355 News Writing and Reporting Engl. 357 Editing and Make-Up 3 Philosophy and Religion elective, or Humanities 401 or 402 3 Electives (Upper Division) 10

The following courses are suggested as electives:

Econ. 303 Financial Organization
Econ. 315 Corporation Finance
Econ. 403 Business and Government
Hist. 252 Latin America
Hist. 302 Economic History of the U.S.
Hist. 308 The Far East
Literature courses (English or foreign)
Phil. and Rel. 201 Contemporary
Religion and Its Backgrounds
Phil. and Rel. 301 & 302 History of
Pbilosophy
Pol. Sci. 304 International Politics

Pol. Sci. 305 Foreign Policies of the Great Powers Pol. Sci. 403 Comparative Government Psych. 301 Applied Psychology Psych. 401 Business Psychology Psych. 405 Interviewing and Counseling 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 Management

The following suggested curriculum meets all the requirements demanded by the preceding curriculums. There may be substitution of courses or waiver of courses because of experience at the discretion of the adviser and the head of the Department of Business Organization.

Fire	st Year	Hrs.	Second Year Hrs.
Bus. Org. 111 Prin Bus. Org. 126 Eco Bus. Org. 131 Math Comm. 105-106 Ba Science Soc. Sci. 101 & 10 the Social Scient H. & P. E. 107 C I & II H. & P. E. activ Orientation 100	nciples of Bu nomic Geogra ematics of B sic Course I- 2 Introduction ces I & II & 108 Health ity courses	asiness 3 aphy 3 usiness 3 -II 6	Acctg. 201-202 & 201L-202L Elementary Accounting & E. A. Laboratory Bus. Org. 201 & 202 Business Law I & II Bus. Org. 210 Public Relations or Mdsg. 225 Salesmanship Bus. Org. 215 Principles of Transportation Comm. 107 Basic Course III Econ. 202 Principles of Economics Hist. 201 & 202 The United States Mdsg. 224 Marketing H. & P. E. activity courses

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	Third Year	Hrs.	Fourth Year Hrs
mediate Accordance oratory Bus. Org. 212 Reports Bus. Org. 216 portation Bus. Org. 217 tation Rus. Org. 222 Econ. 305 Econ. 315 Corg Econ. 315 Corg Econ. 315 Corg Econ. 319 Econ. 319 Econ. 319 Corg Econ. 319 Corg Econ. 319 Corg Econ. 319 Corg Econ. 319 Go Industry Engl. 200, 203 253, or 275 Psych. 201 Ge	& 301L-302L lounting & I. A. Business Letters Elementary T Intermediate Trail Insurance tomic and Social toration Finance thomics of Amer 204, 205, 206, neral Psychology 213 Public Speak	nter- Lab- 5 s and 3 rans- 3 nspor- 3 3 3 251.	Bus. Org. 306 Advanced Transportation Bus. Org. 310 Industrial Organization Bus. Org. 322 Credits and Collections Bus. Org. 340 Office Management and Methods Bus. Org. 350 Business Management Bus. Org. 406 I. C. C. Practice and Frocedure Bus. Org. 410 Material Handling and Inventory Control or elective Econ. 404 Personnel Management Philosophy and Religion elective, or Humanities 401 or 402 Electives (Upper Division)

The following courses are suggested as electives:

Bus. Org. 301 Air Transportation Bus. Org. 307 Commercial Motor Transportation Econ. 304 Public Finance Econ. 319 Economics of American Industry Econ. 402 Comparative Economic Systems

Hist, 302 Economic History of the U.S. Mdsg. 410 Industrial Marketing Mdsg. 451 Industrial Purchasing I Modern Languages (6 hours) Phil. & Rel. 301 History of Philosophy Pol. Sci. 304 International Relations Psych. 312 Industrial Psychology

Secretarial Studies

Williams: Cook, Janosik, Hanna, Murphy, Sebestuen, Sozio, Turner, Wilds.

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, the required curriculum is given under Education courses in the College of Arts and Sciences section: for the third, see the first two years of the curriculum below.

Lower Division Courses

100. Typewriting. For beginners. A speed of 20 words a minute must be attained. Sebestyen or Wilds.

101. Typewriting. Advanced letter-writing, legal papers, tabulating, filling in forms, and speed work. A speed of 40 words a minute must be attained. Prereq.: a speed of 20 words a minute. Sebestyen or Wilds.

104-105. Secretarial Accounting. First semester: single proprietorship: second semester: partnership. Turner or Cook. 2 + 2 h. c.

200. Shorthand. For beginners. The fundamentals of the Gregg system are presented. Volume 1 is to be completed. Turner or Cook.

4 h. c.

201. Transcription. Advanced typewriting and transcribing. A speed of 60 words a minute must be attained. Sebestyen or Wilds. 2 h. c.

202. Business Mathematics. Computation for accounting, discount, insurance, interest, payroll, social security, taxes, etc. Williams. 2 h. c.

203. Secretarial Accounting. Corporation accounting. Turner or Janosik.

207. Business Communication. Business terms: the psychology mechanics, and principles of effective letter writing: practice in writing various types of letters and in correcting common errors. Turner or Hines. 3 h. c.

208. Commercial Law. A brief study of the following: contracts, sales, bailments, negotiable instruments, guaranty and suretyship, agency, master and servant, partnership, corporations, insurance, property, wealth and income and their management, the financial system and investing, buying and selling relations, and the organization and operation of business. Williams.

215, 216. Office Machines. The operation of adding, calculating, mimeographing, and bookkeeping machines and dictaphones. 3 + 3 h. c.

Upper Division Courses

300-301. Shorthand. Beginning dictation and transcription. A speed of 60 words a minute must be attained in the first part. and 80 words a minute in the second part. Prereq.: Secretarial Studies 200. or passing a qualifying test. Hanna, Turner, or Murphy. 2 + 2 h. c. 302. Shorthand. A dictation speed of 100 words a minute must

be attained, and a transcription rate of 25 words a minute. Hanna or Murphy.

Secretarial Dictation. Dictation at 120 words a minute and transcription at 35 words a minute. Hanna or Murphy.

403. Office Practice. Application of theory to practice: typical office problems, dictation, transcription, copy-work, answering letters, filling in forms; discussion of office procedure. Prereq.: Secretarial Studies 301. 3 h. c.

Filing and Indexing. The basic principles of filing and index-404. ing, and practice in the most widely used procedures. Hanna.

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.

after satisfactority confined	
First Year Hrs.	Second Year Hrs.
Comm. 105-106 Basic Course I-II 6 Sec. St. 100 and 101 Typewriting 4 Sec. St. 104-105 Secretarial Accounting 4 Sec. St. 200 Shorthand 4 Sec. St. 215 Office Machines 3 Sec. St. 300-301 Shorthand 4 Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II 6 H. & P. E. 107 & 108 Health Ed. I & II	Comm. 107 Basic Course III Sec. St. 201 Transcription 2 Sec. St. 202 Business Mathematics 2 Sec. St. 203 Secretarial Accounting Sec. St. 207 Bus. Communication 3 Sec. St. 216 Office Machines or elective Sec. St. 302 Shorthand 2 Sec. St. 303 Secretarial Dictation 2 Sec. St. 403 Office Practice 3 Sec. St. 403 Office Practice 3 Sec. St. 403 Office Practice 3 Sec. St. 403 General Psychology 3 II. & P. E. activity courses 1 30
Third Year Hrs.	Fourth Year Hrs.
*Acetg. 303 Basic Cost Accounting 3 Bus. Org. 120 Economic Geography 3 Bus. Org. 210 Public Relations 3 Bus. Org. 222 Insurance 3 Hist. 201 & 202 The United States 6 Mdsg. 224 Marketing 3 Mdsg. 225 Salesmanship 3 **Science 8 or 9 32 or 33	Adv. 227 Advertising Principles Adv. 228 Advertising Procedures Bus. Org. 322 Credits and Collections Bus. Org. elective (Upper Division) Humanities 401, 402, 403, or 404 Econ. 305 Economic and Social Statistics Psych. 401 Rusiness Psychology Electives (Upper Division)

^{*}The student's qualifications for entering this course will be determined by the head of the Department of Accounting.

**Either 8 hours of biology, of chemistry, or of physics, or 9 hours in any

science subjects.

William Rayen School of Engineering

GENERAL INFORMATION

Objectives

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The aim of William Rayen School of Engineering is to impart such special and technical knowledge, based on a sound understanding of the fundamental sciences and arts upon which all engineering rests, as will enable its graduates to enter the various branches of engineering and to maintain themselves while gaining professional experience: and at the same time to enable them to develop their general cultural and educational background.

Each engineering curriculum therefore combines three interrelated programs: the basic science program, the technical program, and the social relations program. 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 social relations 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 both as an engineer and as a citizen and an individual.

In addition, certain courses in business administration are included, to improve the student's understanding of the broader area in which his engineering training will be applied.

Buildings and Facilities

Rayen Building, the former home of Rayen School, was made available to Youngstown University in 1945, and after it had been thoroughly remodeled and reinforced to enable it to house heavy machinery. 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 spacious laboratories have up-to-date equipment not only for all standard experiments, but, in most fields, for much advanced study, lit ample drawing rooms, classrooms, study, and offices are entirely modern in lighting and all other essentials. 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 Luboratory 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, and other equipment used in the accurate measurement of electrical quantities.

The Electronics Laboratory is equipped with vacuum, gas-filled, and special-purpose tubes; impedance bridges: vacuum-tube voltmeters: cathoderay 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 Strength of Materials Laboratory has three Universal testing machines: a 400.000-pound hydraulic Olsen and two motor-driven Riehles. 60.000- and 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 Laboratory has a complete power plant including a 150-psi. 150-horsepower boiler, a 60-kw turbo-generator, a 35-kw horizontal steam-engine generator, and a 10-kw vertical steam-engine generator with pumps, condensers, and cooling tower. There are also another complete but smaller power plant: a 25-kw Cummings Diesel-driven generator; internal combustion units: hydraulic pumps and reservoir; commercial refrigeration and air-conditioning units; a motor-driven blower set for airflow study; and various heat exchangers, calorimeters, gage testers, gas analyzers, etc.

The Department of Metallurgical Engineering is located in Clingan-Waddell Hall on nearby Rayen Ave. 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 electric metallographic laboratory equipped with a collection of approximately four hundred prepared metallic specimens, sixteen metallurgical microscopes and one wide-field steroscope 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 spectograph with autographic electronic recorders. 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 instructors 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 section on Awards and Prizes.

Tuition and Fees

See pages 51-57.

Scholarships and Loans

Scholarships and loan funds applicable to engineering students are listed in the general section on Scholarships and Loan Funds.

ADMISSION AND GRADUATION REQUIREMENTS

For admission to William Rayen School of Engineering see the general section on Admission to the University. For courses leading to the degree of Bachelor of Engineering, see the pages below.

Grade Requirements

An engineering student whose point index is less than 1.00 at the end of any semester will be on probation the following semester. If he fails to raise his point index to 1.00 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 2.00 or more. (See section f-2 on page 45. For the significance of the point index, see pages 48-49.)

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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. 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 pages 38-39, where the explanatory notes should be read carefully.
- 2. The course requirements and other requirements to be completed in the University. These comprise:
- a. The general requirements for graduation from the University. explained on pages 37 and 39-41 and recapitulated below.
 - b. Requirements peculiar to the degree, which are stated below.
- c. Courses required for the student's major, which is specialization in a branch of engineering. (A minor is completed through the required courses in mathematics.)

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 leads.** A student planning to take summer courses should consult his advisert.

R. O. T. C. courses are considered additional electives and must be carried in excess of the minimum requirements for a degree in engineering.

1. Pre-College

Subject	High school units
English	3
United States history and civics	
Algebra	2
Geometry	and the self-temperature of the second
Physics	mining the advisor of the second
Others!	<u> </u>

In the University

a. General

Other than courses (see pages 39-40):

Upper Division status (including completion of any specified preparatory courses not completed at time of entrance).

Major and minor requirements. Residence requirement. Course-level requirements. Grade-average requirement

Application for graduation.

*The curriculum for Chemical Engineering is designed for a four-year program.

**This plan is not encouraged if the student intends to hold a strenuous or time-consuming outside job regularly while enrolled in classes. iIt is recommended that such courses be the non-science courses, such as Social Science 101 and 102 and Business Organization 201 and 202.

3A unit of mechanical drawing and a half-unit of trigonometry or solid geometry, or both, are strongly advised.

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Basic courses: Cred	lit hour
Communication 105-106-107, Basic Course 1-II-III *Inglish 200, 203, 204, 205, 206, 275	3
Health and Physical Education 107 and 108, Health Education I and Health and Physical Education activity courses	
Orientation 100, Freshman Orientation	1/2
Area courses:	
Religion: a course in the Department of Philosophy and Religion, Humanities 401 or 402	or 3
Science: included in the degree requirements listed below	
Social studies:	
Social Science 101 and 102, Introduction to the Social Sciences *History 200, 201, 202, 213, 214, 252, 254	
Economics 319, Economics of American Industry	
	31
b. For the Degree	,,
Other than courses:	
Completion of at least 152 credit hours. Grade average of 1.00 ("C") at all times.	
Science and mathematics courses:	
Chemistry 111-112, General Chemistry	
Mathematics 101-102, College Algebra	
Mathematics 103 and 104. Trigonometry and Analytic Geometry	
Mathematics 209-210, Calculus I and II: Differential and Integral	
Physics 201-202 and 2011, and 2021., General Physics	8
Engineering courses:	
Engineering 101, Elementary Engineering Drawing	2
Engineering 103, Advanced Engineering Drawing	
Engineering 202, Engineering Drawing: Descriptive Geometry	
Engineering 220, Analytical Mechanics: Statics Engineering 301, Report Writing	3
Engineering 326 and 326L. Elementary Strength of Materials	4
Engineering 401-402. Thesis	4
	56
Curriculums	
Semester by semester curriculums are available in the offices of	William
Semester by semester curricultures are available in the offices of	william

Semester by semester curriculums are available in the offices of William Rayen School of Engineering.

Chemical Engineering

The following curriculum is designed to be completed in four years. but it is recommended that the student plan to extend his program over a longer period. A total of 152 semester hours is required.

^{*}Except for Chemical Engineering majors.

160	William Rayen School of Engineering
First Year Hrs. Chem. 111-112 General Chemistry 8 Comm. 105-106 Basic Course I-II 6 Engr. 101 Elementary Engineering Drawing 2 Engr. 103 Advanced Engineering 2 Math. 101-102 College Algebra 4 Math. 103 Trigonometry 3 Math. 104 Analytic Geometry 3 Soc. Sci 101 & 102 Introduction to the Social Sciences 6 H. & P. E. 107 & 108 Health Education 1 & II H. & P. E. activity courses 11 Orientation 100 37	Second Year
Third Year Hrs. Bus. Org. 201 & 202 Business Law I & II 6 Chem. 221, 222 Organic Chemistry 8 Engr. 313 Fundamentals of Electrical Engr. 314 & 314L Elements of Electrical Machines 4 Engr. 317 & 317L Applied Thermodynamics 4 Engr. 326 & 326L Elementary Strength of Materials 4 Engr. 380-381 Principles of Chemical Engineering 6 Engr. 382 Chemical Engineering 7 Echniques 3 Engr. 480 Unit Design 3	Fourth Year Hrs. Chem. 407, 408 Physical Chemistry 6 Econ. 319 Economics of American Industry 3 Engr. 301 Report Writing 2 Engr. 328 & 328L Hydraulics 4 Engr. 374 & 374L Heat Engineering 4 Engr. 383, 384, 385 Unit Operations 9 Engr. 401-402 Thesis 4 Philosophy and Religion elective or Humanities 401 or 402 3 35
The Civil Engineering curricular to the required	Engineering ulum requires a total of 153 semester 141 hours, each student must complete echnical) from the list of electives given
First Year Hrs. Chem. 111-112 General Chemistry 8 Comm. 105-106 Basic Course I-II 6	Second Year

below.				
	First Year	Hrs.	Second Year	Hrs.
Comm. 105- Engr. 101 E Drawing Engr. 103 Drawing Math. 101-10 Math. 103 Math. 104 H & P E.	12 General Chemi 106 Basic Course lementary Engines Advanced Engines 02 College Algebra Trigonometry Analytic Geometry 107 & 108 Health 1 & 11	stry 8 I-II 6 ering 2 ring 2 4 3 3	Comm. 107 Basic Course III Engr. 130 Surveying Engr. 202 Engineering Drawing Descriptive Geometry Engr. 220 Analytical Mechanics: Statics Math. 209-210 Calculus I-II Physics 201, 202 and 201L, 202L General Physics H. & P. E. activity courses	3 10

Education 1 & II	31
Third Year	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 Machines 4 Engr. 330 Theory of Structures 3 Engr. 331 Design of Steel Structures 3 Engr. 332 Highway Construction 5 Engr. 333 Sewage Disposal Engr. 433 Indeterminate Structures 3 Philosophy and Religion elective or Humanities 401 or 402 3 31

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Fifth Year	Hrs.
Engr. 401-402 Thesis Engr. 430 Concrete Construct Engr. 432 Water Supply	ion3
Engr. 434 & 434L Soil Mecha Engr. 437 Seminar Electives (technical)	nics4
Electives (non-technical)	6
	28

Electives

Hrs.	Hrs.
Bus. Org. 201 Business Law I 3 Bus. Org. 202 Business Law II 3 Eagr. 317 & 317L Applied Thermodynamics 4	Engr. 447 Fluid Mechanics 3 Engr. 476 Mechanical Vibrations 3 Foreign Language (German, French, or Russian) 6
Engr. 327 & 327L Advanced Strength of Materials	Math. 310 Partial Differential Equations
Engr. 435 Sewage Systems Design6 Engr. 438 Civil Engineering	Math. 320 Vector Analysis 3 Math. 340 Statistics
Surveying	Math. 360 Numerical Analysis 3 Humanities
Engr. 441 Computer Techniques3	Social Science (200-level or above)3

Electrical Engineering

The Electrical Engineering curriculum requires a total of 157 hours. In addition to the required 145 hours, each student must complete 12 hours (6 technical and 6 non-technical) from the list of electives given below.

First Year	Hrs.	Second Year Hrs.
Chem. 111-112 General Chemistry Comm. 105-106 Basic Course 1-11 Engr. 101 Elementary Engineering. Drawing Engr. 103 Advanced Engineering Drawing Math. 101-102 College Algebra Math. 103 'Trigonometry Math. 104 Analytic Geometry H. & P. E. 107 & 108 Health Education I & II H. & P. E. activity courses Orientation 100	6 824333	Comm. 107 Basic Course III 3 Engr. 202 Engineering Drawing; Descriptive Geometry 3 Math. 209-210 Calculus I-II 10 Physics 201, 202 and 201L, 202L General Physics 8 Soc. Sci. 101 & 102 Introduction to the Social Sciences 6 H. & P. E. activity courses 1
Third Year	Hrs.	Fourth Year Hrs.
Econ. 319 Economics of American Industry Engr. 213 & 213L Principles of Electrical Engineering Engr. 220 Analytical Mechanics: Statics Engr. 251 General Metallurgy: Adaptive Engr. 311 & 311L Alternating Current Circuits Engl. 200, 203, 204, 205, 206, or 27 Hist. 200, 201, 202, 213, 214, 252 or 254 Math. 309 Ordinary Differential Equations Math. 310 Partial Differential Equations or 320 Vector Analys Elective (non-technical)	3 3 3 3 3	Engr. 312 & 312L Electrical Networks 4 Engr. 315 & 315L Electrical Measurements Engr. 317 & 317L Applied Thermodynamics Engr. 325 Analytical Mechanics: Dynamics Dynamics Strength of Materials Engr. 416 & 411L Direct Current Machines Engr. 415 & 415L Electronic Circuit Elements Engr. 418 Electromagnetic Field Theory 30

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Fifth Year Hrs.
Engr. 301 Report Writing
Engr. 401-402 Thesis
nating Current Apparatus 8 Engr. 416 & 416L Electronic
A malianting
Physics 426 Elements of Nuclear
or Humanities 401 or 402
Elective (non-technical)3
33

Electives

Engr. 252 General Metallurgy: Extractive Engr. 327 & 327L Advanced Strength of Materials Engr. 374 & 374L Heat Engineering 4 Engr. 417 Electric Power Transmission Engr. 419 Industrial Applications 3 Engr. 420 Industrial Electronics 3	Engr. 471 Refrigeration and Air Conditioning

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 (6 technical and 6 non-technical) from the list of electives given below.

First Year Chem. 111-112 General Chemistry Comm. 105-106 Basic Course L-II Engr. 101 Elementary Engineering Drawing Engr. 103 Advanced Engineering Math. 101-102 College Algebra Math. 103 Trigonometry Math. 104 Analytic Geometry H. & P. E. 107 & 108 Health Education I & II	2
H. & P. E. activity courses Orientation 100	
Third Year	Hrs.

Second Year	Hrs.
Comm 107 Rasic Course III	3
Free 209 Engineering Drawing	
Descriptive Geometry Math. 209-210 Calculus I-II	10
Math. 209-210 Calculus 1-11 Physics 201, 202 and 201L, 202L	
Campual Physics	8
a cai int & 102 Introduction	6
to the Social Sciences H. & P. E. activity courses	I
H. & P. E. activity Courses	0.000
	31

	Third Year	Hrs.
Acctg. 301 Bus. Org	Elementary Accou Intermediate Acco 201 & 202 Business	Law
	Analytical Mecha	nies:
A State of the same	General Metallurg	
	& 317L Applied To	
RK +h 240.	341 Mathematical S	statis-
		31

Fourth Year Hrs.
Una Org 221 Mathematics of Finance 3
From 319 Economics of American
Engr. 301 Report Writing Engr. 313 Fundamentals of Electrical
Engr. 313 Fundamentals of Income.
From 314 & 314L Elements of
Telestrian Machines
Engr. 325 Analytical Mechanics:
Dynamics
Engr. 326 & 326L Elementary Strength of Materials
The act Tob Analysis and
The last of the second of the
nec 967 Industrial Urvaniza-
tion and Management I, II6
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	Fifth Year		Hrs.
Econ. 401	Labor Problem	ns	3
Engr. 401	-402 Thesis		4
Engr. 461	Production Pla	inning and	
Engr 465	& 466 Methods	Project	3
ing I &	II	Engineer-	
Philosophy	and Religion ties 401 or 402	elective or	
Electives	(technical)		3
Electives	(non-technical)		0
Diccorres	(non-technical)	*****	
			20
			40

Electives

Hrs.	Hrs.
Econ. 404 Personnel Management 3 Engr. 252 General Metallurgy: 3 Engr. 311 & 311L Alternating Current Circuits 4 Engr. 327 & 327L Advanced 5trength 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 Heat Engineering 4 Engr. 433 Indeterminate Structures 3	Engr. 470 & 470L Advanced Machine Design 4 Engr. 475 & 475L Internal Combustion Engines 4 Engr. 477 Fluid Mechanics 3 Engr. 478 Heat Transfer 3 Foreign Language (German, French, or Russian) 6 Math. 309 Ordinary Differential Equations 3 Math. 310 Partial Differential Equations 3 Math. 360 Numerical Analysis 3 Math. 360 Numerical Analysis 3 Social Science or Humanities 6

Mechanical Engineering

The Mechanical Engineering curriculum requires a total of 152 hours. In addition to the required 140 hours, each student must complete 12 hours (6 technical and 6 non-technical) from the list of electives given below.

Fi	rst Year	Hrs.	Second Year Hrs.
Chem. 111-112 G Comm. 105-106 I Engr. 101 Eleme Drawing Engr. 103 Advan	eneral Chemis lasic Course I- ntary Engineer ceel Engineer bliege Algebra nometry tie Geometry & 108 Healti II	try 8 -II 6 -ring 2 	Comm. 107 Basic Course III
Th	ird Year	Hrs.	Fourth Year Hrs.
Engl. 200, 203, 2: Engr. 220 Analyt Statics Engr. 301 Report Engr. 313 Funda Engineering Engr. 314 & 314I Electrical Macl Engr. 343 Fuels Engr. 343 Fuels Hist. 200, 201, 20	D4, 205, 206 or ical Mechanics Writing mentals of Ele Elements of incs Applied The 2, 213, 214, 25 ary Differentia	275 . 3	Econ. 319 Economics of American Industry 3 Engr. 251 General Metallurgy: Adaptive 3 Engr. 325 Analytical Mechanics: Dynamics 3 Engr. 326 & 326L Elementary Strength of Materials Engr. 327 & 327L Advanced Strength of Materials 4 Engr. 328 & 328L Hydraulics Engr. 374 & 374L Heat Engineering 4 Philosophy and Religion elective or Humanities 401 or 402 3
Equations	· · · · · · · · · · · · · · · · · · ·	3	28

Fifth Year	Hrs.
Engr. 371 & 371L Elementary Machine Design Engr. 401-402 Thesis Engr. 470 & 470L Advanced Machine Order of 475 & 475L Interpretaint of 475 & 475L Interpretaint of Muclea Reactors Physics 426 Elements of Nuclea Physics Electives (technical) Electives (non-technical)	achine ernal
	30

Electives

Hrs.	Hrs.
Chem. 203, 204 Qualitative Analysis 4 Econ. 303 Financial Organization 3 Econ. 401 Labor Problems 3 Engr. 213 & 213L Principles of Electrical Engineering 4 Engr. 252 General Metallurgy: Extractive 3 Engr. 311 & 311L Alternating Current Circuits 4 Engr. 330 Theory of Structures 3 Engr. 365 Quality Control 3 Engr. 365 Quality Control 3 Engr. 366 Industrial Organization and Management I 3 Engr. 430 & 430L Concrete Construction 4 Engr. 433 Indeterminate Structures 3 Engr. 471 Refrigeration and Air Conditioning 3 Engr. 476 Mechanics 3 Engr. 476 Mechanics 3 Engr. 476 Fluid Mechanics 3	Engr. 478 Heat Transfer 3 Foreign Language (German, French or Russian) 6 Hist. 302 Economic History of the United States 3 Hist. 390 Diplomatic History of the United States 3 Math. 320 Vector Analysis 3 Math. 320 Vector Analysis 3 Math. 341 Mathematical Statistics 1 3 Math. 341 Mathematical Statistics 1 3 Math. 360 Numerical Analysis 3 Physics 301 Classical Mechanics 4 Physics 303 Electricity and Magnetism 4 Physics 322 & 322L Physical Optics and Advanced Light 4 Philosophy and Religion or Humanities 6 Pol Sci. 201 American National Government and Politics 3 Pol. Sci. 202 American State and Local Government 3

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 (6 technical and 6 non-technical) from the list of electives given below and from the suggested electives included in the curriculum.

First Yeor Hrs. Chem. 111-112 General Chemistry 8 Comm. 105-106 Basic Course I-II 6 Engr. 101 Elementary Engineering Drawing Engr. 103 Advanced Engineering	Second Year Hrs. Comm. 107 Basic Course III 3 Engr. 202 Engineering Drawing: Descriptive Geometry 3 Engr. 251 General Metallurgy: Adaptive 3
Drawing 2 Drawing 2 Math. 101-102 College Algebra 4 Math. 103 Trigonometry 3 Math. 104 Analytic Geometry 3 H. & P. E. 107 & 108 Health Education I & II 11/2 H. & P. E. activity courses 1 Orientation 100 31	Engr. 252 General Metallurgy: Extractive Math. 209-210 Calculus I-II 10 Physics 201, 202 and 201L, 202L General Physics 8 Soc. Sci. 101 & 102 Introduction to the Social Sciences 6 H. & P. E. activity courses 1

Curriculums; Courses of Instruction	165
Third Year Hrs. *Chem. 203, 204 Qualitative Analysis 4 Engr. 220 Analytical Mechanics: Statics 3 Engr. 255 Metallurgical Calculations 3 Engr. 313 Fundamentals of Electrical Engineering 4 Engr. 314 & 314L Elements of Electrical Machines 4	*Chem. 407, 408 Physical Chemistry .6 Econ. 319 Economics of America Industry .7 Engr. 301 Report Writing .2 Engr. 326 & 326L Elementary .3 Strength of Materials .4 Engr. 453, 454 Advanced Metal-
Dynamics 3 Engr. 351, 352 Physical Metallurgy 6 Engr. 351L, 352L Metallography Laboratory 3	lography Engr. 456 Nonferrous Metallurgy Engr. 456 Nonferrous Metallurgy Physics 426 Nuclear Physics
Hist. 105, 106 History of Western Civilization 6	au
36	
*Engr. 327 & 327L Strength of Mate Engr. 401-402 Thesi	rials4
Strength of Mate Engr. 401-402 Thesi Engr. 406 Metallurg Extractive *Engr. 407 Metallur Adaptive Engr. 457 X-Ray M Engr. 472 Principles Reactors Philosophy and Reli	Advanced rials 4 5 4 5 4 5 4 5 5 4 5 5 4 5 5 5 5 5 5
Strength of Mate Engr. 401-402 Thesi Engr. 406 Metallurg Extractive *Engr. 407 Metallur Adaptive Engr. 457 X-Ray M Engr. 472 Principles Reactors Philosophy and Reli	Advanced rials 4 5 4 5 4 5 4 5 5 4 5 5 4 5 5 5 5 5 5
Strength of Mate Engr. 401-402 Thesis Engr. 406 Metallurg Extractive *Engr. 407 Metallur Adaptive Engr. 457 X-Ray M Engr. 472 Principles Reactors Philosophy and Reli Humanities 401 or	Advanced rials 4 solution 4 solution 4 solution 4 solution 4 solution 3 gical Processes: setallography 3 solution 6 solution 3 gion elective or 402 3 23 *Elective
Strength of Mate Engr. 401-402 Thesis Engr. 406 Metallurg Extractive *Engr. 407 Metallur Adaptive Engr. 457 X-Ray M Engr. 472 Principles Reactors Philosophy and Reli Humanities 401 or	Advanced rials 4 5 6 6 6 6 7 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8

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Engineering Cernica: Fok. Mosure, Solomon: P. Richley. Electrical Engineering: Kramer: Gibbs, Klingshirn, V. Richley, Siman; Doering.

Industrial Engineering: Charignon: Baker, Marcone, Varraux. Mechanical Engineering: D'Isa: Benkner, Charignon, Deuchler, O'Loughlin, Tarantine, Wilder; Johnson, Petrek; Staff.

Metallurgical Engineering: Fisher: Rein: Heindihofer, Phillips. Terlecki.

Lower Division Courses

101. Elementary Engineering Drawing. The use of drafting instruments. lettering. orthographic projection. sections. isometric drawing. and technical sketching, with special attention to pencil and ink line techniques and the fundamentals of dimensioning. One hour of lecture and three hours of laboratory a week. Fee: \$2.50.

^{*}It is important that the student 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 in the college of Arts and Sciences section, on

103. Advanced Engineering Drawing. Detail and assembly drawings of machine parts. One hour of lecture and three hours of laboratory a week. Prereq.: Engineering 101. Fee: \$2.50.

Surveying. The theory of surveying, and the use of instruments. Practical problems in leveling, traversing, and topography. Maps are drawn from field notes. One hour of recitation and five hours of laboratory. Given in the summer only, in odd-numbered years. Prereq.: Mathematics 101-102, 103 and 104 and Engineering 101. Fee: \$10.00. 3 h. c.

Engineering Drawing: Descriptive Geometry. Exercises in points. oblique lines. and oblique planes in space. Determination of distances, intersections, and angular measurements. The fundamental geometric solids are cut by oblique planes and surfaces developed. Prereq.: Engineering 103. Fee: \$2.50.

213. Principles of Electrical Engineering. A presentation of the fundamental theories of electrical engineering, with emphasis on the concept of electric and magnetic circuits and fields: direct current network solutions: network theorems: simple transients. For electrical engineering majors. Prereq.: Mathematics 209. Physics 201 and 201L: prerequisite or concurrent: Mathematics 210. Physics 202 and 2021..

213L. Principles of Electrical Engineering Laboratory. Three hours a week: taken concurrently with Engineering 213. Fee: \$10.00.

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 209 and Physics 201 and 2011. Prerequisite or concurrent: Mathematics 210 and Physics 202 and 2021..

Route Surveying. Preliminary route location, with the necessary office and field work, including curves used in railroad and highway construction and earth work. Prereq.: Engineering 130. Fee: \$10.00. 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. Chemistry 109-110 or 111-112.

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 109-110 or 111-112.

Metallurgical Calculations. Problems and calculations in pyrometallurgical fuel production and combustion, endothermic and exothermic process reactions, and charge:product valence for the iron blast furnace and the Bessemer, open hearth, and electric steel-making processes. Prereq.: Mathematics 101-102, 103 and 104 and Engineering 251; prerequisite or concurrent: Engineering 252.

Upper Division Courses

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.

Alternating Current Circuits. Sinusoidal currents and voltages: vector representation: solution of series and parallel circuits: real and apparent power: voltage and current loci; balanced and unbalanced polyphase circuits: power in polyphase systems: Fourier analysis of non-sinusoidal waves. Prereq.: Engineering 213, Mathematics 210, Physics 202 and 2021...

Alternating Current Circuits Laboratory. Three hours a week: taken concurrently with Engineering 311. Fee: \$10.00.

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- 312. Electrical Networks. Network theorems: methods of network solution: resonance phenomena: coupled circuits and impedance transformation; filter design and analysis; transmission lines, infinite line and reflection, transient and steady-state behavior of lines. Prereq.: Engineering 311 and 311L.
- 3121. Electrical Networks Laboratory. Three hours a week; taken concurrently with Engineering 312. Fee: \$10.00.
- 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 210. Physics 202 and 2021. 4 h. c.
- 314. Elements of Electrical Machines. A course in direct and alternating current machines for non-electrical majors. Theory and application of direct current motors and generators, transformers, alternators, synchronous motor and converters, and induction motors. Prereq.: Engineering 313.
- 314L. Elements of Electrical Machines Laboratory. Three hours a week: taken concurrently with Engineering 314. Fee: \$10.00. I h. c.
- 315. Electrical Measurements. Electrical units and standards, experimental procedure in measurements, methods of measuring the various electric and magnetic quantities and circuit parameters. Theory and use of potentiometers, A. C. bridges, indicating instruments, instrument transformers, etc. Prereq.: Engineering 311 and 311L.
- 315L. Electrical Measurements Laboratory. Three hours of laboratory a week; taken concurrently with Engineering 315. Fee: \$10.00.

 1 h. c.
- 317. Applied Thermodynamics. The law of conservation of energy and its illustration in the transformation of energy. General energy equations, the characteristic and energy equations of a perfect gas, reversible non-flow processes of gases, the Carnot cycle: heat power plants: steam and steam calorimetry, steam fuels and combustion, steam boilers, steam generator auxiliaries; feedwater treatment, feedwater heaters; draft apparatus, chimneys, fans. Prereq.: Physics 201 and 202 and Mathematics 209-210.
- 317L. Applied Thermodynamics Laboratory. Three hours of laboratory a week: taken concurrently with Engineering 317. Fee: \$10.00. I h. c.
- 325. Analytical Mechanics: Dynamics. The motions of a particle, the dynamics of moving bodies. Newton's Laws, simple harmonic motion, mechanical vibrations, impulse and momentum, balancing, the gyroscope, governors, and work and energy. Prereq.: 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.
- 3261. 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 non-ferrous metals, wood, concrete, and brick. Taken concurrently with Engineering 326. Fee: \$10.00.
- 327. Advanced Strength of Materials. Theories of failure for combined stresses: fatique, impact and creep properties of materials: structure of materials and the control of their properties. Prereq.: Engineering 326.

3 h. c.

327L. Advanced Strength of Materials Laboratory. Elementary theory and application of electrical strain gages, photoelasticity, and brittle lacquers. Taken concurrently with Engineering 327. Fee: \$10.00. 1 h. c.

328. Hydrautics. 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.

328L. Hydraulics Laboratory. Two hours a week; taken concurrently with Engineering 328. Fee: \$10.00.

- 330. Theory of Structures. Reactions, shears, bending moments, and deflections in beams and trusses due to external fixed and moving loads; design of simple trusses and beams; analytical and graphical methods of solution. Three hours of lecture and recitation a week. Prereq.: Engineering 220 and 337.
- 331. Design of Steel Structures. The theory and design of beams, girders, steel bridges, and steel roofs. Three hours of lecture and recitation and three hours of design and calculation a week. Prereq.: Engineering 330.
- 332. Highway Construction. The design and construction of roads and pavements: the materials used in their construction; their location and maintenance. Prereq.: Engineering 230.
- 333. Sewage Disposal. The collection, treatment, and disposal of sewage, with special attention to municipal sewage and the construction of disposal plants. Prereq.: Chemistry 109-110 or 111-112, and Engineering 328 and 328L.
- 343. Fuels. The origins, production, and combustion of natural and manufactured fuels, and the chemical principles involved; the utilization of fuel and burners in metallurgical furnaces. Prereq.: Chemistry 110 or 112 and Engineering 317.
- 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.
- 351L, 352L. Metallography Laboratory. Study of the more common micro-structures 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 micro-structure. Instruction in microscope technique. Taken concurrently with Engineering 351, 352. One three-hour period a week. Fee: \$10.00 each semester. $1\frac{1}{2} + 1\frac{1}{2}h$ 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.: Admission to upper division status.
- 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 manufacturing operations. Prereq.: Mathematics 340.

366, 367. Industrial Organization and Management I and II. The general principles of industrial organization and management. Prereq.: Admission to upper division status.

3 + 3 h. c.

371. Elementary Machine Design. A study of the design of machine elements such as shafts. keys, screws, belts, brakes, clutches, and flywheels. Prereq.: Engineering 202 and 327.

3 h. c.

- 371L. Elementary Machine Design Laboratory. Two or three practical design problems, each incorporating the design of several machine elements. Taken concurrently with Engineering 371.

 1 h. c.
- 374. Heat Engineering. Practical application of thermodynamic principles to steam, air, and gas power. Prereq.: Engineering 317 and 343.
- 374L. Heat Engineering Laboratory. Three hours a week: taken concurrently with Engineering 374. Prereq.: Engineering 317L. Fee: \$10.00.
- 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. Prereq.: Chemistry 202. 3+3h. 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. Prereq.: Chemistry 202. Identical with Chemistry 342.
- 383. 384. 385. Unit Operations. 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 380-381 and 382. 3+3+3 h. c.
- 401-402. Thesis. The student prepares a written report. of at least 2.500 words, of 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.
- 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, 351, and 352.
- 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.

 3 h. c.
- 411. Direct Current Machines. Dynamo principles: armature windings: armature reaction: voltage characteristics of generators: speed-torque characteristics of motors: starting and speed control of motors: ratings, losses, and efficiencies: special direct current machines such as Amplidyne, Rototrol, and others. Prereq.: Engineering 213.

 3 h. c.
- 411L. Direct Current Machines Laboratory. Three hours a week; taken concurrently with Engineering 411. Fee: \$10.00. I h. c.

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- 413-414. Alternating Current Apparatus. The theory, operation, and analysis of transformers, alternators, synchronous motors, synchronous converters, polyphase induction motors, single-phase motors, and motor controls. Prereq.: Engineering 311 and 311L, 411 and 411L.
- 413L-414L. Alternating Current Apparatus Laboratory. Three hours a week; taken concurrently with Engineering 413-414. Fee: \$10.00 each semester. I+I h. c.
- 415. Electronic Circuit Elements. A study of the theory of high vacuum, gaseous, thermionic, and photoelectric tubes. Contingent field theory, electron ballistics and optics, emission at metallic surfaces, gaseous conduction, construction of electronic circuit elements, parametric circuit equations of tubes, characteristic curves, rating and efficiency, basic utilization circuits. Prereq.: Engineering 311-312 and 311L-312L. 3 h. c.

415L. Electronic Circuit Elements Laboratory. Three hours a week;

taken concurrently with Engineering 415. Fee: \$10.00.

- 416. Electronic Applications. 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.
- 4161. Electronic Applications Laboratory. Three hours a week: taken concurrently with Engineering 416. Fee: \$10.00.
- 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.
- 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 311.
- 419. Industrial Applications. The design, construction, and operating characteristics of alternating-and direct-current controllers and control devices for various types of motors. Plugging; dynamic braking; motor acceleration problems; manual and automatic starters. Prereq.: Engineering 411 and 411L: prerequisite or concurrent: Engineering 414 and 414L.
- 420. Industrial Electronics. The application of electronic devices to industrial controls. Regulators for speed, voltage, temperature, welding: induction heating: rectifiers: servomechanisms: dynamics of closed-loop and other systems. Prereq.: Engineering 411, 411L, 416, and 416L. 3 h. c.
- 430. Concrete Construction. The properties of concrete; the design and construction of concrete walls, slabs, girders, beams, and columns. Prereq.: Engineering 330.
- 430L. Concrete Construction Laboratory. Laboratory demonstrations of mixing concrete. measuring of slump, compressive and tensile strengths and modulus of Elasticity. Design projects on chosen topics. Must be taken concurrently with Engineering 430. Fee: \$10.00. I h. c.
- 432. Water Supply. Public and industrial water supply systems and methods of purification: construction and operation of distribution systems. Prereq.: Chemistry 109-110 or 111-112. Prerequisite or concurrent, Engineering 328.
- 433. Indeterminate Structures. Analysis of statically indeterminate structures: elastic arches, closed rings, rigid frames, continuous beams. Prereq.: Engineering 330, 331, and 430.

433L. Indeterminate Structures Laboratory. Demonstrations of use of SR-4 gages on continuous beams, frames and trusses to find stress. Design and analysis projects on chosen topics. Must be taken concurrently with Engineering 433.

1 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 325.

- 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: \$10.00.
- 435. Sewage Systems Design. Design of sewers, storm drains, and appurtenances: principles of design and operation of sewage treatment and waste disposal plants. Prereq.: Engineering 333.
- 437. Seminar. Reports on library studies and research on special topics selected with the advice and approval of the faculty. Review of recent pulications in the field of Civil Engineering. Discussions of Civil Engineering problems. Prereq.: Engineering 326 and 328.
- 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.
- 440. Advanced Concrete Design. Analysis of continuous concrete structures 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. Prerequisite or concurrent. Engineering 326 and Mathematics 309.
- 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 lecture and four hours of laboratory a week. Prereq.: Engineering 351, 352, and 351L, 352L. Fee: \$10.00 each semester.
- 455. Iron and Steel 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.
- 456. Nonferrous 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. 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. Two hours of lecture and two hours of laboratory work per week. Prereq.: Engineering 351, 351L, 352, and 352L.

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- 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, 367.
- 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.
- 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.
- 470. Advanced Machine Design. Welded and riveted connections. lubrication, ball and journal bearings, and gears. Prereq.: Engineering 371.
- 470L. Advanced Machine Design Laboratory. One or two practical design problems involving all of the material covered in Engineering 371 and 470. Taken concurrently with Engineering 470.
- 471. Refrigeration and Air Conditioning. Application of thermodynamic theory to refrigeration and air conditioning in relation to heating and ventilating problems and materials processing. Humidification and dehumidification. and air tempering systems in relation to human habitation and processes. Prereq.: Engineering 317 and 343.
- 472. Principles of Nuclear Reactors. Basic engineering science of the nuclear fission process applied to the generation of power. The course is to serve 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 310.
- 475. Internal Combustion Engines. Thermodynamic analysis of internal combustion engine cycles: fuels: combustion: carburetion. cooling. lubrication. and effect of supercharging on engine performance. Prereq.: Engineering 317 and 343.
- 475L. Internal Combustion Engines Laboratory. Two hours a week: taken concurrently with Engineering 475. Fee: \$10.00. I h. c.
- 476. Mechanical Vibrations. The causes, effects, and control of vibration in machine elements and foundations. Vibrations with and without damping. Vibration of systems with several degrees of freedom, Vibration isolation and absorption, with the application of modern methods in this field. Prereq.: Mathematics 310. Engineering 325 and 327. 3 h. c.
- 477. Fluid Mechanics. A more rigorous study than in Engineering 328. New subjects include flow nets, unsteady flow, the theory of the boundary layer, and lift and propulsion. Prereq.: Mathematics 310 and Engineering 328.
- 478. Heat Transfer. The fundamentals of heat transfer by conduction, convection, and radiation, followed by the investment of combinations of these modes of energy transfer. Prereq.: Mathematics 310 and Engineering 317.
- 480. Unit Design. The development and study of apparatus to carry out laboratory-proved reactions. Prereq.: junior or senior standing, with major in chemical engineering, chemistry, or physics, and permission of the head of the Department of Chemical Engineering. Fee: \$10.00. Identical with Chemistry 430.

 Hours and credit to be arranged.

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GENERAL INFORMATION

FACULTY

Samuel P. Badal	Music Literature and History, Voice Violoncello, String Bass, Piano Composition, Organ
	Vocal Methods
Norman Chapman	Piano
Panny Cleve	Voice and Opera Workshop
Nallia C Duba bastal	Tuba Theory, Ear-training Woodwind Instruments and Methods.
Mich C Dollivas Is	Woodwind Instruments and Mathods
Mark C. Domver, Jr.	Conducting Chair
Mary F. Fankhauser	Conducting, Choir Piano
Lois M. Honkins	French Horn
TT T	CI
John Krueger	Trombone
William R. Mathews	Trombone Madrigals, Sacred Music. Form and Analysis
Jean Meranto	Piano Music Education, Voice Organ, Sacred Music
Leah M. McIlroy	Music Education, Voice
Chester E. Morsch	Organ, Sacred Music
Alvin Myerovich	Violin, Viola, String Methods, Orchestra
	Voice Voice
Jay R. Raven	Oboe, Bassoon, Flute, Woodwind Ensemble
Elmer P. White	Band. Trumpet Percussion Instruments and Methods
Myron J. Wisler	Percussion Instruments and Methods
Robert Witt	Theory, Piano

ORGANIZATION AND PURPOSES

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. Dana School of Music is a member of the National Association of Schools of Music.

The school offers instruction for both professional and avocational needs. Moreover, since a program of general education is available in the College of Arts and Sciences, the student who has studied voice or an instrument while in high school may continue his music study, whatever his purpose, without overlooking the broader aspects of his education.

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. A preparatory department is maintained for pre-college students.

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 close co-operation is maintained between the University and the public schools of Youngstown and vicinity.

Credit in music is allowed in varying amounts toward the other degrees granted by Youngstown University.

FACILITIES

Buildings

The school's main building, at 616 Wick Avenue, contains the administrative offices, thirteen studios, four clossrooms, 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 the instrumental and choral libraries.

Equipment

Equipment includes fifteen grand pianos and twenty-seven uprights, three practice organs, and band and orchestra instruments. The famous 4-manual Moeller organ of the Trinity Methodist Church is available for teaching, and for practice by seniors 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 all departments 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 Dana School of Music. See the section on Scholarships and Loans.

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.

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ACTIVITIES

Musical Activities

Dana School of Music supplements the concert activities of the Monday Musical Club and the Youngstown Symphony Society with a series of lecture-recitals by outstanding 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, which are usually given in Strouss Memorial Auditorium, there are informal student recitals every Tuesday and Thursday at 11 a.m. in Central Hall. Attendance at recitals is obligatory for music students. Additional hours of credit in the applied field may be required for non-attendance.

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 Laboratory Band provides additional training for those who need it to qualify for the Concert Band and enables music education students to gain practical experience on their minor instruments.

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 Laboratory Orchestra affords further training for those who need it to qualify for the Symphony Orchestra and enables music education students to gain practical experience in performance on their minor instruments.

The A Cappella Choir offers, to all University students who can qualify, the opportunity to participate in unaccompanied singing of sacred and secular compositions from all periods of musical history, including the contemporary.

The Madrigal Singers are a group of sixteen selected voices 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 String Quartet, String Ensemble, and the Bruss and Woodwind Ensembles are likewise 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.

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Professional Fraternities

Alpha Nu Chapter of Sigma Alpha Iota, an honorary professional music sorority, and Delta Eta Chapter of Phi Mu Alpha Sinfonia, an honorary professional music fraternity for men, are chartered to Dana School of Music.

Other Student Activities

Students of the School of Music may take part in other Youngstown University activities on an equal basis with other students. These activities are described in the section on Student Activities. The Youngstown Chapter of Composers, Authors, and Artists of America is also open to University students.

The Alumni Association

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.

TUITION AND FEES

All tuition charges and fees are explained in detail in the general section on Fees and Expenses.

Full-Time Students†

The rates for full-time music students are stated and explained on page 52. The semester charge of \$312.00* includes tuition fees for both applied music and other courses to the extent stated, as well as regular fees for the University yearbook, other student activities, library use, health service, guidance, athletics, social and recreational facilities, the University development fee, and music lectures and recitals by visiting artists. In applied music it provides for two half-hour private lessons a week in the major subject, one half-hour private lesson a week in the minor subject, and use of practice rooms. To this sum are added any course-fees or other special fees applicable during a particular semester.

Additional applied music lessons, or any courses in excess of a total of 15 semester hours, are payable at the pertinent rates as stated on page 52.

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 Rates for Applied Music," and, for any other course he takes, at the ordinary rates for part-time students.

Special Students in Applied Music

A student from another unit of the University who studies applied music pays at the rates listed below under "Tuition Rates for Applied

exclusive of music ensemble courses.

*This charge is \$335.00 if the student takes one of his applied music lessons each week from an artist-teacher, and \$353.00 if he takes two such lessons a week.

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

Music."These charges are in addition to his regular tuition and are payable under the same conditions as all other University fees. (Such a student must first see the dean of the School of Music for assignment to a teacher.)

Private Students in Applied Music

A student from outside the University studying with any of the School of Music faculty pays at the rates listed below under "Tuition Rates for Applied Music." The following policies prevail:

Arrangements for lessons and for assignment to teachers must first be made at the office of the dean of 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 pages 55-56). 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 his previous lessons have been paid for.

No private student may enroll for less than a full term. Lessons may be taken on a weekly basis only. 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.

Preparatory Department

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sic ut na Music instruction in applied music (piano, voice, band, and orchestral instruments) is offered to pre-college students from 7 to 18 years of age. It is designed to prepare the student for entrance to the regular courses in Dana School of Music. From the beginning, the child's ability is made the foundation upon which all later work is built. Harmony, ear-training, rhythms, sight reading, transposition, and biography are included in the class work, in which each child has a share. Public recitals are held frequently. Lessons and class instruction in the Preparatory Department are offered after school and on Saturdays. All private lesson fees are payable as stated above under "Private Students in Applied Music."

Tuition Rates for Applied Music

The following rates apply to all students in applied music except fulltime music students, whose special Applied Music Charge is stated and explained on page 52.

For one semester of seventeen weeks:	One half- haur lesson a week	Two half- hour lessons a week
Regular instruction rate	\$54.00	\$108.00
Artist-teacher rates: For part-time or special University students	63.00 90.00	126.00 180.00 54.00

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., is responsible for the care and safe-keeping of the instrument, and must return it 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. (This does not apply to organized University ensembles.)
- 5. Theory Placement Examination Fee. A fee of \$5.00 is charged any student who fails to take the placement examination in the theory of music at the appointed time, usually in the week preceding the beginning of fall classes.

ADMISSION

Application and Examinations

An applicant for admission to Dana School of Music must satisfy the general requirements for admission to the University (pages 35-37). His application for admission to the School of music should be submitted to the dean of the School of Music (from whose office application forms are obtainable) by August 1 for the fall semester or January 1 for the spring semester.

Every freshman takes a placement examination to determine his proficiency in applied music. These examinations are usually given one week before the opening of a semester.

A placement examination in music theory will be given to all entering freshmen to determine whether they must supplement Music 103-104, Music Theory I, with Music 101, Basic Music.

The entering student must give considerable thought to the branch of applied music in which he will specialize, as a change of curriculums 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."

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the for 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 additional 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. This ability may be determined in part by placement tests. If he wishes to place the major emphasis on composition, he must present original compositions as evidence of creative talent.

Admission from Other Institutions

The general policy is stated on page 36. Advanced standing in applied music and in aural and written theory is granted tentatively and must be validated by examinations or by completion of more advanced courses in Dana School of Music.

Special Students

The general policy is stated on page 36. 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 for technical reasons 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 pages 38-39. These courses are normally taken in high school; those lacking may 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 collegelevel music courses.

2. The courses and other requirements to be completed in These comprise:

a. The general requirements for graduation from the University, explained on pages 37 and 39-41 and recapitulated below.

b. Requirements peculiar to the Bachelor of Music degree, which are stated below.

c. Requirements for the major and minor fields and for any other

purposes, such as teaching certification.

Most curriculums leading to this degree require from 138 to 146 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 on page 42.

1. Pre-college

a. Academic

Subject English	High school units
A foreign language [†] United States history and civics Mathematics	
Science Others	1 8

b. Musical

Proficiency adequate for undertaking college-level music courses. 2. In the University

a. General

Other than courses (see pages]	37, 39-40):
Upper Division status (including co	empletion of any specified preparator
courses lacking at time of entr.	ance),
Major and minor requirements.	Residence requirement.
Course-level requirements.	Application for graduation.
Grade-average requirement.	

Basic courses:	Credit hours
Communication 105-106-107, Basic Course I-II-III	9
Health and Physical Education 107 and 108. Health Education	I and II 11/2
Health and Physical Education activity courses	2
Orientation 100, Freshman Orientation	1/2

Area courses: Religion: a course in the Department of Philosophy and Religion, or Humanities 401 or 402

Science: see the degree requirements below.

Social Studies:

Social Science 101 and 102, Introduction	to the Social Sciences6
History 201 and 202, The United States	6

28

^{*}The one exception is the five-year combination curriculum for the vocal and instrumental music education major, requiring 165 semester hours.

**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 the most advantageous for the student intending to major in voice.

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b. For the Degree

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Psychology 201, General Psychology	
Professional in purpose:	WINE :
Music 103-104 Theory I	
WHIST ZUASZIII Theorem II	
Music 301-302 Sight Singles 1 E	
Music 305-306, History of Music Music 307-308, Survey of Music Literature	
Music 307-308, Survey of Music Literature Music 319-320, Conducting	-
Music 319-320, Conducting Music 335-336, Counterpoint	
Music ensembles	
Physics 208, Sound (counted above as science)	_1:

The general and degree course-requirements total 81 semester hours.

c. Major, Minor, and Other Course-Requirements

A student must have grades of C or better in all courses taken in the major and minor fields. Courses in which the student receives a D or F must be repeated. For details, see the complete year-by-year curriculums a few pages further on.

For Two Majors, in Music and in Music Education

A student wishing to complete a major in an instrument or in voice, theory, composition, or sacred music, and also a major in music education, may do so by satisfying all the requirements of (a) one of the first four curriculums given below, and (b) one of the music education curriculums. Such a combined program of study may be arranged in consultation with the dean of 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 Dana School of Music. The rest is done in the College of Arts and Sciences, and the other requirements for the degree will be found, accordingly, on pages 59-61.

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:

*Course 203-204 in voice or an instrument	4	hours
**Music 103-104, Theory I	8	hours
**Music 103-104, 1 neory 1	. 8	hours
Music 203-204, Theory II	4	hours
Music 305-306. History of Music Music 307-308. Survey of Music Literature	4	hours
Music 307-308, Survey of Music Literature	4	hours
Music 327-328, Form and Analysis	3	hours
Music 327-328, Portil and Allarysis Music 335, Counterpoint I, or 336, Counterpoint II	4	hours
Music 427-428, Symphonic Literature		hours
Music Ensemble		hours
†Physics 101, Fundamentals of Physics (first half)		hours
†Physics 208, Sound		

Curriculums

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.

A 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.

For the Degree of Bachelor of Music with Major in Instrument, Voice, Theory, Composition, or Sacred Music

Instrument Major

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.

desirable as the minor.		Second Year Hrs.
First Year	Hrs.	
Major instrument 101-102 Minor instrument 105-106 Mus. 103-104 Theory I Music ensemble Comm. 105-106 Basic Course I- Soc. Sci. 101 & 102 Introductic to the Social Sciences I & H. & P. E. 107 & 108 Health I & H H. & P. E. activity courses Orientation 100	2 8 2 II 6 9n HI 6 Ed. 11/2	Major instrument 201-202 .6 Minor instrument 205-206 .2 Mus. 203-204 Theory II .8 Music ensemble .2 Comm. 107 Basic Course III .3 Hist. 201 & 202 The United States .6 Physics 101 Fundamentals of Physics 3 .6 Physics 208 Sound .3 Psych. 201 General Psychology .3 H. & P. E. activity courses .1 37
Third Year Major instrument 301-302 Minor instrument 305-306 Mus. 219-220. Conducting Mus. 301-302 Sight Singing at Ear-Training I Mus. 305-306 History of Music Mus. 307-308 Survey of Music Literature Mus. 327-328 Form and Analys Mus. 335-336 Counterpoint I Music ensemble Elective	Hrs 6 2	Fourth Year Major instrument 401-402 6 Minor instrument 405-406 2 Mus. 333-334 Instrumental Conducting and Score-Reading 2 Mus. 401-402 Sight Singing and Ear-Training II 2 Mus. 409-410 Orchestration and Band arranging 4 Mus. 421-422 Composition I 4 Mus. 421-428 Symphonic Literature 4 Music ensemble 2 Recital Philosophy and Religion elective, or Humanities 401 or 402 3 Elective 333

^{*}If the student demonstrates that he has already attained this level of proficiency, he may substitute other music courses, according to his choice and him

qualifications.

**Prerequisite: grade of C or better in Music 101-102, or passing grade in placement examination in theory.

†By taking Physics 101-102 and 101L-102L (totaling 8 credit hours) the student would also meet the laboratory science requirement for the Bachelor of Arta degree. Physics 208 would then fulfill the remaining three hours of the science requirements. requirement.

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.

This curriculum appears to total 144 credit hours instead of 138 because it lists 18 hours in foreign languages. Actually 12 hours are enough 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, but receives no course-credit for the first 6 unless he has two high school units of some other foreign language, in which case he should consult the dean of the music school at the time he enters.

Hrs.	Second Year	Hrs.	First Year
2 8 2 2 3 French 6 Physics 3 3 2 3 3	Major: Voice 201-202 Minor: Piano 205-206 Mus. 203-204 Theory II Music ensemble Comm. 107 Basic Course III *French 101-102 Elementary F Physics 101 Fundamentals of P Pbysics 208 Sound Psych. 201 General Psychology H. & P. E. activity courses		Major: Voice 101-102 Minor: Piano 105-106 Mus. 103-104 Theory I Music ensemble Comm. 105-106 Basic Course Italian 101-102 Elementary H. & P. E. 107 & 108 Heal: 1 & H H. & P. E. activity courses Orientation 100
6 2 2 4 ysis 4 1 6 nd 2 2 2 1	Fourth Year Major: Voice 401-402 Minor: Piano 405-406 Mus. 305-306 History of Music Mus. 327-328 Form and Analy Mus. 331-332 Choral Conductin Mus. 335-336 Counterpoint I & Mus. 401-402 Sight Singing ar Ear-Training II Music ensemble Recital		Third Year Major: Voice: 301-302 Minor: Piano 305-306 Mus. 219-220 Conducting Mus. 301-302 Sight Singing Ear-Training I Mus. 307-308 Survey of Mu Literature Music ensemble "German 101-102 Elementary Hist. 201 & 202 The United
3	Philosophy and Religion electi or Humanities 401 or 402 Electives		Soc. Sci. 101 & 102 Introduc to the Social Sciences I &

Composition Major

First Year	Hre	Second Year Hrs.
Major instrument or Voice Piano 105-106 (if not major) Minor—Strings Mina, 103-104 Theory I Mus. 113-114 Composition A Music ensemble Comm. 105-106 Basic Course I-1 Soc. Sci. 101 & 102 Introductio the Social Sciences I & II II. & P. E. 107 & 108 Health F I & II II. & P. E. activity courses Orientation 100	4 2 2 8 4 4 2 6 6 m to 6 6 6	Major instrument or Voice

^{*}May be omitted if the student has two high school units in the language.

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Third Year	Major instr Piano 405-4 Minor—Per Mus. 307-30 Literatur Mus. 331-33 and Scor Mus. 333-32 ing & S. Mus. 401-4 Ear-Trair Mus. 409-4 Arrangin Mus. 413-4 Mus. 427-44 Music ense
	Music ense

Fourth Year	
Major instrument or Voice	4
Piano 405-406 (if not major)	2
D	2
Mus. 307-308 Survey of Music	
Literature	4
Mus. 331-332 Choral Conducting	
and Score-Reading	2
Mus. 333-334 Instrumental Conduct	
Mus. 333-334 Instrumental Conduct	2
ing & Score-Reading	
Mus. 401-402 Sight Singing and	2
Ear-Training II	
Mus. 409-410 Orchestration & Bane	
Arranging	
M. 113 414 Composition D	**
Mus. 427-428 Symphonic Literature	4
Music ensemble	4
Recital	1
Dhilosophy and Religion elective, o	F
Humanities 401 or 402	3
	0.0

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.

First Year Hrs. Major: Organ or Voice 101-102 6 Minor: Organ, Piano or Voice 105-106 2 Mus. 103-104 Theory I 8 Music ensemble 2 Comm. 105-106 Basic Course II 6 Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II 6 H. & P. E. 107 & 108 Health Ed. I & II H. & P. E. activity courses 1 Orientation 100 3 33	Second Year Hrs.
Third Year Hrs. Major: Organ or Voice 301-3026 Minor: Organ, Piano, or Voice 305-3062 Mus. 219-220 Conducting2 Mus. 301-302 Sight Singing and Ear-Training I2 Mus. 305-306 History of Music4 Mus. 307-308 Survey of Music4 Mus. 335-336 Counterpoint I-II6 Mus. 361 Hymnology2 Mus. 362 Gregorian Chant2 Mus. 363-864 Junior and Senior4 Music ensemble2 Music ensemble36	Fourth Year Major: Organ or Voice 401-402 Minor: Organ, Piano, or Voice 405-406 Mus. 327-328 Form and Analysis Mus. 331-332 Choral Conducting Mus. 461-402 Sight Singing and Ear-Training II Mus. 429 Canon and Fugue Mus. 461 History of Sacred Music Mus. 463-464 Choral Literature Music ensemble Recital Philosophy and Religion elective, or Humanities 401 or 402 *Elective *Music 465 required of organ major

For the Degree of Bachelor of Music with Major in Music Education

Some of the following curriculums lead to the special certificate to teach music in the public schools of Ohio. 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 bear in mind 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). For required applied-music minor courses, see the curriculums below.

All music education majors are expected to demonstrate piano facility as follows:

- 1. Ability to sight-read songs of the type found in school song books.
- 2. Ability to harmonize at sight, improvise simple piano accompaniments, and transpose songs and harmonizations to other keys.
- 3. Ability to sight-read fairly fluently simple accompaniments for instrument or voice and simple piano compositions of the type used for school rhythmics activities.

The music education student majoring in a string, wind, or percussion instrument must take the functional piano courses (Piano 111-112 and 211-212).

In order to foster a broad understanding of the total music program, it is required that all music education majors participate in music ensembles to the extent indicated:

Marching Band 11/2	semester	hours
Laboratory Ensemble 2	semester	hours
Choir or Madrigals	semester	hours
Other ensembles (large or small) 6	semester	hours

Wind instrument and percussion majors should include some work in both band and orchestra.

Music Education Major: Vocal

For certification purposes this curriculum is called "vocal" regardless of whether the applied major is in voice or piano. This curriculum does not meet the present requirements for the special Provisional Certificate in Ohio.

First Year	Hrs.	Second Year Hrs.
Applied major: Voice or		Applied major: Voice or
Piano 103-104		Piano 203-204
Applied minor: Piano or		Applied minor: Piano or
Voice 105-106		Voice 205-206
Mus. 103-104 Theory I		Mus. 203-204 Theory II
Music ensemble		Mus. 219-220 Conducting
Comm. 105-106 Basic Course I-I	I6	Mus. 311-312 Class Voice Methods 2
Educ. 191 Introduction to Educa	ation 3	Music ensemble
Soc. Sci. 101 & 102 Introducti	on	Comm. 107 Basic Course III 3
to the Social Sciences I & II	16	Physics 101 Fundamentals of Physics 3
H. & P. E. 107 & 108 Health I	Ed.	Physics 208 Sound
I & II	11/2	Psych, 201 General Psychology 3
H. & P. E. activity courses	1	Psych. 202 Psychology of Education 3
Orientation 100		H. & P. E. activity courses1
	25	37

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Hrs. . . 6 . . 2 . . . 2 . . . 2 . . . 2 . . . 2 . . . 2 2 2

33 33 jors.

Third Year Hrs.	Fourth Year Hrs.
Applied major: Voice or Piano 303-304 4 Applied minor: Piano or Voice 305-306 2 Mus. 301-302 Sight Singing and Ear-Training I 2 Mus. 305-306 History of Music 4 Mus. 307-308 Survey of Music 4 Mus. 315-316 Music in the First Six Grades 4 Mus. 321-332 Choral Conducting 2 Music ensemble 3 Educ. 301 Principles of Teaching 3 Educ. 304 Classroom Management 3 Hist. 201 & 202 The United States 6	Applied major: Voice or Piano 403-404 Applied minor: Piano or Voice 405-406 Mus. 335-336 Counterpoint I-II Mus. 409-410 Orchestration and Band Arranging Mus. 411-412 Junior and Senior High School Methods Music ensemble Recital Educ. 404 Student Teaching Philosophy and Religion elective, or Humanities 401 or 402

Music Education Major: Instrumental

The minor courses in applied music are stated below the curriculum. This curriculum does not meet the present requirements for the special Provisional Certificate in Ohio.

First Year Hrs.	Second Year Hrs.
Applied major 103-104	Applied major 203-204 Applied minor Mus. 203-204 Theory II Mus. 219-220 Cenducting Mus. 225-226 Woodwind Methods Music ensemble Comm. 107 Basic Course III Physics 101 Fundamentals of Physics Physics 208 Sound Psych. 201 General Psychology Psych. 202 Psychology of Education H. & P. E. activity courses
Third Year Hrs.	Fourth Year Hrs
Applied major 303-304 4 Applied minors 3 Mus. 301-302 Sight Singing and Ear-Training 1 2 Mus. 305-306 History of Music 4 Mus. 307-308 Survey of Music Literature 4 Mus. 318 Percussion Methods 1 Mus. 329-330 Brass Methods 2 Mus. 333-334 Instrumental Conducting 2 Music ensemble 3 Educ. 304 Classroom Management 3 Hist. 201 & 202 The United States 6	Applied major 403-404 Applied minors Mus. 325-326 String Methods Mus. 335-336 Counterpoint I-II Mus. 409-410 Orchestration and Band Arranging Mus. 417 Instrumental Problems Mus. 419 Band Organization Music ensemble Recital Educ. 404 Student Teaching Philosophy and Religion elective, or Humanities 401 or 402

The minor applied-music courses for the curriculum above must total at least 10 semester hours, as follows:

- 1. If the major instrument is piano, the minors must consist of 1 semester hour each in clarinet, trumpet, violin, cello, percussion, and voice, and 4 semester hours in any instruments or voice.
- 2. If the major instrument is a string, wind, or percussion instrument, the minors must be 4 semester bours of functional piano and I semester hour each in voice, clarinet, trumpet, violin, cello, and percussion. If one of the latter five instruments is the major instrument, another semester hour

First Year

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Second Year

must be completed, in any instrument other than the major one, or in voice, in order to have a total of 10 semester hours in minors.

These requirements can be altered if the student has already achieved any of the necessary proficiencies.

Music Education Major: General

This curriculum meets the requirements for the special Provisional Certificate in Ohio.

Hrs.

Applied major 203-204 Applied minor Mus. 203-204 Theory II Mus. 219-220 Conducting Mus. 225-226 Woodwind Methods Mus. 213-212 Class Voice Methods Music ensemble Comm. 107 Basic Course III Physics 101 Fundamentals of Physics Physics 208 Sound Psych. 201 General Psychology Psych. 202 Psychology of Education H. & P. E. activity courses	Applied major 103-104
Fourth Year Hrs.	Third Year Hrs.
Applied major 403-404	Applied major 303-304
Literature	Far-Training I
Arranging	Six Grades
High School Methods 4 Mus. 417 Instrumental Problems 2	Mus. 329-330 Brass Methods 2 Mus. 331-332 Choral Conducting . 2
Mus. 419 Band Organization 2 Music ensemble	Mus. 333-334 Instrumental Conducting 2 Music ensemble
Recital	Educ, 301 Principles of Teaching3
Educ. 404 Student Teaching	Filat. 201 & 202 The United States 6
40	40

In order to complete the above curriculum in four years, the student will need to attend summer school in addition to the regular sessions.

Music Education Major: Vocal and Instrumental

A five-year curriculum; it may be completed in four years and five summers by starting with a summer session. The minor applied-music courses are the same as for the instrumental curriculum above.

First Year Hrs.	Second Year Hrs.
Applied major 103-104 4 Applied minor 105-106 2 Mus. 103-104 Theory I 8 Music ensemble 3 Comm. 105-106 Basic Course I-II 6 Educ. 101 Introduction to Education 3 Soc. Sci. 101 & 102 Introduction to the Social Sciences I & II 6 H. & P. E. 107 & 108 Health Ed. I & II H. & P. E. activity courses 1 Orientation 100 1½	Applied major 203-204 4 Applied minor 205-206 2 2 Mus. 203-204 Theory II 8 Mus. 225-226 Woodwind Methods 2 Music ensemble 3 Comm. 107 Basic Course III 3 Physics 101 Fundamentals of Physics 3 Physics 208 Sound 3 Psych. 201 General Psychology 3 Psych. 202 Psychology of Education 3 II. & P. E. activity courses 1

35

Third Year Hrs.	Fourth Year Hrs.
Applied major 303-304 4 Applied minor 2 Mus. 219-220 Conducting 2 Mus. 301-302 Sight Singing and Ear-Training I 2 Mus. 305-306 History of Music 4 Mus. 307-308 Survey of Music Literature 4 Mus. 311-312 Class Voice Methods 2 Mus. 315-316 Music in the First Six Grades 4 Mus. 318 Percussion Methods 1 Music ensemble 2	Applied major 403-404 4 Applied minor 2 Mus. 323-326 String Methods 2 Mus. 329-330 Brass Methods 2 Mus. 331-332 Choral Conducting 2 Mus. 401-402 Sight Singing and Ear-Training II 2 Mus. 409-410 Orchestration and Band Arranging 4 Mus. 411-412 Junior and Senior High School Methods 4 Music ensemble 2 Recital 1
Hist. 201 & 202 The United States 6	Educ. 301 Principles of Teaching3 Educ. 304 Classroom Management3

Fifth Year	Hrs.
Applied minor 105-106	2
Applied minor	2
Mus. 333-334 Instrumental	
Conducting	2
Mus. 335-336 Counterpoint 1-11	6
Mus. 417 Instrumental Problems	2
Mus. 419 Band Organization	
Music ensemble	2
Educ. 404 Student Teaching	6
Philosophy and Religion elective,	
or Humanities 401 or 402	3
Electives	
	99
	9.0

COURSES OF INSTRUCTION*

Applied Music

Students desiring credit must enroll for not less than one semester.

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.

Instruction is in two half-hour lessons a week in major courses, and in one half-hour lesson a week in minor courses.

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 repettory.

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 instructor.

As far as teaching staff and practice rooms are available, enrollments in applied music will be accepted in the following order:

^{*}It is important that the student familiarize himself with the course-numbering system and its significance. It is explained in the College of Arts and Sciences section, on page 63.

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1. Full-time music majors

2. Other students in the University

3. Private students

A student's choice of instructor will be respected as far as possible, but final assignment rests with the dean of the School of Music.

Ensembles

There is no tuition charge for any ensemble credit. 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, on the approval of the dean of the School of Music.

A Cappella Choir. Open to any University student who can qualify.

1 h. c. each semester

Concert Band. Open to any student in the University who can qualify. $\frac{1}{2}$ or l h. c. each semester

Laboratory Band. Designed to give music education students practical experience in performance on their minor instruments and acquaint them with materials suitable for use in public school teaching, and to provide additional training for any students who need it to qualify for the Concert Band or the Marching Band.

1/2 h. c. each semester.

Laboratory Orchestra. Designed to give music education students practical experience in performance on their minor instruments and acquaint them with material suitable for use in public school teaching, and to provide additional training for any students who need it to qualify for the Symphony Orchestra.

Marching Band. Open to any University student who can play an instrument. Functions only during the football season. Three hours a week. One hour of Marching Band credit may be applied toward the health and physical education activity requirement. ½ h. c. each semester.

Marching Band Workshop. Lectures, demonstrations and practice in precision drill, block formation, street parade and phalanx drill. Rehearsal techniques, discipline and instrumentation will be studied. Offered only in the summer session.

Opera Workshop. Study of selected masterworks. Assignment and preparation of roles both musically and dramatically costuming, preparation of scenery, and selection, organization, and training of chorus and orchestra, entailing ten to twelve hours a week of preparation and culminating in public performance. Open to all University students.

I h. c. each semester.

Sumphony Orchestra. Open to any student in the University who can qualify.

1 h. c. each semester.

Percussion Ensemble. Various procedures involved in comprehending and executing advanced solo and orchestral literature indigenous to the percussionist's art. The course also will provide an organization whose prime function will be that of performing more complex percussion literature than that which is usually encountered in the music major's normal standard repertoire. Prereq.: Upper Division status. $\frac{1}{2}$ h. c. each semester.

String Ensemble. Open to any University student who can qualify, 1/2 h. c. each semester.

Woodwind Ensemble. Limited to students of the School of Music. 1/2 h. c. each semester.

Brass Ensemble. Limited to students of the School of Music.

1/2 h. c. each semester.

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String Quartet. Limited to selected students of the School of Music.

1/2 h. c. each semester.

Madrigal Singers. Limited to selected students of the School of Music.

1/2 h. c. each semester.

Note: Wind instrument majors should have both band and orchestra ensemble credits.

Piano

All piano majors are required to play for at least one vocal, wind, or string student each semester in recital and in lessons. A grade will be submitted to the head of the piano department indicating the degree of proficiency achieved in accompanying song, chamber and sonata literature. This grade will be given by the studio teacher under whose guidance the student works and will be an integral part of the student's semester grade. Punctuality, regular attendance and the degree of co-operation in a joint musical effort will be criteria for the studio grade.

100. For those who do not qualify for Piano 101 or 103. This course may be repeated. I h. c.

Major Courses

101-102. Studies such as Czerny. Op. 299: Loeschorn, Op. 66; Phillip, Studies: Bach. Two- and Three-Part Inventions: Mozart and Haydn sonatas: earlier Beethoven sonatas: romantic and modern compositions. Chords, major and minor scales, arpeggios, octaves.

201-202. Cramer. Studies: Czerny, Op. 704: Preyer, Kullak. or other octave studies. Bach: Three-Part Inventions, French and English Suites. The Well-Tempered Clavichord: Beethoven sonatas of a more advanced grade: a Mendelssohn, Mozart, or Beethoven concerto in C major or C minor. Schumann. Andante and Variations for two pianos. Selected Chopin nocturnes. waltzes, mazurkas. polonaises: classic, romantic. and modern compositions.

301-302. Clementi, Gradus ad Parnassum. or Czerny. Op. 740. Bach: English Suite, The Well-Tempered Clavichord. Beethoven sonata, one of three in Op. 31 begun here and completed in 402. Chopin compositions. more advanced. One major concerto, completed in 402. Debussy and Rayel compositions.

401-402. Bach: one partita: advanced compositions such as toccatas, the Italian Concerto, and Chromatic Fantasy and Fugue. Beethoven sonata, advanced. Concerto completed. Romantic compositions such as Brahms rhapsodies. Chopin ballades, and Liszt rhapsodies. Compositions by standard American and foreign composers such as MacDowell. Debussy. Ravel. Rachmaninoff. Griffes, Ibert. Medtner, and others. The student prepares a recital program of serious content and difficulty, ranging from classic to modern music; also, a major piano concerto is prepared for performance with orchestra.

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 1	2	h.	€.
203-204.	See Piano	201-202.	2 1	2	h.	0
303-304.	See Piano	301 302.	2 1	2	h.	(
403-404.	See Piano	401-402.	2 1	,	11	C.

Minor Courses

105-106. Bilbro, First Melody Book; Burrows, The Adult Explorer; Three pieces from 53 Piano Solos. Chords, sight reading. Bach-Schaum. 1 + 1 h. c.

All major scales. Sight reading of part songs and duets. 205-206. Bach Carroll, Vol. 1; Hanon: Czerny-Germer, Vol. 1, Part I; Burgmüller, 1 + 1 h. c. Op. 100. Romantic and modern compositions.

305-306. Added technical work. All the minor scales. Bach-Carroll, Vol. II, or Bach-Foote, First Year; Czerney-Germer, Vol. I. Part II; Heller. Studies. Op. 47. Sonatinas by Clementi, Kuhlau, and others. Romantic and modern compositions. Arpeggios: tonic. dominant seventh, diminished seventh. Major and minor triads played in three positions. 1 + 1 h. c. Sight reading, transposition.

405-406. For those who can qualify.

1 + 1 h. c.

Functional Piano Courses (for music education instrumental majors)

Designed to prepare the student to sight-read simple accompaniments, harmonize single melodies, and transpose material of the 1+1h.c.sort found in school song books. 1 + 1 h. c.

211-212. Continuation of Piano 111-112.

Organ

Intended for those who do not qualify for Organ 101 or 103. 100. Ih. c. The course may be repeated.

Major Courses

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 Il from Sei Gegrusset (Book V, ed. Peters); short preludes and fugues: Canzona Fugue in B minor (Corelli); Prelude and Fugue in E Minor (Lesser, 3 + 3 h. c. ed. Schirmer). Also modern compositions.

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 3 + 3 h. c. by American, French, English, or German composers.

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 Fuque in G Major. Franck: Cantabile; Prelude, Fuque, and Variation: Pastorale: Piece Héroique. Mendelssohn: I hird Sonata. Mod-3 + 3 h. c. ern compositions.

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-Bennett: Sonata in G. shorter compositions suitable for Ducasse: Pastorale. 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.

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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 Cou	rses
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.
405-406.	See Piano 405-406.	1 + 1 h. c.

103-104. See Organ 101-102.

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. Classification of the voice, vocalizations for tone production, and simple songs in English and Italian classics. Songs from Volumes I and II of Italian Anthology (Schirmer edition): two easy oratorio and operatic arias. A selected list of songs by American composers. Prerequisite or concurrent: Italian 101-102.

201-202. Continuation of technical studies for the development of the individual voice. Additional songs from Volumes I and II, Italian Anthology. Additional songs in English; songs in French by Debussy, Faure, Lalo. Duparc: two operatic and oratorio arias. A selected list of songs by American composers. Prerequisite or concurrent: French 101-102. 3 + 3 h. c.

301-302. Advanced literature and technique. Songs in German by Schubert, Brahms, Wolf, Strauss: additional songs in French by Chausson. Saint-Saens. Debussy: Italian songs by Respighi, Donaudy, Sibella: two operatic and three oratorio arias: additional songs by American composers. Prerequisite or concurrent: German 101-102. 3+3h. c.

401-402. Advanced literature and technique. Additional songs from a selected list of twentieth-century French. German, Italian, Russian, English, and American composers. Six additional opera and oratorio arias. Preparation of the public recital and of one or more programs from the repertoire of the previous courses. 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	Voice	101	-102.		2	+	2	h.	c.
203-204.	See	Voice	201	1-202.		2	+	2	h.	c.
303-304.	See	Voice	301	-302.		2	+	2	h.	c.
403-404.	See	Voice	40 I	1-402.		2	+	2	h.	c.

Minor Courses

105-106. Classification of the voice; breath control; technical exercises and appropriate song material. Amount of repertoire decided by voice faculty. Open to students with no previous training. I+I h. c.

205-206. Advanced vocal technique and literature suited to the individual voice. Standard oratorio arias. Songs in foreign languages, at the discretion of the instructor. Amount of repertoire decided by voice faculty.

305-306.	For those who can qualify.	1 + 1 h, c
405-406.	For those who can qualify.	1 + 1 h. c.

Music

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"The Marriage of Figaro"

"Cosi Fan Tutti"

"Der Freischutz"





Violin

100. For those who do not qualify for Violin 101 or 103. The Course may be repeated. I $h.\ c.$

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 repretoire. 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+3h.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+3h. 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. I + Ih. 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.

305-306. Position studies continued. Maia Bang, Book IV. Schnbert 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. I+1 h. c.

405-406. Continued study of positions. Maia Bang, Book V. Studies by Mazas and Dont; beginning of Keutzer. Allegro Brillante by Tenhave, concerto by Hollander, sonatas by Handel. Scales in three octaves. I+I h. c.

Viola

100. For those who do not qualify for Viola 101 or 103. The course may be repeated.

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

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.

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	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. I+I h. c.

205-206. Development of left hand facility. Beginning of lower positions. Studies by Kayser. Scales in positions. Pieces in positions. I + I h.

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. I+Ih.c.

405-406. Higher positions. Mazas, Kreutzer. Pieces by Nardini, Sitt, and others. Scales in three octaves. $I+I\ h.\ c.$

Cello

100. Intended for those who do not qualify for Cello 101 or 103. This course may be repeated.

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.

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.

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. I+I h. c.

205-206. Schroeder, Studies. Scales. Klengel, Concerto in C Major; Marcello, Sonata in F Major. 1 + 1 h. c.

aior;

h. c.

3 + 3 h. c.

Ausic and Schroeder, Studies. Scales. Loeillet, Sonata in G Major; 305-306. Goltermann, Concerto No. 4. h. c. 405-406. For those who can qualify. s by String Bass h. c. 100. Bach. course may be repeated. h. c. Major Courses bove. ired. h. c. h. c. h. c. h. c. include sonatas by Eccles, Antoniotti, and D'Andrieu. ding first concerto. Senior recital. h. c. ower Major Courses for Music Education ıs. h. c. Schu-103-104. See String Bass 101-102. ecital 203-204. See String Bass 201-202. h. c. 303-304. dini. h. c. 105-106. Simandl, Method, Part I. Scales. 103. 205-206. Vivaldi, Intermezzo. h. c. 305-306. 405-406. For those who can qualify. and olter-Flute h. c. udies. 103. The course may be repeated. 0. 3; h. c. Major Courses ncert inor. h. c. Piatti, 0. 2, h. c. Duos Mélodiques; Bach, Sonata No. 2; Rogers, Solitoquy; Gluck, scene from Orpheus; Briccialdi, II Vento. bove. 301-302. Studies and solos such as Schindler, Bach Studies; Anderson, ired. Etudes, Op. 30, Op. 15: Kuhlau, Duets, Op. 102: orchestral studies: Bach, B. Minor Suite; Boccherini. Concerto in D. Major, Op. 27; Mozart, conh. c. h. c. 401-402. Jeanjean, 16 Studies in the Modern Style; Moyse, 48 Virh. c. tuoso Studies; orchestral studies: special work on piccolo; Bach, Sonatas No. h. c. I and No. 4 in A Minor Unaccompanied; Ibert, Piece; Griffes, Poem. Senior recital. solos h. c.

1 + 1 h. c.1 + 1 h. c. For those who do not qualify for String Bass 101 or 103. 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 de sonatas by Eccles. Antoniotri, and D'Andrieu. 3 + 3 h. c. 3 + 3 h. c.401-402. Kreutzer, Studies. Reynolds, Orchestra Studies; Strauss, Orchestra Studies. Solos to include Koussevitzky concerto or Dragonetti The following courses differ only in degree from those listed above. A high standard of proficiency is insisted upon, and a recital is required. 2+2h.c.2 + 2 h. c.See String Bass 301-302. 2 + 2 h. c. 403-404. See String Bass 401-402. 2 + 2 h. c. Minor Courses 1 + 1 h. c. Simandl, Method, Part II. Bach, Minuet and Gavotte; 1 + 1 h. c.Simandl, 30 Etudes. Anderson, Sonatina. 1 + 1 h. c.1 + 1 h. c.100. To be elected by students who do not qualify for Flute 101 or 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, Acioso; 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

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.
		201-202.	2	+	2	h.	С.
303-304.	See Flute	301-302.	2	+	2	h.	с.
403-404.	See Flute	401-402.	2	+	2	h.	с.

Minor Courses

105-106. Altes, Method, Book I; Moyse, The Beginning Flutist; Magnani, Clouds and the Moon: Loeillet solos. I+I h. c.

205-206. Altes, Method, Book II; Boehm, 24 Caprice Etudes; Mozart-Barrere, Minuette in D Major; Bach, Polonase and Badinage from B Minor Suite.

1 + 1 h. c.

305-306. Studies and solos of the level indicated for Flute 101-102. I + I h. c.

405-406. Studies and solos of the level indicated for Flute 201-202. I + I h. ϵ .

Clarinet

100. To be elected by those who do not qualify for Clarinet 101 or 103. The course may be repeated.

Major Courses

101-102. Studies and solos such as Klose, Method, Book II: Rose, 40 Etudes, Books I, 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.

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.

	-	F							
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.

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.	-
			-		4	11.	C.
203-204.	See Oboe	201-202.	2	+	2	h.	0
303 304	C. OI	201 202			_	12.	C.
		301-302.	2	+	2	h	C
403-404	San Ohan	401-402.					
103-101.	See Oppe	401-402.	/	+	1	h	0

Minor Courses

105-106. Studies and solos such as Andraud, Method (1949); Niemann-Labate, Oboe Method; Bakaleinikoff, Elegy; Templeton, Siciliana; J. Wagner. Three Pastorales. I+I 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. I+.Ih. c.

405-406. Studies and solos of the level indicated for Oboe 201-202. I + I 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 1; 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.

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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.

I + I 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. I+I h. c.

305-306. Studies and solos of the level indicated for Bassoon 101-102. $I+I\ h.\ c.$

405-406. Studies and solos of the level indicated for Bassoon 201-202. $I+I\ h.\ c.$

Trumpet

100. To be elected by those who do not qualify for Trumpet 101 or 103. This course may be repeated.

I h. ϵ .

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; Brandt, Orchestral Studies; Sachse. Transposition Studies. 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. Sight reading. Solos of grade IV and V difficulty by Fitzgerald, Vidal, Barat, Goeyens, Deboeck, Busser, and others.

401-402. Advanced studies by Clark, Peitzsch, Laurent, Petit. Charlier; Sachse, *Transposition Studies*; sight reading. Solos of grade V and VI difficulty. Concertos by Haydn, Vidal, Williams, Brandt, Delcroix. 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.	с.
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.

Continued stress on fundamentals of grade I with exten-205-206. sion 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.

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. I+I h. c. 405-406. For those who can qualify. I+I h. c.

French Horn

100. For those who do not qualify for French Horn 101 and 103. The course may be repeated.

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. 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.

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.2 + 2 h. c. See French Horn 201-202. 203-204. See French Horn 301-302. 303-304. 2 + 2 h. c.403-404. See French Horn 401-402.

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.

205-206. Horner, Studies. Continued stress upon fundamentals of grade I. Scales studies in major and minor keyes. Extension of range. Selected cantabile solos.

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. 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. I h. c.

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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. I+I 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. $I+I\ h.\ c.$

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. I+I h. c.

405-406. 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. I $h.\ c.$

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+3h.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+3h.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.

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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.

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	103-104.	See	Tuba	101	-10	12.				2	-4-	2	h.	c
	203-204.	See	Tuba	201	-20	12							h.	
			Tuba										h.	
-	103-404.													-
	. 0	Occ	1 uba	101	- 10	4.				4	+	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. I + Ih, 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. I + I 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. I+I h. ϵ .

405-406. For those who can qualify. I + I h. c.

Percussion

100. To be elected by those who do not qualify for Percussion 101 or 103. The course may be repeated.

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. toll. 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. Modein 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.

ngir standard	01	pronciency	is insisted	upon,	and	a	recital	IS	rea	uire	ed.
103-104.	See	Percussion	101-102.						2		
		Percussion							2		
303-304.	See	Percussion	301-302.						2		
403-404.	See	Percussion	401-402.				321		2		

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.

I+I 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.

I + I h. c.

405-406. For those who can qualify.

I+Ih.c.

Theory and Composition

101-102. Basic Music 1-11. A comprehensive introduction to the theoretical factors of music. Designed to supplement Music 103. Required of all students not passing a theory entrance examination. 2 + 2 h. c.

103-104. Theory I. A unified course of study consisting of partwriting, ear-training, sight singing, and keyboard harmony, using simple chord construction. Formal and harmonic analysis of simple compositions. Meets five hours a week. Prereq.: Passing grade in theory entrance examination, or supplemented by Basic Music I. 4+4h. c.

113-114. Composition A. Extensive analysis of melodic construction in music from the Baroque to contemporary periods: two and three part work based on the Inventions and Suites of Bach. Sonatas by Haydn and Mozart, selected works of Schubert, Schumann, and Chopin. Also pieces by Bartok, Hindemith and other modern masters; original composition in song forms and sectional forms including the simple rondo and sonatina forms. 2 + 2 h. c.

203-204. Theory II. The study of more complex chord construction, modulations, and analysis of compositions in smaller forms. Eartraining, 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.

213-214. Composition B. Studies in progressively larger forms such as larger rondo and sonata-allegro forms. Technics of modern harmony will be introduced, following the practice of such composers as Stravinsky, Milhaud. Copland, Bartok, and others. The student will be expected to compose for voice, and groups of two and three instruments, with and without piano. Prereq.: Music 113-114. 2+2h.c.

313-314. Composition C. Analysis and composition for more extensive media such as choral and chamber music. Prereq.: Music 213-214. 2 + 2 h. c.

301-302. Sight Singing and Ear-Training 1. Two-part sight-singing exercises on modal basis: three-part exercises for soprano, alto, and bartone. Melodic dictation: difficult diatonic skips and chromatic tones in both major and minor keys and in treble, bass, tenor, and alto clefs. Rhythmic dictation: phrase, irregular phrase, period form, major and minor keys, bass and treble clefs, and two-part exercises using the bass and treble clefs, and two-part exercises using the bass and treble clefs combined, with time and key signatures indicated by the student. Intervals: quality, consecutive intervals in bass and treble clefs, major and minor keys with chromatic tones, two-part intervals combining bass and treble clefs. Chords: quality: chord

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progressions introducing all the diatonic seventh chords and chromatic triads in addition to the chords already studied. Two recitations a week. I+I h. c.

327-328. Form and Analysis. A study of musical form, beginning with the phrase and continuing through the song form to the rondo forms and sonata allegro.

2 + 2 h. c.

335-336. Counterpoint I-II. A study of the medieval modes and vocal polyphony, with emphasis on the works of Palestrina and other sixteenth century composers. Some work in eighteenth centry counterpoint. 3+3 h. c.

401-402. Sight Singing and Eac-Training II. Three- and four-part sight-singing exercises for soprano, alto, tenor, and bass voices. Melodic dictation of maximum difficulty in all clefs and keys. Rhythmic dictation: phrase, irregular phrase, and period form exercises in two parts using bass and treble clefs combined, with time and key signatures indicated by the student. Intervals of maximum difficulty introducing modulation to nearly-related and remote keys. Chord progressions using all the diatonic and chromatic chords with modulations to nearly-related and remote keys. Two recitations a week. I+Ih.c.

409-410. Orchestration and Band Arranging. A study of the instruments of the modern orchestra and symphonic band, their tone color, individually and in combination. Writing and arranging for them singly, in groups, and in full score. 2 + 2 h. c.

413-414. Composition D. Preparation of a large work in several movements of piano, for another instrument and piano, or for string quartet. These works will be included in the senior recital, which will be of one hour duration. Prereq.: Music 313-314. 2 + 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. Prereq.: Music 336. 2 h. c.

430. Modern Harmony. A study of harmonic trends in modern music. including polytonality, atonality, and other factors. Prereq.: senior standing, with major in music.

431-432. Composition II. Writing in larger forms, such as sonata-allegro and rondo. 2 + 2 h. c.

433-434. Pedagogy of Theory. The methods, materials, and special problems in the teaching of theory. 2+2 h. c.

Music History and Literature

201, 202. Introduction to the Listener's World of Music. Designed to promote the cultural growth of the non-music student by helping him to develop an intelligent appreciation of the art of music. Illustrated lectures on musical forms, comparisons of compositional styles, and discussions of the chief developments in the history of music, amplified through assigned readings and extensive listening. Open to all students of the university. No prior training in music is required.

2 + 2 h. c.
2 + 2 h. c.

305-306. History of Music. 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. 2 + 2 h. c.

307-308. Survey of Music Literature. A psychological and aesthetic approach to listening to music, with discussion of the problems of listening. The first semester includes a study of the elements of music and the fundamental principles of analysis. The second semester deals with form, from

the simpler da capo to the larger and more complex forms. Lectures, outside reading, scores, and representative recordings. 2 + 2 h. c.

309-310. History and Appreciation of Art and Music: General. Identical with Art 309-310.

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.

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.

363-364. Junior and Senior Choir Methods. Organization, methods child psychology, the child voice, and materials suitable for choirs. The second semester deals with the organization and motivation of the volunteer choir: achieving balance, blend, intonation; interpretation of choral literature, program building, and methods: psychology in rehearsal. 2 + 2 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.

463-464. 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. 2+2 h. c.

465. Service-Playing and Extemporization. The fundamentals of improvisation, modulation, and transposition. Service-playing of hymns, anthems, and solos.

2 h. c.

Conducting

219-220. Conducting I. A practical course in conducting that stresses baton technique, interpretation, and leadership. Works used as interpretative studies are chorals, anthems, part-songs, opera, and symphony. Meets two hours a week. I+I h. c.

331-332. Choral Conducting and Score-Reading. The organization and conducting of choral groups. Practical work with chorus. Practice in score-reading. Prereq.: Music 219-220. I+I h. c.

333-334. Instrumental Conducting and Score-Reading. The organization and conducting of instrumental groups. Practical work with orchestra and band. Practice in score-reading. Prereq.: Music 219-220.

409-410. Orchestration and Band Arranging. A study of the instruments of the modern orchestra and symphonic band, their technic and tone color, individually and in combination. Writing and arranging for them singly, in groups, and in full score. 2 + 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.

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

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ght c. ers. and its relationship to art, literature, geography, history, and other curricular interests. Prereq.: Music 121.

- 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 asd studied. The problems underlying the teaching of these instruments are kept constantly before the class. Meets two hours a week. I + Ih.c.
- 311-312. Class Voice Methods. Fundamentals of correct voice production. Methods of conducting voice classes, glee clubs, and choirs, with a survey and evaluation of materials. Meets two hours a week. $I+I\ h.\ c.$
- 315-316. Music in the First Six Grades. General methods of teaching public school music in the first six grades. A study of rote songs and rhythmic and tonal problems, and analysis of student vocal problems in successive years, with demonstration of methods used in elementary grades. 2 + 2 h. c.
- 318. Percussion Methods. Like Music 225-226, but for percussion instruments. Meets two hours a week. I 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.
- 325-326. String Methods. Like Music 225-226, but for string instruments. Meets two hours a week. I + I h. c.
- 329-330. Brass Methods. Like Music 225-226, but for brass instruments. Meets two hours a week. I + I h. c.
- 411-412, Junior and Senior High School Methods. Classification, problems, materials, methods, organization, and management. Prereq.: Music 311-312. 2 + 2 h. c.
- 417. Instrumental Problems. Methods of organizing and conducting instrumental classes, bands, and orchestras in the public schools, with a survey of materials.

 2 h. c.
- 419. Band Organization, Drum Majoring and Field Technique. Organizing and conducting concert and military bands. Materials, seating plans, marching formations, balanced instrumentation, preparation for rehearsals, and problems of conducting. Opportunity for study and practical experience in drum majoring, with emphasis on military baton signals, field techniques, and drum figures.

HONORS AND AWARDS for 1957-1958

YU Pins

Peggy Tiller Barbara Wentz Marianne Kalocsky Don Seely John Tudhope Herbert Bartelmay

The Youngstown Vindicator Awards

For the best all-around student: Peggy Tiller

For scholarship in the humanities: Patrick Gargoline

> For scholarship in English: Anita DeVivo

For scholarship in the social science sequence:

Dominic Potts

The Clarence P. Gould Society Honors
For the recognition of outstanding students in the liberal arts and sciences.

Anita DeVivo Patrick Gargoline Carl Garver Mrs. Sidney Greenberger Barbara Hoover Nancy Walthers Barbara Wentz Gail Loretta Gearheart Dominic Joseph Potts Harry Thomas

The University Seminar Honors

Dominic Potts

Thomas Calpin

The Henry Roemer Prizes for Men

For scholarship: In chemistry: In mechanical engineering: In metallurgical engineering: For scholarship and for leadership and sportsmanship in athletics:

Patrick Gargoline Nathan Lerner Thomas Jones Raymond Pierce

Peter Rosko

The Greek Prize (not given)

The Chi Omega Alumnae Award
(in social studies)
Severina Gorzela

The Roberts Deliberating Club Award in the Social Sciences

The Omicron Lambda Honorary Biology Fraternity Award for Scholarship Janice Georges The Bronze Medal in Chemistry Elmer Foldvary

The Student Council Purchase Award (in art)

Verna Chambers

The City Office and Art Company Award (in art)

J. Royce Burgermyer

The Los Buenos Vecinos Award
(in art)
Glenn Spillman

The Youngstown University Art Club Award (in art)

J. Royce Burgermyer

The Sigma Kappa Phi Fraternity Scholastic Award
(in business administration)

Charles Schlosser

The Accounting Prize
(given by the National Association of Cost Accountants)

Charles Schlosser

The Louis A. Deesz Memorial Award
(given by the
Mahoning Valley Chapter of the Ohio Society of Professional Engineers)
Thomas Jones

The American Institute of Electrical Engineers, Sharon Section, Award in Electrical Engineering Dwight Lewis

The American Society of Mechanical Engineers, Youngstown Section, Awards in Mechanical Engineering (including the Henrik Ovesen awards)

Richard Zbell

Ray Snyder

The American Institute of Industrial Engineers
Award in Industrial Engineering
Michael Homorody

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The Grace Prentice Maiden Award
(in law)
Paul Burns

The Nathan Hale Chapter, Sons of the American Revolution, Awards

Advanced course: Basic Course:

Cadet Renny J. Domini Cadet Paul J. Kovach

The Mahoning Chapter, Reserve Officers Association, R. O. T. C. Honor Awards

Advanced course: Basic Course:

Cadet Thomas F. Jones Cadet James J. Johnston

The Association of the United States Army Medal Cadet Robert G. Martin

The Lieutenant Colonel Eugene Lash Award Cadet Robert L. Pegues, Jr.

The Corps of Cadets Awards
Outstanding squad leaders:

Cadet Carl S. Kusky, Jr. Cadet William E. Wake

The Armed Forces Communication and Electronics Association Award (not given)

The Society of American Military Engineers Award
Outstanding senior:
Outstanding junior:
Cadet Thomas F. Jones (not given)

The Distinguished Military Graduate Honor Awards
Cadet James Boyazis
Cadet William T. Carnie
Cadet Renny J. Domini
Cadet Robert L. Pegues

Cadet Raymond L. Pierce

The Superior Cadet Ribbon Awards

First year: Cadet David Colson
Second year: Cadet Frank A. Micchia
Third year: Cadet Robert G. Martin
Fourth year: Cadet Thomas F. Jones

The Professor of Military Science and Tactics Trophy
For Summer Camp
Cadet Robert G. Martin

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SAMUEL BLICK Associate Supering	tendent of Buildings and Grounds

Athletics

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WILLARD L.	WEBSIEK.	D. 0	a contract of the contract of	Director	αr	Alphelics

COMMITTEES OF THE FACULTY and Administrative Staff, 1959-1960

The chairman of a committee is the first member named. dent and the Dean of the University are ex officio members of each committee.

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- Athletics: Mr. Scudder, Mr. Kramer, Mr. Pickard, Mr. J. E. Smith, Mr. Webster.
- *Co-ordination and Calendar: Mrs. McCarty, Miss Flint, Mr. Foley, Mr. Gillespie, Mr. Kitchen; one student.
- Credits and Admission: Mr. Buchanan, Mr. Behen, Mr. D'Isa, Mr. Dykema, Mr. Gillespie, Mrs. Smith.
- *Curriculum: Mr. J. E. Smith, Mr. Charignon, Mr. Cohen, Mrs. Dehnbostel, Mr. Evans, Mr. Harder, Lt. Col. Hummel, Mrs. McCarty, Mr. Miller, Mr. Scudder, Mr. Wilcox; two students.
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- *Discipline: Mr. J. E. Smith, Mr. Foley, Mrs. McCarty, Mr. Naberezny; three students.
- Executive: Mr. H. W. Jones, Mr. Behen, Mr. Charignon, Mr. Dykema, Mr. Gillespie, Mr. G. Jones, Mr. Kitchen, Mrs. McCarty, Mr. Miller, Mr. Pickard, Mr J. E. Smith, Mr. Scudder, Mr. Wilcox, Mr. Worley.
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- Personnel: Mr. J. E. Smith, department head concerned.
- Pre-Medical and Pre-Dental Studies: Mr. Webster, Mrs. Botty, Mr. Howard, Mr. Scudder: Mr. Worley ex officio.
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^{*}Committees with student representation.

THE FACULTY*

- HOWARD W. JONES, M. A., D. Ped., President
 A. B., Hiram College; M. A., Western Reserve University; D. Ped., Westminster
 College.
- FRIEDA FRIEND CHAPMAN, M. A., Professor Emerita of Education B. S. in Ed., Ohio University; M. A., Ohio State University. 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.
- MARGARET EVANS, B. S., Professor Emerita of Art B. S., Chicago. Graduate study: Columbia University. Pupil of Arthur Dow and Walter Sargent. Director of Art, The Butler Art Institute, 1919-1952. Retired 1952.
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 - A. B., Ph. D., Johns Hopkins University; LL. D., Washington College. Retired 1957.
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 A. B., Ohio University.
- WAYNF 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. Registered Professional Engineer.
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 B. S., Kent State University; M. A., Western Reserve University. Previous study:
 Conservatory of Music, Vienna. Graduate study: Western Reserve University.
 Former member of Vienna and Youngstown symphony orchestras; member of
- Cleveland Orchestra.

 SAMUEL S. BADAL. JR. Music; Cleveland Institute of Music,
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 A. B., B. S. in Ed., Youngstown University; M. S. in Ed., Westminster College
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 A. B., Brown University. Graduate study: Westminster College.

^{*}Members not listed by rank are carrying less than a full teaching load.

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ROBERT DALE BARR, B. S. in B. A. Accounting
B. S. in B. A., Youngstown University. Certified Public Accountant.

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M. E., Military Technical Academy, Charlottenburg, Graduate study: Carnegie
Institute of Technology. Registered Engineer.

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IRWIN	C	OH	EN,	Ph	D	., Profe	ssor o	f	Chemistry
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