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**Youngstown**  
**.. College ..**  
**1947 - 1948**

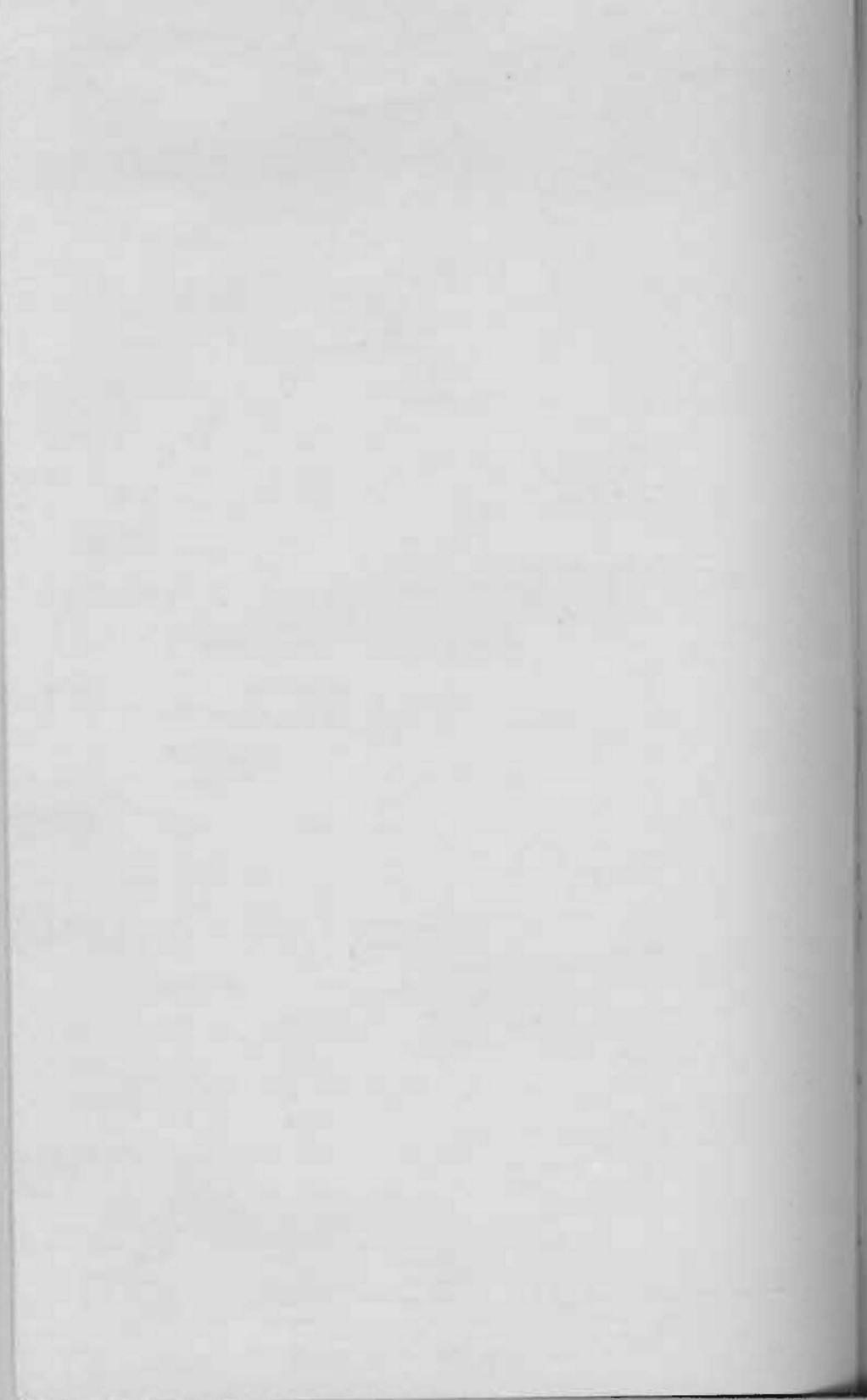




*The Main Building*



*The William Rayen School of Engineering*



Bulletin of  
Youngstown College

Catalog Number

1947 - 1948



Youngstown, Ohio

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Youngstown College 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.

## COLLEGE CALENDAR

1947-48

1947

September 15, Monday, 8:00 a. m. . . . . Classes begin  
November 26, Wednesday, 10:00 p. m. . . . . Thanksgiving holiday begins  
December 1, Monday, 8:00 a. m. . . . . Thanksgiving holiday ends  
December 17, Wednesday, 10:00 p. m. . . . . Christmas vacation begins

1948

January 5, Monday, 8:00 a. m. . . . . Christmas vacation ends  
January 31, Saturday, 12 noon . . . . . First semester ends  
February 2, Monday, 8:00 a. m. . . . . Second semester begins  
March 26, Friday . . . . . Good Friday holiday  
May 30, Sunday . . . . . Baccalaureate Service  
June 3, Thursday, 10:00 p. m. . . . . Second semester ends  
June 4, Friday . . . . . Commencement  
June 14, Monday, 8:00 a. m. . . . . Summer session begins  
August 21, Saturday . . . . . Summer session ends

### School of Law

1947

September 25-26, Thursday-Friday . . . . . Registration  
September 29, Monday . . . . . Fall quarter begins  
December 18, Thursday . . . . . Fall quarter ends

1948

January 5, Monday . . . . . Winter quarter begins  
March 25, Thursday . . . . . Winter quarter ends  
March 29, Monday . . . . . Spring quarter begins  
June 17, Thursday . . . . . Spring quarter ends  
July 5, Monday . . . . . Summer quarter begins  
September 23, Thursday . . . . . Summer quarter ends



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 M. S., Ohio State University  
 Ph. D., Ohio State University
- FAY TREFFERT LITVIN, A. M. .... *English*  
 A. B., Youngstown College  
 B. S. in L. S., Western Reserve University  
 A. M., Western Reserve University
- PAUL C. LUGINBILL, B. S. .... *Chemistry*  
 B. S. in C. E., Purdue University
- ROBERT J. MCCALLISTER, A. B.\* . . . *Business Administration*  
 A. B., Kenyon College
- JOHN N. MCCANN, M. D. .... *Lecturer in Biology*  
 B. S., Georgetown University  
 M. D., Georgetown University
- THOMAS HILL McDONALD, B. S.\* ..... *Mathematics*  
 B. S., The College of Wooster  
 Graduate Study, Kent State University
- LEAH MACDONALD MCILROY, A. M.\* ..... *Music*  
 A. B., Youngstown College  
 A. M., Carnegie Institute of Technology
- CHARLES MCNEAL, A. M.\* ..... *English*  
 A. B., Ohio State University  
 A. M., University of Pennsylvania
- THEODORE MACEJKO, LL. B.\* . . . . *Business Administration*  
 A. B., Youngstown College  
 LL. B., Ohio Northern University
- JAMES R. MACQUEEN, A. B. LL. B.\* ..... *Social Science*  
 A. B., Miami University  
 LL. B., Western Reserve University
- ERSKINE MAIDEN, JR., A. B.\* ..... *Law*  
 A. B., Harvard University  
 Harvard Law School  
 Western Reserve Law School

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\* Instructors not carrying full teaching load

FACULTY

- NICHOLAS W. MAINE, A. B.\* ..... *Chemistry*  
 A. B., Youngstown College
- FRANK J. MALAK, B. S. in Ed. .... *Mathematics*  
 B. S. in Ed., Ohio State University
- DONALD E. MARCY, A. M. .... *Biology*  
 B. S., Oregon State College  
 A. M., Columbia University
- RAYMOND E. MEINERS, A. M.\* .... *Business Administration*  
 B. S., James Millikin University  
 A. M., Ohio State University
- D. ROY MELLON, B. S.\* ..... *Chemistry and Bacteriology*  
 B. S., Allegheny College  
 LL. B., Youngstown College  
 Graduate Study, Ohio State University
- A. ELIZABETH MILLER, A. M.\* ..... *English*  
 A. B., Thiel College  
 A. M., Columbia University  
 Graduate Study, University of Denver
- DOROTHY T. MILLER, A. M.\* ..... *English*  
 B. S. in Ed., Ohio State University  
 A. M., University of Pittsburgh
- ROBERT L. MILLER, B. S. in B. A. ... *Acting Director, Division  
 of Business Administration*  
 B. S. in B. A., Ohio State University  
 Graduate Study, Ohio State University
- WILLIAM H. MILLER, M. Mus. .... *Dean, The Dana School  
 of Music*  
 B. Mus., Wittenberg College  
 M. Mus., University of Michigan  
 Graduate Study, Eastman School of Music of the University of  
 Rochester
- JOSEPH A. MOORE, D. Ed.\* ..... *Education*  
 B. S., University of Pittsburgh  
 A. M., University of Pittsburgh  
 D. Ed., University of Pittsburgh
- THEODORE MOORE, M. L.\* ..... *English*  
 A. B., Youngstown College  
 M. L. University of Pittsburgh
- LAVERDA D. MORAN, A. B.\* ..... *English*  
 A. B., Pennsylvania College for Women  
 Graduate Study, Pennsylvania State College

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\* Instructors not carrying full teaching load

YOUNGSTOWN COLLEGE

- ELIZABETH BROWN MORGAN, A. M.\* ..... *Latin*  
 A. B., Randolph-Macon Woman's College  
 A. M., Columbia University  
 Graduate Study, American Academy, Rome, Italy
- LEON A. MORRIS, M. Ed.\* ..... *English*  
 B. S., Ohio State University  
 M. Ed., University of Pittsburgh
- HERMAN E. MULLER, JR., B. S. in M. E.\* ..... *Engineering*  
 B. S. in M. E., Carnegie Institute of Technology  
 Graduate Study, Carnegie Institute of Technology, University of  
 Pennsylvania, Temple University
- ALVIN MYEROVICH, B. S. in Ed. .... *Music*  
 Pupil of Sascha Jakobinoff and Albert Meioff of the Curtis  
 Institute of Music, Philadelphia; Andre de Ribeaupierre,  
 Louis Persinger, and Joseph Fuchs, Cleveland Institute of  
 Music  
 B. Mus., Cleveland Institute of Music  
 B. S. in Ed., Youngstown College
- PAUL NARBUTOVSKIH, Ph. D.\* ..... *Engineering*  
 A. B. Stanford University  
 E. E., Stanford University  
 Ph. D., Stanford University
- WILLIAM G. NELSON, A. B. .... *Business Administration*  
 A. B., Youngstown College
- LEIF OYEN, B. S. in C. E. .... *Engineering*  
 B. S. in C. E., Case School of Applied Science
- MARY ELEANOR PAGAROLL, B. S. .... *Psychology*  
 B. S., Allegheny College  
 Graduate Study, Pennsylvania State College
- RUTH PARK, B. S. in Ed. .... *Assistant Librarian*  
 B. S., in Ed., Ohio University  
 Graduate Study, University of Washington, Kent University,  
 Western Reserve University
- VIOLA M. PAROZ, A. M.\* ..... *Home Economics*  
 B. S., Columbia University  
 A. M., Columbia University
- MARY PFINGSGRAFF, M. Litt.\* ..... *German*  
 B. S. in Ed., Kent State University  
 M. Litt., University of Pittsburgh
- MARJORIE B. PILZ, B. S. in Ed. .... *Secretarial Studies*  
 B. S. in Ed., Youngstown College

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\* Instructors not carrying full teaching load

FACULTY

- VALENTINA POTOR, A. M. . . . . *Mathematics*  
 A. B., Youngstown College  
 A. M., Indiana University
- JOHN J. PRESSLY, B. S. in Ed.\* . . . . *Art*  
 B. S. in Ed., Youngstown College
- O. L. REID, A. M. . . . . *Director, Division of Social Sciences*  
 A. B., Indiana University  
 A. M., New York University  
 LL. B., University of Louisville
- JOHN W. REMICK, B. S. in Ed.\* . . . . *Music*  
 B. S. in Ed., Kent State University
- ALBERT G. RESCH, JR., A. M.\* . . . . *Social Science*  
 A. B., Ohio University  
 A. M., Ohio University  
 Graduate Study, Western Reserve University
- HAROLD REUBEN, M. S. in E.\* . . . . *Engineering*  
 B. C. E., Ohio State University  
 M. S. in E., Cornell University
- LEONARD T. RICHARDSON, Doctor de l'Université . . . . *Head,*  
*Department of Foreign Languages*  
 A. B., Aurora College  
 A. M., University of Chicago  
 Docteur de l'Université de Grenoble, France
- C. W. RICKSECKER, Ed. D.\* . . . . *Mathematics*  
 Ph. B., Wooster College  
 A. M., Wooster College  
 Ed. D., University of Pittsburgh
- SIDNEY RIGELHAUPT, LL. B.\* . . . . *Business Law*  
 LL. B., Youngstown College
- BRUCE T. RILEY, Ph. D. . . . . *Social Science*  
 A. B., Cornell College  
 S. T. B., Boston University  
 Ph. D., Boston University
- EDWARD ROBERTS, A. B., LL. B.\* . . . . *Law*  
 A. B., Marietta College  
 LL. B., Columbia University
- HELEN H. ROBERTSON, M. Ed.\* . . . . *English*  
 B. S. in Ed., Ohio University  
 M. Ed., University of Pittsburgh
- JAY RODKEY, A. B. A.\* . . . . *Business Administration*  
 A. B. A., Youngstown College

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\* Instructors not carrying full teaching load



YOUNGSTOWN COLLEGE

- DOMINIC ROSSELLI, B. S. in Ed. . . . . *Physical Education*  
 B. S. in Ed., Geneva College  
 Graduate Study, University of Pittsburgh
- ELVERA B. ROSSI, B. S. in Ed. . . . . *Secretarial Studies*  
 B. S. in Ed., Youngstown College
- MOLLIE F. RUSSELL, A. M.\* . . . . *English*  
 B. S., New York University  
 A. M., New York University  
 Graduate Study, Columbia University, Western Reserve University,  
 Pennsylvania State College, Harvard University, University  
 of Colorado
- SHERMAN SAMUELS, B. S.\* . . . . *Business Administration*  
 B. S., Grove City College
- ANNE BERNARD SCHAFER, A. M.\* . . . . *English*  
 B. S. in Ed., Kent State University  
 A. M., Ohio State University
- JACOB SCHMITT, D. Mus. . . . . *Music*  
 B. Mus., Dana's Musical Institute  
 M. Mus., Dana's Musical Institute  
 D. Mus., Dana's Musical Institute  
 Pupil of Emil Liebling and W. H. Sherwood
- WERNER W. SCHULTZ, A. B. . . . . *English*  
 A. B. Hiram College  
 Graduate Study, Oberlin College, Kenyon College
- LEE H. SCHWARTZ, M. B. A.\* . . . . *Business Administration*  
 A. B., University of Pennsylvania  
 M. B. A., Harvard University
- EUGENE DODD SCUDDER, Ph. D. . . . . *Head,*  
*Department of Chemistry*  
 A. B., Indiana University  
 A. M., Indiana University  
 Ph. D., Indiana University
- JOSEPH B. SCULLEN\* . . . . *Business Administration*  
 Youngstown College
- LEONARD SELIGER, M. S.\* . . . . *Psychology*  
 B. S., College of the City of New York  
 M. S., College of the City of New York  
 Graduate Study, Columbia University
- HARRISON T. SEXTON, A. M.\* . . . . *Secretarial Studies*  
 A. B., Ohio University  
 A. M., Kent State University

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\* Instructors not carrying full teaching load

FACULTY

- JOSEPH EARL SMITH, Ph. D. . . . . *Head,*  
*Department of Economics*  
 A. B., Oxford University, England  
 A. M., University of Nebraska  
 Ph. D., Wallas College, London, England
- MARY BOYER SMITH, M. Ed. . . . . *Assistant Director of Health*  
*and Physical Education*  
 A. B., Hiram College  
 M. Ed., Ohio State University
- THOMAS C. SMITH, A. M. . . . . *Mathematics*  
 B. S. in E. E., New York University  
 A. M., New York University  
 Graduate Study, University of Michigan
- WESLEY A. SOWLE, Ph. D.\* . . . . *English*  
 A. B., Boston University  
 A. M., University of Pittsburgh  
 Ph. D., University of Pittsburgh
- MARGARET STAGE, M. Ed.\* . . . . *Physical Education*  
 B. S. in Ed., Youngstown College  
 M. Ed., University of Pittsburgh
- HENRY V. STEARNS, D. Ped. . . . . *Music*  
 B. Mus., American Conservatory of Music  
 Private Study, Berlin, Germany  
 F. A. G. O.  
 M. Mus., American Conservatory of Music  
 D. Ped., Cincinnati Conservatory of Music
- PAUL E. STEVENS, LL. B.\* . . . . *Law*  
 LL. B., Ohio State University
- ROY B. STINE, A. M.\* . . . . *Chemistry*  
 B. S., Bucknell University  
 A. M., University of Pennsylvania  
 Graduate Study, Harvard University
- WILLIAM HOWARD TAFT, A. M. . . . *Business Administration*  
 A. B., Westminster College  
 B. J., University of Missouri  
 A. M., University of Missouri  
 Graduate Study, Western Reserve University
- JAMES A. TAVOLARIO, M. Mus.\* . . . . *Music*  
 A. B., Youngstown College  
 M. Mus., Cincinnati Conservatory of Music
- J. TRANTIN, JR., B. S. in Chem. E.\* . . . . *Engineering*  
 B. S. in Chem. E., University of Wisconsin

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\* Instructors not carrying full teaching load

YOUNGSTOWN COLLEGE

- CORA B. TURNER, A. M.\* ..... *Mathematics*  
 B. S., Hiram College  
 A. M., University of Pittsburgh  
 Graduate Study, University of Wisconsin and Columbia University
- RALPH E. TURNER, LL. B.\* ..... *Business Law*  
 LL. B., Youngstown College
- INA F. WOESTEMEYER VAN NOPPEN, Ed. D. .... *History*  
 B. S., University of Kansas  
 A. M., Teachers College, Columbia University  
 Ed. D., Teachers College, Columbia University
- JOHN JAMES VAN NOPPEN, Ed. D.\* ..... *English*  
 A. B. University of North Carolina  
 A. M., Columbia University  
 Ed. D., Columbia University
- I. A. VARRAUX, B. S.\* ..... *Industrial Engineering*  
 B. S., Carnegie Institute of Technology
- R. A. WALDRON, Ph. D. .... *Science*  
 B. S., Massachusetts State College  
 M. S., Pennsylvania State College  
 Ph. D., University of Pennsylvania
- JOHN F. WALTER, M. Ed.\* ..... *Education*  
 B. S., Kent State University  
 M. Ed., University of Pittsburgh
- JOHN WAMPLER, B. Ed.\* ..... *Business Administration*  
 B. C. S., Youngstown College  
 B. Ed., Shippensburg State Normal College
- JAMES S. WARING, B. S.\* ..... *Physical Education*  
 B. S., George Williams College
- HARVEY T. WARREN, A. B.\* ..... *English*  
 A. B., Yale University
- JEAN WEBB, B. S.\* ..... *Education*  
 B. S., Teachers College, Columbia University
- WILLARD L. WEBSTER, B. S. .... *Biology*  
 B. S., Geneva College  
 Graduate Study, University of Pittsburgh
- MARCIA A. WELSH, A. B. .... *Mathematics*  
 A. B., Youngstown College

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\* Instructors not carrying full teaching load

FACULTY

R. CLARE WESTENFIELD, A. M., LL. B. . . . . *Assistant to the  
Dean, School of Law*

A. B., Hiram College  
A. M., University of Chicago  
LL. B., Salmon P. Chase College of Law  
Graduate Study, Harvard University, University of Cincinnati,  
New York University

A. J. WHITAKER, B. S. in Ed.\* . . . . . *English*

B. S. in Ed., Geneva College  
Graduate Study, Columbia University, University of Pittsburgh,  
University of Wisconsin

CLARK C. WHITE, M. Ed.\* . . . . . *Biology*

B. S. in Ed., Ohio University  
M. Ed., University of Pittsburgh

GEORGE M. WILCOX, Ph. D. . . . . *Head,  
Department of Education*

A. B., Cornell College  
A. M., State University of Iowa  
Ph. D., Columbia University

BERNARD T. WILKENS\* . . . . . *Engineering*

Youngstown College

EVAN J. WILLIAMS, A. M.\* . . . . . *English*

A. B., Marietta College  
A. M., Vanderbilt University

J. B. WILLIAMS . . . . . *Director of the School of Business*

Arcada College  
Southern Normal School  
Bowling Green Business School

JAMES B. WILLIAMS, JR., A. B. . . . . *Business Administration*

A. B., Youngstown College

RICHARD WILLS, LL. B.\* . . . . . *Law*

A. B., Yale University  
LL. B., Yale University

MYRON J. WISLER\* . . . . . *Music*

Pupil of William Keifer of the U. S. Marine Band; Byron Galbraith of the Pittsburgh Symphony Orchestra, and Roy Knapp, Chicago

RALPH WOLF, B. Met. Engr.\* . . . . . *Physical Education*

B. Met. Engr., Ohio State University

CARL M. WOLTER\* . . . . . *Business Administration*

Moravian College, University of Pennsylvania, Carnegie Institute  
of Technology

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\* Instructors not carrying full teaching load

YOUNGSTOWN COLLEGE

CLAIR L. WORLEY, Ph. D. . . . . *Head,  
Department of Biological Science*

A. B., Hiram College  
M. S., University of Idaho  
Ph. D., University of Wisconsin

INGA S. WORLEY, Ph. D. . . . . *Biological Science*

B. S. in Ed., University of Wisconsin  
A. M., University of Wisconsin  
Ph. D., University of Wisconsin

KNOWLES WYATT, B. S., LL. B.\* . . . . *Law*

B. S., Muskingum College  
LL. B., Youngstown College

BERNARD J. YOZWIAK, A. B. . . . . *Engineering*

A. B., Marietta College  
Graduate Study, Case School of Applied Science

CHARLES N. ZELLERS, M. B. A. . . . *Business Administration*

A. B. Youngstown College  
M. B. A., University of Pennsylvania  
Graduate Study, Harvard University

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\* Instructors not carrying full teaching load

## FACULTY COMMITTEES

- Academic Standards*—Mr. Dykema, chairman; Mr. Bloom, Mrs. Bridgham, Mr. Richardson, Mr. J. E. Smith, Mr. Wilcox, Mr. Worley, Mr. Zellers, Mrs. Van Noppen.
- Appointments, Tenure, and Sabbatical Leaves*—Mr. Wilcox, chairman; Mr. J. E. Smith, Mr. Gould, Head of Department.
- Athletic Board*—Mr. Gould, chairman; Mr. Webster, Mr. Pickard, Mr. Wilcox, Mr. J. E. Smith, Mr. Scudder, Mr. Taft.
- Catalog*—Miss Flint, chairman; Mr. Gould, Mr. Reid, Mr. Dykema, Mr. Scudder, Mr. Ellis, Mrs. Van Noppen.
- Chapel and Religious Activities*—Mr. Stearns, chairman; Mr. J. E. Smith, Miss Chapman, Mr. W. H. Miller, three student representatives.
- Commencement*—Mr. Dykema, chairman; Mr. Stearns, Mrs. Bridgham, Mrs. Dehnbostel, Mr. Taft.
- Coordination and Calendar*—Mr. Stearns, chairman; Miss Evans, Miss Potor, Mr. T. C. Smith.
- Credits and Admission*—Mr. Buchanan, chairman; Mr. Wilcox, Mrs. Smith.
- Curriculum*—Mr. J. E. Smith, chairman; Mr. Scudder, Mr. Reid, Mr. Wilcox, Mr. Deesz, Mr. Gould, Mr. Howard, Mr. R. L. Miller.
- Discipline*—Mr. Wilcox, chairman; Mrs. Smith, Mr. Beard, three student representatives.
- Executive*—Mr. Jones, chairman; Mr. Wilcox, Mr. J. E. Smith, Mr. Scudder, Mr. Gould, Mr. Deesz.
- Faculty-Student Relations*—Mr. J. E. Smith, chairman; Mr. Pickard, Mr. Scudder, Mrs. Dykema, three student representatives.
- Library*—Mr. Gould, chairman; Mr. Reid, Mr. J. E. Smith, Mr. Richardson, Mr. Worley, Mr. Westenfield, Mr. Oyen.
- Social Activities*—Mrs. Smith, chairman; Miss Potor, Mr. Beard, Mr. Ellis, Mrs. Botty.
- Visual Education*—Miss Chapman, chairman; Miss Evans, Mr. Elser, Mrs. Litvin, Mr. Grabski.

## OBJECTIVES

The Shenango and Mahoning valleys constitute a highly industrialized community of more than half a million people, including a large number of foreign birth or parentage. This community has need of educational opportunities for young men and women of college age, and also for other men and women who desire a college education. Youngstown College attempts to meet their needs by offering them something for their personal development, something to enable them to fulfill their obligations of citizenship, and something for their practical work in life.

The program of the college focuses upon the development of the individual student along the three-fold lines of moral and social integrity, intellectual and cultural interests, and occupational competency.

To achieve these ends, the college seeks to provide a broad, liberal, and cultural education characterized by habits of free inquiry, powers of exact observation, a love of truth, a taste for good reading, familiarity with the general content of the various fields of knowledge, rigorous discipline in some chosen field, and ability to express thoughts clearly and forcefully.

This program aims to develop a sound philosophy of life including an appreciation of those moral, religious, intellectual, and aesthetic values which make life satisfying; standards of rational conduct and discipline derived from an intelligent understanding of one's self in relation to others and coming from within rather than from external authority; and stability and integrity of character, arising from sound principles and a sustained religious faith, irrespective of church affiliation.

## HISTORICAL SKETCH

Youngstown College traces its origin back to 1888 when the Y.M.C.A. established The Youngstown Association School to provide certain educational opportunities for employed men and boys unable to attend the public schools. The establishment of an institution on the college level came in 1908 when the School of Law was organized with an entering class of nine. By 1920 a full course in law was being offered, and the law school was empowered by the State to grant the degree of Bachelor of Laws. In the same year the curriculum in other fields was expanded, and a four-year course in business administration was offered. In 1921 The Youngstown Association School became The Youngstown Institute of Technology, liberal arts courses were offered in evening classes, and the institution became coeducational. In 1927 a College of Liberal Arts was established and for the first time a program of day classes was offered to meet the demands of the increasing number of younger students. In 1928 the name of the school was changed to Youngstown College, and in June, 1930, the first graduating class was granted the degree of Bachelor of Arts.

During the years of its development the school has had a number of homes. The Youngstown Association School was housed on the third floor of the old Central Y. M. C. A. building and in the new Central Y. M. C. A. until 1923 when the Bonnell property at 315 Wick Avenue was leased and all college classes were moved to that building. The preparatory schools remained at the Central Y. M. C. A. building. In 1925 the John C. Wick property at 410 Wick Avenue was purchased by the Y. M. C. A., and both college classes and the preparatory classes were moved to this location. Within two years more space was needed and the adjoining Henry Wick property on the north was leased and occupied by the college classes. This was the home of the college until October 1, 1931, when the



present Main Building was dedicated and opened for classes. In 1938 the Henry Wick property was purchased for the School of Business.

In 1946 the Rayen Trustees leased to Youngstown College the old Rayen School one block south of the Main Building. It has been remodeled at a cost of \$120,000 into the modern and well-equipped William Rayen School of Engineering.

The Dana School of Music of Youngstown College began as Dana's Musical Institute in 1869 in Warren, Ohio. It was merged with Youngstown College during the summer of 1941, and the Charles S. Thomas mansion at 616 Wick Avenue, a block from the main college building, was purchased to house the new school of music.

In 1933 Youngstown College was fully accredited by the State Department of Education to train high school teachers, and in 1939 the right to train elementary teachers was granted. In 1940 it was admitted to the Ohio College Association, in 1941 to the Association of American Colleges, in 1945 to the North Central Association of Colleges and Secondary Schools, and in 1946 to the American Council on Education. Youngstown College became an associate member of the National Association of Schools of Music in 1947.

In January, 1944, control and properties of Youngstown College and financial responsibility for the institution were transferred from the Trustees of the Y. M. C. A. to the Board of Trustees of the college.

A building fund has been invested in one-year bonds, the whole amount still being augmented for the development of a library building and for the expansion of the facilities of the engineering department of the college.

## THE GENERAL PROGRAM OF THE COLLEGE

Youngstown College is coeducational and non-sectarian, and its facilities are open to all properly qualified persons. Currently, special efforts are being made to give all necessary guidance and assistance to veterans. The faculty has been enlarged and classroom and laboratory facilities have been increased to meet the exceptional demands of this group.

### The College of Arts and Sciences

The regular program in arts and sciences is offered in day and evening classes so that those who must work during the day may pursue their studies in late afternoon and evening classes. Evening classes give the same credit toward degrees as those offered during the day.

For the academic day and evening classes the college year extends from September to June and is divided into two semesters of eighteen weeks each. Sessions are held six days and five evenings a week. The courses are so arranged that students graduating from high school in January and wishing to enter college at that time may arrange satisfactory schedules for the second semester.

### William Rayen School of Engineering

The William Rayen School of Engineering offers complete courses in electrical, industrial, mechanical, and metallurgical engineering leading to the degree of Bachelor of Engineering.

### The School of Law

The School of Law offers a complete course leading to the degree of Bachelor of Laws. Classes in law are held throughout the year and meet in the evenings. The school operates on the

## YOUNGSTOWN COLLEGE

quarter plan. Five years or a total of nineteen quarters constitute a complete law course. The college offers a combined course by which a student who has completed three years of work in liberal arts courses may receive the degree of Bachelor of Arts after finishing two years of work in the law school. Three additional years in the law school will entitle him also to the degree of Bachelor of Laws.

### The Dana School of Music

The Dana School of Music of Youngstown College offers complete courses preparing for the teaching of music in the public schools, private teaching, and concert work. Private instruction is available in vocal and instrumental work. Courses offered in the school of music lead to the degrees of Bachelor of Arts, Bachelor of Science in Education, and Bachelor of Music.

### Summer Session

The summer session usually consists of two five-week terms with classes meeting six days a week. A special bulletin is issued giving full information about the summer program.

## BUILDINGS AND OTHER FACILITIES

The Main Building is a beautiful limestone structure of conventional Tudor style built in 1931 at the corner of Wick and Lincoln avenues. This building houses the College of Arts and Sciences and the School of Law. In it are the library, the classrooms, the laboratories for biology and chemistry, an assembly hall, recreation rooms for both students and faculty, and administrative offices. One block north of the Main Building on Wick avenue are the buildings of The Dana School of Music of Youngstown College, adjoining it on the north is the building of the School of Business, and one block south is the building of the William Rayen School of Engineering. At the rear of the main college campus are the Athletic Building, the Accounting Building, four annex buildings, and the cafeteria.

For gymnasium and other athletic work the college uses the equipment of the Y. M. C. A. and the Y. W. C. A., the former about four blocks away and the latter but one block. Field facilities for athletic team practice and games are secured through arrangements by which Rayen Stadium and South Field House are made available to the college.

Although the college has no dormitories, arrangements have been made for women students to occupy a section of the magnificently equipped new Buechner Hall on the corner of Bryson and Spring streets. Here the usual dormitory accommodations and activities are provided.

Biology classes not only use Mill Creek Park for field trips but also have the privilege of occupying well-equipped classrooms in the Mill Creek Park Museum. The two local radio broadcasting stations permit the college to use their facilities for various purposes, and the social agencies of the city make it possible for students in sociology to do practical social work.

### Library Facilities

The library, which is on the fourth floor of the Main Building, is open from 8 a. m. to 9 p. m., Monday through Friday, and from 9 a. m. to 12 noon on Saturday. Borrower's cards are issued to all students of the college upon application and presentation of evidence of enrollment.

## YOUNGSTOWN COLLEGE

The library contains 40,900 volumes of current and research value. This collection grows at the rate of about 4,500 volumes a year. The library subscribes to 375 magazines, both general and specialized.

Besides the general collection of books, the library also contains a collection of 4,500 law books.

An association known as the Friends of the College Library, organized in 1938 by the Youngstown Chapter of the American Association of University Women, has assumed the responsibility of raising over a ten-year period a fund of \$50,000 for book purchases. The contributions of this group are of great value to the library.

The Youngstown Public Library, across the street from the college, contains a collection of more than 235,251 volumes which are easily accessible to the students. Avoiding duplication as far as practicable, the Youngstown Public Library supplements the college library in general fields of study and local history.

### Laboratory Facilities

The biological laboratories are equipped with the necessary materials to adequately supply each student. Thus, individual performances of standard exercises in all basic courses and in more advanced phases of embryology, histology, and anatomy can be pursued. The facilities of Mill Creek Park are available also for the study of the local fauna and flora.

Chemistry laboratories contain sufficient apparatus to supply individual equipment for the present enrollment in general, quantitative, qualitative, and elementary organic chemistry. The physical chemistry laboratory is well equipped for performing the standard experiments in that field.

### Engineering School Facilities

The William Rayen School of Engineering was made available to Youngstown College in January, 1946. This building now accommodates the classes in mathematics, physics, and engineering.

The basement in the rear of the building consists of two large rooms, 68 x 32 feet. One of these is used for housing some of the power generating equipment and the auxiliary equipment required for the mechanical engineering laboratory located on the floor above. The former consists of a 25 kw Cummings diesel driven generator, two vertical engine driven generators, 10 kw and 20 kw, and several smaller gasoline engine driven units. The other room is used for the metallurgical laboratory. It contains electric heat treating and melting furnaces, precision pyrometers, a 250,000 volt lead shielded X-Ray machine, and a well-equipped machine shop for general metal working. Two large classrooms, adequately lighted, are in the basement at the front of the building. One of these is used for a mechanical drawing room.

The main floor consists of four well-lighted classrooms, a study room, a library of technical books, the mechanical engineering laboratory, and the materials testing laboratory. The mechanical engineering laboratory contains a 60 kw turbo-generator, a 35 kw horizontal engine driven generator, a large pumping section for studying the characteristics of centrifugal pumps, a commercial installation of refrigeration and air-conditioning units set up for experimentation, together with a motor driven blower set up for determining the flow of air in ducts. Adjacent to the laboratory is a boiler room for the supply of steam in the study of thermo-dynamics and power engineering. The strength of materials laboratory houses a 400,000 pound Olsen tensile testing machine, a 60,000 pound Riehle testing machine, a 10,000 pound Baldwin Southwark tester, and Fairbanks-Morse concrete briquet testing equipment. The laboratory also has Rockwell, Brinell, and Scleroscope hardness testing equipment, and a wide variety of high precision measuring instruments.

On the second floor are located the engineering drawing rooms, the physics laboratory and classroom, and the electrical laboratories. The two drawing rooms, 40 x 40 feet, are lighted with fluorescent streamers the full width of the rooms and are furnished with modern drafting room equipment. The physics laboratory, 68 x 38 feet, has ample floor space and head room for the use of the wide variety of experimental apparatus with which it is equipped. The laboratory has been furnished with

apparatus which will permit the performance of the college grade experiments as published by the Central Scientific Company. Due to the large size of the laboratory the major equipment is completely assembled and available at all times for experimentation. The laboratory is wired for direct current, single and three phase alternating current. The physics classroom connects directly with the laboratory, a feature appreciated by student and teacher alike. In this room the demonstration-lecture table is provided with the usual gas, current, and water together with a variety of large-scale demonstration equipment. Visual aids, motion pictures, and slide films, are used to supplement the demonstrations.

The electronic laboratory is located on the second floor for the experimental work in electron dynamics and electronic applications. Various oscillators, high frequency generators, tubes, transformers, condensers, wave meters, and other apparatus are available for student use. The main electrical engineering laboratory is located next to the electronic laboratory and it consists of a room 68 x 38 feet. In the electrical engineering laboratory next to the electronic laboratory is located a double-generator, motor-driven set. This generator is capable of supplying 4,500 volts of direct current for electronic tube plate application in the electronic laboratory. A five kw motor generator with two interchangeable armatures for extending the range of electrical principles is available for student use. It may also be driven by a separate slip-ring induction motor rather than by its own synchronous motor. This motor generator set is designed especially by the Westinghouse Electric Corporation for educational institutions and a variety of experiments on rotating machines can be performed with this equipment. Transformers including those designed for phase transformation are available. Many types of single-, two-, and three-phase motors up to 20 hp. motors, controllers, reactors, etc., are included to make possible a large variety of theoretical and practical experiments. A cathode ray oscilloscope is available for the study of wave forms. The laboratory is well equipped with loading and adjustable resistors, condensers, and inductors. A full line of meters is available for precision measurements. A 20 kw motor generator set is also available for use with the previously mentioned machine for demonstrating the parallel operation of generators, and frequency converter M. G.

set for supplying 240. A double current generator is installed and can be used to obtain direct current and various alternating current frequencies simultaneously.

### Music School Facilities

The larger of The Dana School of Music buildings contains a recital hall, six studios, three classrooms, a rehearsal room, two practice rooms, and the music and record library. The annex, located directly behind the main building, contains fifteen sound-proof practice rooms and a large rehearsal room.

Equipment includes ten grand pianos and twenty-six uprights, a Hammond model E electric organ, a collection of band and orchestral instruments, a library of band and orchestra music of over 600 titles, a library of more than 500 books on music, and a library of recordings of standard compositions.

### Cultural Opportunities

Students at Youngstown College have unusual opportunities for hearing a wide range of the best in music. There are recitals by the faculty and students of The Dana School of Music of Youngstown College, organ recitals at Stambaugh Auditorium under the auspices of the American Guild of Organists, concerts by the Youngstown Symphony Orchestra, and various activities of the Monday Musical Club. These series of concerts bring to Youngstown each season a number of the world's greatest musical artists.

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

In the field of drama students have opportunities of enjoying the college plays and also some of the best professional productions brought here by the local theaters. In addition, there is the Playhouse located not far from the city's center. This project is carried on by a group of Youngstown people, and members of the college community frequently participate in the plays. Play production classes of the college meet at the Playhouse.



## YOUNGSTOWN COLLEGE

Another civic building of rare beauty is the Stambaugh Auditorium, which houses one of the great organs of the country and serves as a center for lectures, dances, musical programs, and other functions. Besides the ample facilities for various civic and college activities, the main auditorium, noted for its acoustic excellence, seats 2,600 people. Many of the great visiting artists have expressed their appreciation of this beautiful auditorium.

Many churches of various denominations are within easy walking distance of the college.

## FEES AND EXPENSES

All tuition and fees are due and payable at the opening of each semester and must be paid not later than the last day of the registration period. Students will not be permitted to attend classes until tuition has been paid or payments have been satisfactorily arranged for with the business manager. A penalty of \$2.00 will be charged all students whose enrollment is not completed by the last day of the registration period. In certain laboratory courses where materials are consumed, and in certain courses in music, education, and engineering, additional fees are charged as indicated after the course descriptions.

A fee of \$6.00 is charged for each semester hour of instruction in excess of the normal schedule of fifteen semester hours, exclusive of physical education, hygiene, and extracurricular courses.

A carrying charge of ten per cent will be charged on the unpaid balance on all contracts not paid in full at the opening of the school term.

Graduation will not be permitted nor will certificates of credits earned be given in the case of any student who has not fully met all college obligations.

### Full-Time Students

(Students carrying eleven or more semester hours of work)

*Tuition and Regular Fees*—Payable each semester:

Tuition:

11 semester hours . . . . .	\$103.00
12 to 15 semester hours . . . . .	112.00
Each additional semester hour . . . . .	6.00
Student Activities Fee . . . . .	5.00
Health Fee . . . . .	3.00
Athletic Fee . . . . .	5.00
Library Fee . . . . .	2.00
Guidance Fee . . . . .	1.00
Records and Report Fee . . . . .	10.00
Laboratory Fees (See Courses)	
Breakage Fee (Chemistry and Physics) . . . . .	3.00

NOTE—It is understood that any or all exceptions to the payment of fees shall be determined by the business manager.

YOUNGSTOWN COLLEGE

*Special Fees*—Payable each semester:

Gymnasium and Hygiene .....	\$ 5.00
Hygiene Fee (When taken without gymnasium) .....	2.50

*Full-Time Music Students*

(12 to 15 semester hours) .....	\$200.00
Each additional semester hour .....	6.00

This charge covers tuition, all regular fees (except record and report fee, laboratory fees, and breakage fees), use of practice rooms, two private lessons per week in the major music subject, and one private lesson per week in the minor music subject.

The full-time music fee does not include the rental of musical instruments.

**Part-Time Students**

(Students carrying less than eleven semester hours of work)

*Tuition*—Payable each semester:

1 semester hour .....	\$ 10.00
2 semester hours .....	20.00
3 semester hours .....	30.00
4 semester hours .....	40.00
5 semester hours .....	49.00
6 semester hours .....	58.00
7 semester hours .....	67.00
8 semester hours .....	76.00
9 semester hours .....	85.00
10 semester hours .....	94.00

*Student Fees*

Student Fee—For students carrying 6 to 10

semester hours inclusive .....

\$3.00

This fee covers library, activity, and athletic fees. Students carrying less than six semester hours are not required to pay this fee but may secure the privileges by its payment. The payment of this fee admits the student to all social functions of the college sponsored by the student council; it also entitles him to a library card, to receive the college paper, the Jambar, and gives him a reduced rate on the college year book, the Neon.

Records and Report Fee .....

\$2.50-\$7.50

(This fee varies in proportion to the load carried.)

NOTE—It is understood that any or all exceptions to the payment of fees shall be determined by the business manager.

## FEES AND EXPENSES

### School of Law

The tuition for each quarter is \$25.00 per subject. A student fee of \$3.00 is charged each fall and winter quarter.

Students who elect to pay their tuition in installments shall make a down payment of at least one-third of the total at the time of enrolling and shall arrange a satisfactory schedule of payments on the balance with the business manager. A ten per cent carrying charge will be assessed on the balance after the initial payment has been made. Failure to comply with the above will necessitate the suspension of the student from classes.

No student will be permitted to enroll for a new quarter until all previous tuition has been paid in full.

### Tuition Rates—Music Faculty

	Semester of Eighteen Weeks	
	One Half-hour Lesson per week	Two Half-hour Lessons per week
<i>Brass</i>		
Raymond H. Dehnbostel (trumpet)	\$36.00	\$72.00
(French horn)	36.00	72.00
John W. Remick (trombone)	36.00	72.00
(tuba)	36.00	72.00
<i>Organ</i>		
Samuel S. Badal	45.00	90.00
Henry V. Stearns	45.00	90.00
<i>Percussion</i>		
Myron J. Wisler	36.00	72.00
<i>Piano</i>		
Samuel S. Badal	36.00	72.00
Stanley L. Davis	36.00	72.00
Mary E. Fankhauser	45.00	90.00
Elizabeth Hrecz	27.00	54.00
Jacob Schmitt	45.00	90.00
Henry V. Stearns	45.00	90.00
James A. Tavolario	45.00	90.00
<i>Reeds</i>		
Oliver P. Cash	36.00	72.00
J. D. Cook	36.00	72.00

YOUNGSTOWN COLLEGE

*Strings*

Stanley L. Davis (violoncello) . . . . .	36.00	72.00
(contrabass) . . . . .	36.00	72.00
Alvin Myerovich (violin) . . . . .	45.00	90.00
(viola) . . . . .	45.00	90.00

*Voice*

Kathryn T. Guarnieri . . . . .	45.00	90.00
Albert H. Holzhausen . . . . .	45.00	90.00
Leah MacDonald McIlroy . . . . .	45.00	90.00

**Special Fees**

*Matriculation Fee*—A fee of \$5.00 is charged all new full-time students (once only) to cover the cost of registration and must accompany application for admission.

*Late Registration Fee*—A fee of \$2.00 is charged all persons registering after the last day of the registration period.

*Change of Registration Fee*—A fee of \$2.00 is charged all persons changing their registration except when done at the request of the administration.

*Reinstatement Fee*—A student suspended from classes for any reason will be charged a \$2.00 fee upon readmission to classes.

*Fees for Irregular Examinations*—When a student requests an examination at other than the regularly scheduled period, a fee of \$2.00 for final examinations and \$1.00 for all other examinations is charged at the discretion of the instructor, except in case of illness when the student must present a letter from his family physician.

*Graduation Fee*—A fee of \$7.00 is charged all persons receiving a baccalaureate degree or a diploma if the application for graduation form is filed with the dean of the college before the beginning of the fall semester preceding graduation; the fee is \$10.00 if the application is submitted during the fall semester preceding graduation, \$15.00 if the application is submitted before April 1 preceding graduation, and \$20.00 if submitted before May 1 preceding graduation. No application for graduation will be accepted after May 1, and the amount of the fee is determined by the date when this application is received by the dean. The fee includes cap and gown rental and may be paid at any time before the candidate receives his diploma. These fees apply to both the August and June graduates.

*Transcript of Credits*—One transcript will be furnished free of charge. A fee of \$1.00 is charged for each additional transcript.

*Student Lockers*—The college provides lockers to all full-time students without charge. The student, however, is expected to make a deposit of seventy-five cents, which fee is refunded less a small handling charge. All personal effects must be removed from lockers if the student withdraws from school or at the end of each semester. Two students are assigned to each locker. The college does not assume any responsibility for personal property.

### **Installment Tuition**

Students who elect to pay their tuition in installments shall make a down-payment of at least twenty-five per cent of their total tuition at the time of enrolling and shall make satisfactory arrangements with the business manager for the payment of the balance of their tuition before they will be permitted to attend classes. All installment contracts must be paid in full on or before the expiration of two-thirds of a school term.

Students electing the installment plan will be assessed a carrying charge of ten per cent on the unpaid balance after the initial payment. The minimum carrying charge is \$1.00.

Any student who fails to meet his installment payments as arranged will be suspended from classes until payment has been made. A fee of \$2.00 will be charged for reinstatement.

No student will be permitted to enroll for a new semester until all previous tuition has been paid in full.

### **Withdrawals and Refunds**

No student will be enrolled for less than a full semester. If a student must withdraw from a course or from the college on account of illness or other compelling cause, 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 will not be regarded as an official notice of withdrawal.

## YOUNGSTOWN COLLEGE

In case a student is permitted by the registrar to withdraw from the college, the tuition charge for the session, based upon the date of the official withdrawal, will be as follows:

<i>Length of Term</i>	16-19 Weeks Inc.	12-15 Weeks Inc.	9-11 Weeks Inc.	3-5 Weeks Inc.
One week or less . . . . .	20%	20%	25%	50%
Between one and two weeks . .	20%	40%	50%	100%
Between two and three weeks .	40%	60%	75%	100%
Between three and four weeks	60%	80%	100%	100%
Between four and five weeks .	80%	100%	100%	100%
Over five weeks . . . . .	100%	100%	100%	—

A student who registers and then withdraws before classes begin will be assessed the minimum charge above.

In case a course is cancelled by the college, the tuition will be refunded in full.

### Room and Board

The attractive facilities of Buechner Hall are available for women at the following rates: Single rooms, \$6.25 per week; double rooms, \$3.50 to \$4.50 per person per week. Each guest is required to purchase a non-transferable meal ticket good for seven days at a price of \$6.00 plus Ohio state sales tax. These rates are a matter of contract with Buechner Hall authorities and not with the college. The college cafeteria serves luncheons at reasonable rates.

### Self Help

The central location of the college campus makes it possible for many students to earn part or all of their expenses by working in nearby stores and industries. Part-time employment service to students is maintained by the office of public relations.

## SCHOLARSHIPS AND AWARDS

### Scholarships

*The Sharon Steel Corporation Scholarships*—Every year the Sharon Steel Corporation awards four college scholarships to sons and daughters of its employees who are interested in studying in the fields of engineering, metallurgy, or business administration. Such scholarships entitle those chosen to a four-year course at Youngstown College with all tuition, fees, text books, and supplies, not exceeding \$300 per year, paid for by Sharon Steel Corporation. Scholarships are awarded on the basis of academic achievement, character, personality, and participation in extracurricular activities in high school.

Two scholarships are awarded students who graduate from high school in Pennsylvania and whose parents are employed at the Sharon-Farrell plant; one scholarship is given a student who graduates from high school in Ohio and whose parent is employed at the Sharon-Farrell plant, The Niles Rolling Mill Company or Brainard Steel Division; and one is given a student whose parent is employed at the Lowellville Plant.

In addition to the scholarship awards, Sharon Steel offers the four winners part-time and vacation employment during their four years at Youngstown College.

*The Youngstown College Student Scholarship Fund*—This fund is sponsored and financed by a group of prominent business and professional men of Youngstown for the purpose of aiding worthy students without regard to race, color, creed, or national origin. Assistance may be in the form of a scholarship or loan, and recipients are selected on the basis of need and scholarship.

### Awards

*The Youngstown Vindicator Awards for Scholarship*—The Youngstown Vindicator gives seven cash awards yearly amounting to \$1000.

A cash award of \$250 is given annually to the best all-round student, based on four years of academic achievement and extracurricular activity.



## YOUNGSTOWN COLLEGE

Cash awards of \$150 to the student ranking first, and \$100 to the student ranking second, in the respective fields of English and the humanities are given yearly. These awards are based on four years of study.

Cash awards of \$150 to the student ranking first, and \$100 to the student ranking second in the social science sequence courses are given annually. These awards are based on the results of comprehensive examinations given at the end of the second year in college.

*The Chi Omega Alumnae Award* — The Youngstown Chapter of the Chi Omega Alumnae gives an annual cash award to the woman student in Youngstown College who ranks highest in the field of social science.

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

### Honors

*The Engineers Award*—This is an annual award given to the outstanding engineering student of Youngstown College by the Mahoning Valley Chapter of the Ohio Society of Professional and Registered Engineers, Tri-County Section. The award is based on personality and outstanding academic achievement over a period of four years.

*The Sigma Tau Delta Honorary English Fraternity Award* —The English medal is awarded annually by the Sigma Tau Delta Fraternity to the outstanding freshman student in English composition.

# The College of Arts and Sciences

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## ADMISSION AND REGISTRATION

### General Requirements for Admission

Graduates of a first grade high school or an accredited secondary school may be admitted to Youngstown College upon presentation of a satisfactory official transcript of their high school credits, and all candidates for admission to the college are expected to furnish evidence of good character.

The filing of a formal application on blanks furnished by the college is required. This application accompanied by an official statement of high school credits should be made as soon as possible after graduation from high school.

All new students are required to take general examinations for guidance purposes shortly before the beginning of each semester. Students showing low results in these examinations and those who are in the lowest third of their high school class may be refused admittance, but if admitted they will be placed on probation until they have demonstrated their ability to do college work of a satisfactory quality.

High school graduates who are deficient in any of the following specific requirements must arrange to make up the deficiency before the beginning of the sophomore year. Deficiencies in foreign language and laboratory science may be made up by taking appropriate courses in college without credit toward a degree. One semester of work in college is equivalent to one year in high school.

**Requirements for Admission to Courses Leading to the Degrees of Bachelor of Arts and Bachelor of Science**

Students working for the degrees of Bachelor of Arts or Bachelor of Science are required to present the following high school credits:

English .....	3 units
Algebra .....	1 unit
Geometry .....	1 unit
United States History and Civics .....	1 unit
Laboratory Science .....	1 unit
Foreign Language (in one language) .....	2 units
Acceptable Electives .....	7 units

**Requirements for Admission to Courses Leading to the Degree of Bachelor of Engineering**

Students working for the degree of Bachelor of Engineering will meet the same entrance requirements as those who are working for the degree of Bachelor of Arts except that no foreign language is required, one and one-half units of algebra is required, and acceptable electives must be increased to eight and one-half units.

All students enrolling in the School of Engineering will be required to pass a comprehensive examination in the field of high school mathematics. Persons failing these examinations will be required to repeat their high school mathematics. At the beginning of Algebra 101, four weeks will be devoted to an intensive review of high school mathematics, after which time a placement examination will be given to determine whether the student should continue with Algebra 101 or enroll in high school mathematics. This procedure will be followed for all majors in mathematics and physics.

**Requirements for Admission to Courses Leading to the Degree of Bachelor of Music**

Students entering The Dana School of Music may become candidates for the degree of Bachelor of Music. Such students must present the following high school credits:

English .....	3 units
Foreign Language (in one language) .....	2 units
Mathematics .....	1 unit
Science or History .....	1 unit
Acceptable Electives .....	9 units

## ADMISSION AND REGISTRATION

In addition to the above requirements, candidates must satisfy the faculty concerning their musical fitness to enter the course leading to the degree of Bachelor of Music.

### Requirements for Admission to Courses Leading to the Degrees of Bachelor of Science in Business Administration and Bachelor of Science in Education

English	3 units
Mathematics	1 unit
United States History and Civics	1 unit
Science	1 unit
Acceptable Electives	10 units

### Requirements for Admission to the Pre-Law Course

Entrance requirements for the pre-law course are identical with those for courses leading to the degree of Bachelor of Arts.

### Admission from Other Colleges

Students applying for permission to transfer from other colleges are required to present a complete transcript of all high school and college work previously taken. The applicant must also present a letter of honorable dismissal from the college last attended, and in no case will he be accepted if he is not eligible to return to his former institution.

### Special Students

In a few cases students who are not high school graduates, but who because of maturity seem able to pursue college work, may be admitted as special students. The credits of such students will not be accepted toward a degree.

### Registration

Students are expected to register in person for the work of each session on or before the date fixed for registration. Only under exceptional circumstances will students be permitted to register after the close of the registration period. A fee of \$2.00 will be charged all students who register after the final registration date. No reduction in tuition or fees will be granted when late entrance is permitted by the registrar.

The office of the registrar is located on the first floor of the main college building and is open from 8:30 a. m. to 5:00 p. m. and from 6:30 p. m. to 8:30 p. m. every week day except Saturday when it is closed at noon.

## REQUIREMENTS FOR DEGREES

### General Requirements for All Degrees

#### *Application*

Application for a degree must be filed with the dean of the college not later than the first day of the fall semester two semesters preceding graduation.

#### *Residence Requirement*

For all degrees and certificates it is required that the last 30 semester hours\* of work be done in residence at Youngstown College. A student must have a point average of not less than 1.00 to be eligible for a degree. See page 56.

#### *Major and Minor Requirements*

Each student is required to include in the semester hours needed for graduation, a major and at least one minor.

A major consists of a minimum of thirty semester hours of work of 200 level and above in one department. A combined major such as social science, requires a total of forty-five semester hours including one hundred level courses.

A minor consists of fifteen semester hours of work of 200 level and above in one department.

It is the duty of the head of the major department to determine the minimum requirements for the major and minor and to see that they are met. He may require the student to do more than the minimum if in his opinion the extra work is needed.

The major and minor work must in all cases meet the approval of the head of the department in which the major work is taken; and a point average of 1.5 or better must be secured in all major courses numbered 200 or above.

A student planning his work should as early as possible consult the head of the department in which he expects to major. It is desirable that the major work be planned beginning with

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\*A semester hour of credit represents three hours of work each week throughout the semester. This work may be recitation, lecture, laboratory, preparation, or a combination of these.

## REQUIREMENTS FOR DEGREES

the freshman year, and it is essential in some departments that this planning occur not later than the beginning of the sophomore year.

### *Upper Division Requirements*

Courses are numbered with reference to their advancement. At least 60 semester hours must be taken in courses numbered 200 or above, of which at least 40 semester hours must be numbered 300 or above.

### **Additional Requirements for Each Degree**

#### *The Degree of Bachelor of Arts*

The degree of Bachelor of Arts will be granted to students who have received credit for 125 semester hours of work, have met the major, minor, and upper division requirements, and the course requirements which follow:

English . . . . . Satisfactory proficiency (11 hours)

The head of the department of English is the judge of this proficiency. Ordinarily, he will grant a certificate to those who have completed with grades of C or higher, 6 hours of English composition, 3 hours of literature, and 2 hours of speech.

Foreign Language . . . A reading knowledge (12 hours)

A reading knowledge is defined as the equivalent of what a student should know after two years of successful college study. A certificate indicating that the student has fulfilled this requirement must be obtained from the head of the department of foreign languages.

Laboratory Science . . . . . 8 hours

One year of continuous work is required in one laboratory science.

Mathematics or Science (Laboratory or  
Non-Laboratory) . . . . . 3 hours

Social Science 101, 102, 201, and 202 . . . . . 12 hours

Psychology, Philosophy, or Bible . . . . . 6 hours

Orientation . . . . . 1 hour

Physical Education and Hygiene . . . . . 4 hours

*The Degree of Bachelor of Engineering*

The degree of Bachelor of Engineering will be granted to students who have satisfactorily completed any of the engineering curriculums outlined in the Curriculums section of this catalog.

A candidate for the degree of Bachelor of Engineering must have completed a minimum of 30 semester hours in non-science subjects.

*The Combined Course Leading to the Degrees  
of Bachelor of Arts and Bachelor of Laws*

Those who have completed in the College of Arts and Sciences work totaling at least 95 credit hours including all other requirements for the degree of Bachelor of Arts will be granted the degree of Bachelor of Arts on the further satisfactory completion of two years of regular work in the law school. The student may satisfy his major requirement by utilizing the 32 semester hours of credit acquired in the law school toward a combined major in social science, or by completing a major of 30 semester hours in some department of the College of Arts and Sciences. By this arrangement students are enabled to secure the arts degree after three years of work in the college followed by two years of work in the law school. The degree of Bachelor of Laws will be granted after the completion of three additional years of work in the law school. For the required course of study for the degree of Bachelor of Laws, see curriculum under the section School of Law.

*The Degree of Bachelor of Music*

In order to receive the degree of Bachelor of Music a student must satisfactorily complete the curriculum on page 74 with a point average of not less than 1.00, and comply with the following requirements:

## REQUIREMENTS FOR DEGREES

English . . . . . Satisfactory Proficiency (11 hours)

The head of the department of English is the judge of this proficiency. Ordinarily, he will grant a certificate to those who have completed with grades of C or higher, 6 hours of English composition and 4 hours of speech.

Social Science 101, 102, 201, and 202 . . . . . 12 hours

Electives outside the music department . . . . . 10 hours

Music . . . . . 78-82 hours

Physical Education (Eurhythmics) and Hygiene . . . . . 4 hours

Orientation . . . . . 1 hour

For specific course requirements, see the music curriculum, page 74.

### *The Degree of Bachelor of Science*

To meet special needs of this community and to prepare students with a scientific background for various occupations, curriculums leading to the degree of Bachelor of Science have been set up with majors in the field of physical and biological sciences. These courses also offer preparation for outstanding students who expect to do advanced work in science.

In order that sufficient specialization may be obtained without too great a reduction in the amount of cultural work, these courses require a minimum of 136 semester hours. They require, therefore, more than the usual four years (eight semesters) for completion. By attending summer sessions all the courses, except that in nursing, can be completed in four years.

Candidates for the degree of Bachelor of Science with a major in the fields of physical and biological sciences must satisfy the following requirements in addition to the major work required by the departments concerned:

English . . . . . Satisfactory Proficiency (8 hours)

The head of the department of English is the judge of this proficiency. Ordinarily, he will grant a certificate to those who have completed with grades of C or higher, 6 hours of English composition and 2 hours of speech.

\*Foreign Language . . . . . A reading knowledge of scientific French or German

A reading knowledge is defined as the equivalent of what a student should know after two years of successful college study. A certificate in writing that the student has fulfilled this requirement should be obtained from the head of the department of modern languages.

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\*Cooperative nursing students are not required to take language.



YOUNGSTOWN COLLEGE

Social Science 101, 102, 201, and 202	12 hours
Physical Education and Hygiene	4 hours
Orientation	1 hour

*The Degree of  
Bachelor of Science in Business Administration*

The degree of Bachelor of Science in Business Administration will be granted to students who have received credit for 125 semester hours of work, who have majors in accounting, general business, advertising and merchandising, or secretarial studies, who have minors in related fields, have met the upper division requirements, and the course requirements which follow:

English . . . . . Satisfactory proficiency (11 hours)

The head of the department of English is the judge of this proficiency. Ordinarily, he will grant a certificate to those who have completed with grades of C or higher, 6 hours of English composition, 3 hours of literature, and 2 hours of speech.

Laboratory or Non-Laboratory Science	8 or 9 hours
Social Science 101, 102, 201, and 202	12 hours
Psychology	6 hours
Business Organization 101, Economics 104, Accounting 201-202	12 hours
Orientation	1 hour
Physical Education and Hygiene	4 hours

*The Degree of Bachelor of Science in Education*

The degree of Bachelor of Science in Education will be granted to students who have received credit for 125 semester hours of work, have met the major, minor, and upper division requirements, and the course requirements which follow:

English . . . . . Satisfactory proficiency (11 hours)

The head of the department of English is the judge of this proficiency. Ordinarily, he will grant a certificate to those who have completed with grades of C or higher, 6 hours of English composition, 3 hours of literature, and 2 hours of speech.

General or Biological Science	8-9 hours
Social Science 101, 102, 201, and 202	12 hours
Psychology	6 hours
Education	15 hours
Orientation	1 hour
Physical Education and Hygiene	4 hours

## REQUIREMENTS FOR DEGREES

### Requirements for the Title of Associate in Business Administration

The title of Associate in Business Administration will be granted to students having a total of 60 semester hours of academic work, with a point average of not less than 1.00 and including English Composition 101-102, Business Law 201 and 303, Social Science 101, Business Organization 101, and in addition, at least 30 hours of work acceptable as a major in either accounting or business administration.

The title of Associate in Business Administration will be granted to students who complete the two-year secretarial training course which consists of the first two years of the four-year curriculum in secretarial training outlined under the Curricula section of this catalog.

### Courses to Meet Special Requirements

All states have issued detailed programs of courses that must be pursued in order to secure licenses to teach; medical colleges have laid down specific requirements for pre-medical work; and many law schools, graduate schools, and other technical institutions have issued more or less mandatory recommendations for those who seek admission. Prospective teachers, pre-medical students, pre-law students, and all others wishing to enter professional schools or to pursue technological work of any kind should, therefore, consult the dean at the earliest possible time for advice. Such special needs can usually be met within the degree requirements of Youngstown College, but in many cases the proper selection of courses must begin in the freshman year.

## GENERAL REGULATIONS

### Schedule of Courses

Before the beginning of each semester students make out their schedules of courses under the supervision of their faculty advisers. Fifteen or sixteen academic\* hours is considered the normal load. Students who wish to carry loads in excess of this limit or whose curriculum requires more than sixteen hours a semester must submit a request approved by the appropriate dean at the time of registration. After registration a reduction may be made by the deans in the schedules of students whose previous records are low.

Any student who wishes to make a change in his schedule of classes after registration must fill out a change-of-registration form and have it signed by the instructors concerned and his adviser, after which it must be approved by the registrar. A mark of failure will be recorded for a course dropped without this procedure. Ordinarily, a student who drops a course after the first six weeks of the semester will receive a grade of F.

### Upper and Lower Division

For better regulation of the choice of courses the college is divided into the Upper Division, consisting of the senior and junior classes, and the Lower Division, consisting of the sophomore and freshman classes. Courses in the Lower Division are numbered below 300, and those in the Upper Division are numbered 300 and above.

Freshman students are not permitted to take a course in the Upper Division except by approval of the dean. Senior students taking courses numbered lower than 200 will have their credit for those courses reduced by one-third.

The class rank of a student is determined as follows: A student who has completed from 29 to 60 semester hours of credit is classified as a sophomore; a student who has 61 to 93 semester hours of credit is classified as a junior, and a student who has from 94 to 125 semester hours of credit with a scholastic point average of at least 1.00 is classified as a senior.

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\*The non-academic courses are orientation and required courses in hygiene and physical education.

## GENERAL REGULATIONS

Every sophomore is required to take comprehensive examinations. The fee for these examinations is \$1.00 if paid in advance.

### Chapel and Assembly

In alternate weeks are held a chapel meeting of a religious, but non-sectarian, nature and an assembly of a non-religious character. All students not specifically excused are required to attend these meetings.

### Attendance

By action of the faculty there may be a reduction of the number of academic credits earned toward graduation during any semester in the cases of students who are irregular in attendance at chapel, assembly, or classes.

Any student who is absent from a regular or final examination will be required, at the discretion of the instructor, to obtain from the dean written permission to take the examination, and to pay a fee of \$1.00 for a regular examination and \$2.00 for a final examination.

### Grading System

Grades for work done are recorded as follows: A, excellent; B, good; C, average; D, poor but passing; F, failure.

The distribution of grades follows in general the "Normal Curve."

E indicates incomplete work for the semester and automatically becomes a failure if not removed within 60 days.

Inc. indicates incomplete work for the semester and automatically becomes a withdrawal from the course unless completed.

Aud. indicates an auditor who has taken a course without credit.

## YOUNGSTOWN COLLEGE

Scholastic points given for each semester hour of work completed are as follows: A, 3 points; B, 2 points; C, 1 point; D, no point; F, minus 1 point. The student's scholastic standing is indicated by what is known as the point index which is found by dividing the total number of points earned by the number of credit hours completed with a passing grade. Thus a student who had completed 16 semester hours with passing grades and had earned 24 points would have a point index of 1.50.

### Grade Requirements

A student must have a point index of not less than 1.00 to be eligible for any degree.

Any student who while a freshman has a cumulative scholastic point index of less than .50, or while a sophomore has a cumulative scholastic point index of less than .75, or while a junior has a cumulative point index of less than 1.00 will be placed on probation and will not be readmitted the following semester unless his point index is raised to those minimums by the end of the probationary semester.

Any student who at the end of a semester has received a grade of F in half or more than half of the total semester hours for which he is registered will not be readmitted for the following semester.

## COLLEGE ACTIVITIES

The college aims to foster student participation in various extracurricular activities, such as athletics, debating, dramatics, and music. However, since the scholastic standing of the student must always take precedence over the extracurricular activities, the administration deems it wise to limit the participation in other activities to students whose point index for scholastic standing is as high as that required for their class as stated on pages 55-56.

### Student Council

The student body of Youngstown College is represented in all affairs pertaining to it by the Student Council, organized under a constitution and recognized by the administration. The council is composed of members of each social fraternity and of non-fraternity students. A faculty representative is chosen by the administration to act as an adviser to the group.

### Honor Point System

The Honor Point System of Youngstown College was initiated by the Student Council and after some changes was unanimously adopted by the faculty with the end in view of recognizing not only scholastic attainments but extracurricular activities as well. Students attaining 30 honor points are eligible to be placed on the honor roll. Each year the three graduating students who have earned the largest number of points will receive a pearl-studded pin with the letters "Y.C.," the official emblem of the college.

Eligibility to the honor roll is based on points made in both scholastic and extracurricular activities, and no student is considered eligible for a pin who has not achieved the majority of his points in scholarship. A list of the activities for which points are allowed with the number of points allowed for each activity may be found in the student handbook.

### Athletics

The physical development of the student is promoted by means of courses in physical education, intramural activities, and intercollegiate competition.

The purpose of physical education and intramural activities is to enlist and hold the interest of the entire student body in active participation in games of skill and pleasure. Stress is placed upon those games that can be played after the student leaves college, such as volleyball, handball, table tennis, basketball, tennis, swimming, and golf. For those students who excel in athletics, intercollegiate competition in basketball, football, baseball, tennis, and golf is provided.

#### **Dramatics and Debate**

Dramatics and speech organizations cooperate with the department of English to produce several student plays during the college year and to promote and participate in intercollegiate debate and speech projects. One of the organizations, Alpha Psi Omega, is a national fraternity; the Speech Society and the Mimes Dramatic Fraternity are local in nature. The work in dramatics is under the supervision of the director of The Youngstown Players, and the facilities of the Playhouse are utilized for the courses in dramatics.

Each year the dramatic and musical societies combine their efforts to produce one or more operas.

#### **Musical Organizations**

Various musical activities are encouraged and supported by the college. Frequent recitals during the year provide an opportunity for training in public performance which is invaluable to the young musician.

The Concert Band is composed of men and women students who make a study of various types of band literature. The band gives at least one concert a semester.

The Laboratory Band is designed for students of the college who need additional training to qualify for the Concert Band.

The Marching Band functions only during the football season and is open to all students of the college who can qualify.

The Mixed Chorus is a group of men and women chosen for their vocal and musical ability. Any student of the college who can qualify is encouraged to enroll. The chorus gives public performances throughout the year.

The Symphony Orchestra was organized to provide an opportunity for musical growth and development for all stu-

dents who are interested. The orchestra provides music for many public occasions.

The Opera Ensemble is open to students in the college whose musical ability entitles them to sing solo parts or to participate in the chorus. At least one opera a year is studied and presented.

The A Cappella Choir is a group of students selected for their exceptional vocal and musical ability. Students are admitted to this ensemble only through auditions.

### Student Publications

The Neon is the College Annual published by students elected to the Neon staff. The editors are usually seniors, but the other offices are filled by lower classmen. This publication gives students training in copy, layout, and similar work. Experience is gained in advertising, financing, and other phases of practical management.

The Jambar is a biweekly college newspaper, published by a staff chosen from the student body. Students interested in journalism can secure opportunities to serve on the staff to gain experience in this field. The paper is supported partly by the student activities fund and partly by advertising. The Jambar has for some years been rated among the best in its field by the Associated Collegiate Press.

A Student Handbook is published at the beginning of each college year for the new students. Its purpose is to inform the newcomer of college activities and traditions.

### Professional and Honorary Fraternities

Delta Epsilon is a local scholastic honorary fraternity founded for the purpose of raising the academic standards of the college, and of recognizing the efforts of upper division students whose grades average B or better. The Dean's List gives similar recognition to lower division students.

Sigma Tau Delta is a national English professional society. The Youngstown Psi Gamma chapter was authorized in 1933. Only English majors and minors with at least a B average can become members.

Alpha Psi Omega is a national honorary dramatic fraternity, the local chapter of which was established in 1939. It gives recognition to those who have excelled on the college stage.



Alpha Nu Chapter of Sigma Alpha Iota is a national honorary professional women's music fraternity.

Phi Epsilon is a local honorary chemistry fraternity. When founded it was for the better students from all the sciences, but has since restricted its membership to chemistry majors.

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

Alpha Tau Gamma is a local honorary accounting fraternity.

Sigma Pi is an honorary botany fraternity.

Delta Iota is an honorary music fraternity.

### Social Fraternities and Sororities

All social fraternities and sororities at Youngstown College are local with the exception of Alpha Iota, Kappa Sigma Kappa, and Sigma Kappa Phi. The Panhellenic Council supervises the relations of fraternities among themselves and with outside groups. A list of the fraternities and sororities of the college follows:

Alpha Iota	Omega Kappa Upsilon
Alpha Theta Delta	Phi Gamma
Delta Chi Epsilon	Phi Lambda Delta
Eta Delta Sigma	Phi Sigma Epsilon
Gamma Sigma	Sigma Delta Beta
Kappa Alphi Psi	Sigma Kappa Phi
Kappa Sigma Kappa	Sigma Sigma
Nu Sigma Rho	Tau Kappa Nu

### Other College Organizations

American Veterans Committee	International Relations Club
Art Club	League of Prospective High School Teachers
Dana Music Forum	Mimes Dramatic Fraternity
Elementary Teachers Professional Club	Newman Club
Gessner Law Club	Religion in Life Club
Indepenguins	Speech Society
Intercollegiate Zionist Federation of America	Studio Club
	Varsity Club
	Women's Athletic Association

## CURRICULUMS

Where specific courses are recommended for a major, they are often enumerated under the departmental heading in the section Courses of Instruction, beginning on page 78. Approval of all schedules, however, must be obtained by the student from his departmental adviser.

The following curriculums have been set up for certain fields where a definite sequence of courses is necessary and where there are a number of specific requirements outside of the major department.

### ACCOUNTING

See curriculum on page 62.

### ART

For Art Education curriculum, see page 65.

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

First Year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Philosophy .....	3
Social Science 101 and 102 .....	6	Psychology .....	3
Modern Language .....	6	Art 203, 204 Drawing and Painting ..	6
Art 113-114 History .....	6	Engl. 115 and 116 Speech .....	4
Art 110, 111 Color and Design .....	6	Social Science 201 and 202 .....	6
Orientation .....	1	Modern Language .....	6
Hygiene .....	2	Physical Education .....	1
Physical Education .....	1	Art Electives (200 or above) .....	6
	34		35
<b>Third Year</b>		<b>Fourth Year</b>	
Hist. 311 Greece .....	3	Art 305 History and Appreciation—	
Hist. 312 Rome .....	3	Italian Renaissance .....	3
Art 301, 302 Theory of Color and		Art 306 History and Appreciation	
Design .....	6	—Modern .....	3
Art 303, 304 Drawing and Painting ..	6	Engl. 219, 220 Play Production .....	4
Literature Electives .....	6	*Mathematics or Science .....	3
Laboratory Science .....	8	Elective (Upper division) .....	17
	32		30

\*Photography is suggested.

### BIOLOGY

See Biology, pages 82-84.

# YOUNGSTOWN COLLEGE

## BUSINESS ADMINISTRATION

### Accounting

#### Required Curriculum Leading to the Degree of Bachelor of Science in Business Administration with a Major in Accounting

All prerequisites for courses in accounting must be passed with a grade of C or better before a student will be admitted to an advanced course.

First Year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Engl. 115 and 116 Speech .....	4
Social Science 101 and 102 .....	6	Engl. 251 Modern American .....	3
Bus. Org. 101 Principles of Business	3	Social Science 201 and 202 .....	6
Econ. 104 Geography .....	3	Bus. Org. 201 and 303 Business Law	6
*Non-Laboratory Science .....	6	Bus. Org. 224 Marketing .....	3
Acctg. 201-202 Elementary .....	6	*Non-Laboratory Science .....	3
Hygiene .....	2	Acctg. 301-302 Intermediate .....	6
Orientation .....	1	Physical Education .....	1
Physical Education .....	1		32
	34		
Third Year		Fourth Year	
Psych. 201 General .....	3	Acctg. 401-402 Advanced .....	6
Psych. 301 Applied .....	3	Acctg. 403-404 Taxes .....	6
Acctg. 308-309 Cost .....	6	**Acctg. 409-410 Auditing .....	6
Bus. Org. 322 Credits and Collections	3	**Acctg. 411, 412 C.P.A. Quiz .....	6
**Bus. Org. 327-328 Advertising .....	6	Bus. Org. 315 Corporation Finance ..	3
Econ. 303 Financial Organization .....	3	Econ. 401 Labor Problems .....	3
Econ. 304 Public Finance .....	3		30
Econ. 305 Statistics .....	3		
	30		

\*Eight hours of laboratory science may be substituted for nine hours of non-laboratory science.

\*\*These courses are electives, but other suggested electives are: Business Organization 204, 205, 206, 210, 301, 311-312, 325, 329-330, 401, 411-412; Secretarial Studies 207; Philosophy 220; Engineering 306, 308; or any other course with the approval of the adviser and the head of the department.

Note: A "B" average in accounting is necessary to carry two accounting courses the following year.

### General Business Administration

#### Required Curriculum Leading to the Degree of Bachelor of Science in Business Administration with a Major in General Business Administration

First Year	Hrs.	Second Year	Hrs.
Engl. 115 and 116 Speech .....	4	Acctg. 201-202 Elementary .....	6
Engl. 101-102 Composition .....	6	Social Science 201 and 202 .....	6
Social Science 101 and 102 .....	6	Bus. Org. 201 and 303 Business Law	6
*Non-Laboratory Science .....	6	*Non-Laboratory Science .....	3
Bus. Org. 101 Principles of Business	3	Bus. Org. 224 Marketing .....	3
Econ. 104 Geography .....	3	Bus. Org. 205 Transportation .....	3
Hygiene .....	2	Engl. 251 Modern American .....	3
Orientation .....	1	Bus. Org. 210 Public Relations .....	3
Physical Education .....	1	Physical Education .....	1
	32		34

# CURRICULUMS

Third Year	Hrs.	Fourth Year	Hrs.
Acctg. 308-309 Cost .....	6	Bus. Org. 311-312 Merchandising ....	6
Psych. 201 General .....	3	Bus. Org. 322 Credits and Collections	3
Psych. 301 Applied .....	3	Econ. 401 Labor Problems .....	3
Bus. Org. 325 Salesmanship .....	3	Econ. 404 Personnel Management ...	3
Bus. Org. 327-328 Advertising .....	6	Engin. 306 Industrial Organization ..	2
Econ. 303 Financial Organization ...	3	**Acctg. 403-404 Taxes .....	6
Econ. 304 Public Finance .....	3	Electives .....	7
Econ. 305 Statistics .....	3		
	30		30

\*Eight hours of laboratory science may be substituted for nine hours of non-laboratory science.

\*\*These courses are electives, but other suggested electives are: Business Organization 204, 206, 301, 315, 329-330, 401, 411-412; Philosophy 220; Secretarial Studies 207; English 313; Economics 301, 302, 402; Engineering 308; or any other course with the approval of the adviser and the head of the department.

## Merchandising and Advertising

### Required Curriculum Leading to the Degree of Bachelor of Science in Business Administration with a Major in Merchandising and Advertising

First year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Social Science 201 and 202 .....	6
Social Science 101 and 102 .....	6	Acctg. 201-202 Elementary .....	6
Bus. Org. 101 Principles of Business	3	Bus. Org. 205 Transportation .....	3
Econ. 104 Geography .....	3	Bus. Org. 210 Public Relations .....	3
Engl. 115 and 116 Speech .....	4	Bus. Org. 224 Marketing .....	3
*Non-Laboratory Science .....	6	Psych. 201 General .....	3
Hygiene .....	2	Psych. 301 Applied .....	3
Orientation .....	1	*Non-Laboratory Science .....	3
Physical Education .....	1	Engl. 251 Modern American .....	3
	32	Physical Education .....	1

#### Third Year

Bus. Org. 201 and 303 Business Law	6
Bus. Org. 311-312 Merchandising ....	6
Bus. Org. 325 Salesmanship .....	3
Bus. Org. 327-328 Advertising .....	6
Econ. 303 Financial Organization ...	3
Econ. 304 Public Finance .....	3
Econ. 305 Statistics .....	3
	30

#### Fourth Year

##### Specializing in Merchandising

Bus. Org. 322 Credits and Collections	3
Econ. 401 Labor Problems .....	3
Econ. 404 Personnel Management ...	3
Bus. Org. 409-410 Merchandising ...	6
**Electives .....	15
	30

##### Specializing in Advertising

Bus. Org. 322 Credits and Collections	3
Bus. Org. 329, 330 Copy .....	6
Bus. Org. 401 Advertising Problems	3
Bus. Org. 411-412 Direct Advertising	6
Econ. 404 Personnel Management ...	3
**Electives .....	9
	30

\*Eight hours of laboratory science may be substituted for nine hours of non-laboratory science.

\*\*These courses are electives, but other suggested electives are: Art 105-106, 107, 110-111, 211, 212, 216; Business Organization 204, 206, 315; Economics 301, 302, 402; Engineering 306, 308; Philosophy 220, 305, 306, or any other course with the approval of the adviser and head of the department.

Note: Advertising specialists should take Art 105-106.

For requirements leading to the Title of Associate in Business Administration, see page 53, and consult with your departmental adviser.

# YOUNGSTOWN COLLEGE

## CHEMISTRY

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

First Year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Math. 209-210 Calculus I and II .....	10
Math. 101-102 College Algebra .....	6	Chem. 205 Qualitative Analysis .....	4
Social Science 101 and 102 .....	6	Chem. 206, 207, and 208 Quantitative Analysis .....	8
Math. 103 Trigonometry .....	2	Social Science 201 and 202 .....	6
Math. 114 Analytic Geometry .....	2	Engl. 115 Speech .....	2
Chem. 109-110 or 111-112 General .....	10 or 8	Ger. 211-212 Chemical or Physics 201 and 202 General 6 or 10	1
Biology or French .....	8 or 6	Physical Education .....	45-41
Orientation .....	1		
Hygiene .....	2		
Physical Education .....	1		
	44-40		
Third Year		Fourth Year	
Chem. 301, 302 Organic .....	6	Chem. 307 Chemical Literature .....	2
Chem. 303, 304 Organic Laboratory .	4	Chem. 311-312 Physical .....	6
Physics 201 and 202 General or Ger. 211-212 Chemical .....	10 or 6	Chem. 319-320 Physical Laboratory .	4
Chem. 401 Advanced Quantitative ...	3	Chem. 419 Advanced Inorganic .....	2
Chem. 404 Organic Analysis .....	4	Chem. 421 Advanced Organic .....	2
Elective (Non-science) .....	6	Chem. 408 History of Chemistry .....	1
Elective .....	6	Elective .....	17
	39-35		34

The degree of Bachelor of Arts with a major in chemistry may be taken but this degree is not recommended for those who wish to make chemistry a profession.

### Metallurgy

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

This curriculum is designed not only for the student who is seeking a Bachelor of Science degree with a major in metallurgy, but also for the student who desires a less extensive technical course in metallurgy.

First Year	Hrs.	Second Year	Hrs.
Math. 101-102 College Algebra .....	6	Chem. 205 Qualitative Analysis .....	4
Math. 103 Trigonometry .....	2	Chem. 206 and 207 Quantitative Analysis .....	5
Math. 114 Analytic Geometry .....	2	Engl. 115 Speech .....	2
Engl. 101-102 Composition .....	6	Engin. 251, 252 General Metallurgy ..	6
Chem. 109-110 or 111-112 General .....	10 or 8	Social Science 201 and 202 .....	6
Social Science 101 and 102 .....	6	Physics 201 and 202 General .....	10
Engin. 101 and 102 Engineering Drawing .....	6	Math. 209-210 Calculus I and II .....	10
Orientation .....	1	Physical Education .....	1
Physical Education .....	1		44
Hygiene .....	2		
	42-40		
First Year—Summer		Second Year—Summer	
*Chem. 205 Qualitative Analysis .....	4	Chem. 256 Physical Testing .....	2
*Engin. 255 Metallographic Technique	2		
Third Year		Fourth Year	
Chem. 311-312 Physical .....	6	Engin. 451, 452 Metallography .....	6
Engin. 324 Analytical Me- chanics—Statics .....	3	Physics 317 Thermodynamics .....	4
Engin. 325 Analytical Me- chanics—Dynamics .....	3	Chem. 455 Physical Testing .....	2
Engin. 343, 344 Physical Metallurgy ..	6	Engin. 326 Strength of Materials .....	4
Engin. 342 Metallurgical Analysis ..	3	Elective .....	20
Engin. 201-202 Report Writing .....	4		86
Elective (Non-science) .....	4		
Elective .....	4		
	33		

## CURRICULUMS

\*A student who does not wish to complete degree requirements with a major in metallurgy but who wishes to secure technical knowledge which will be of value to him on a metallurgy job, may take general chemistry the first year followed by qualitative analysis and metallographic technique in the summer. The second year he would take general metallurgy and the following summer physical testing. A year each of mathematics and physics would also be very desirable.

The metallurgy major will not take metallographic technique or physical testing as listed for summer work, as this work is covered elsewhere in his program. Many of the subjects needed to meet degree requirements may be taken during the summer. The metallurgy major should acquire a reading knowledge of a foreign language. This also may be taken during the summer months.

### DRAMATICS

See English, page 102.

### ECONOMICS

See Economics, page 90.

### EDUCATION

Requirements for teachers' certificates are determined by the Ohio State Department of Education and are, therefore, subject to change. Courses are offered leading to the degree of Bachelor of Science in Education with majors in art education, business education, elementary education, kindergarten-primary education, music education, nursing education, physical education, and secondary education. Curriculums for these courses follow.

#### Art Education

#### Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Art Education

First Year	Hrs.	Second Year	Hrs.
Educ. 101 Introduction .....	2	*Art 106 Advertising .....	3
Art 110, 111 Color and Design .....	6	Art 203, 209 Pottery and Modeling ..	6
Art 101 Mechanical Drawing .....	3	Psych. 201 General .....	3
Art 105 Advertising .....	3	Psych. 202 Educational .....	3
Engl. 101-102 Composition .....	6	Art 203, 204 Drawing and Painting ..	6
Social Science 101 and 102 .....	6	General Science 121 and 122 .....	6
Engl. 115 or 116 Speech .....	2	Social Science 201 and 202 .....	6
Orientation .....	1	Physical Education .....	1
Hygiene .....	2		34
Physical Education .....	1		
	32		
<b>Third Year</b>			
Educ. 301 Principles of Teaching ....	3	Educ. 404A Supervised Student	
Educ. 304 Classroom Management ...	3	Teaching .....	6
Art 113-114 History and Appreciation—General .....	6	Art 309 Jewelry and Metal Work ...	3
Art 211, 212 Color and Design .....	6	Art 322, 323 Crafts .....	6
Art 303, 304 Drawing and Painting ..	6	Art 305 History and Appreciation—Italian Renaissance .....	3
Art 321 Teaching of Art in the Elementary School .....	2	Art 306 History and Appreciation—Modern .....	3
Art 332 Teaching of Art in the Secondary School .....	2	Engl. 203 or 204 English Literature or Engl. 205 or 206 American Literature .....	3
General Science 223 .....	3	Electives (Upper division) .....	4
	31		28

\*Electives

# YOUNGSTOWN COLLEGE

## Business Education Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Business Education

First Year	Hrs.	Second Year	Hrs.
Sec. St. 100 and 101 Typewriting . . . . .	4	Sec. St. 104-105-106 Bookkeeping or	
Bus. Org. 101 Principles of Business . . . . .	3	Acctg. 201-202 Elementary . . . . .	6
Econ. 104 Economic Geography . . . . .	3	Sec. St. 207 Business English	
Social Science 101 and 102 . . . . .	6	and Correspondence . . . . .	3
Educ. 101 Introduction . . . . .	2	Sec. St. 215 Office Machines . . . . .	3
Engl. 101-102 Composition . . . . .	6	Social Science 201 and 202 . . . . .	6
Engl. 115 or 116 Speech . . . . .	2	General Science 121 and 122 . . . . .	6
Orientation . . . . .	1	Psych. 201 General . . . . .	3
Hygiene . . . . .	2	Psych. 202 Educational . . . . .	3
Physical Education . . . . .	1	Physical Education . . . . .	1
	30	Elective . . . . .	3
			34
<b>Third Year</b>		<b>Fourth Year</b>	
Acctg. 201-202 Elementary or		Sec. St. 301 and 302 Shorthand . . . . .	6
Acctg. 303-309 Cost . . . . .	6	Sec. St. 403 Office Practice . . . . .	3
Sec. St. 200 Shorthand . . . . .	4	Bus. Org. 323 Advertising Principles	
Bus. Org. 201 Business Law . . . . .	3	and Practice . . . . .	3
Bus. Org. 224 Marketing . . . . .	3	Educ. 400 Special Methods . . . . .	3
Bus. Org. 325 Salesmanship . . . . .	3	Educ. 404 Supervised Student	
Bus. Org. 327 Advertising Principles		Teaching . . . . .	6
and Practice . . . . .	3	Engl. 203, 204, 205, or 206 Literature . . . . .	3
Educ. 301 Principles of Teaching . . . . .	3	Elective (Upper division) . . . . .	9
Educ. 304 Classroom Management . . . . .	3		33
General Science 223 . . . . .	3		
	31		

## Elementary Education

### Required Curriculum Leading to the Degree of Bachelor of Science in Education with a Major in Elementary Education

First Year	Hrs.	Second Year	Hrs.
Art 121 Graphic Art . . . . .	2	Educ. 214 Children's Literature . . . . .	3
Econ. 104 Economic Geography . . . . .	3	Art 221 Design for Elementary	
Educ. 101 Introduction . . . . .	2	Teachers . . . . .	2
Engl. 101-102 Composition . . . . .	6	Social Science 201 and 202 . . . . .	6
Music 121 Introduction . . . . .	2	Music 221 Music Literature and	
Social Science 101 and 102 . . . . .	6	Appreciation . . . . .	2
Engl. 115 and 116 Speech . . . . .	4	Engl. 205, 206 American Literature . . . . .	6
Orientation . . . . .	1	Psych. 201 General . . . . .	3
Hygiene . . . . .	2	Psych. 202 Educational . . . . .	3
Physical Education . . . . .	1	General Science 121 and 122 . . . . .	6
	29	Physical Education . . . . .	1
			32
<b>Third Year</b>		<b>Fourth Year</b>	
Educ. 304 Classroom Management . . . . .	3	Educ. 401 Principles . . . . .	3
Educ. 305 Apprenticeship . . . . .	3	Educ. 405 Supervised Student	
Art 321 Teaching of Art in		Teaching . . . . .	9 or 6
the Elementary School . . . . .	2	Psych. 305 Child . . . . .	3
Educ. 312 Teaching of Handwriting . . . . .	1	Educ. 413 Teaching of Reading . . . . .	3
Educ. 313 Teaching of Skills . . . . .	3	Social Science (Upper division	
Educ. 314 Teaching of Content		elective) . . . . .	3
Subjects . . . . .	3	Elective (At least 3 hours in	
General Science 223 . . . . .	3	upper division) . . . . .	12-9
Geog. 102 Principles . . . . .	3		33-27
Music 321 Music Education . . . . .	2		
Art 322 Crafts . . . . .	3		
Phys. Educ. 321 Hygiene for			
Elementary Grades . . . . .	3		
Phys. Educ. 322 Health Activities			
for the Elementary Grades . . . . .	3		
Elective . . . . .	2		
	34		

In addition to the general examinations required of all freshman students and the comprehensive examinations required at the end of the sophomore year, all candidates must take comprehensive examinations covering the content and skills of the elementary school. Students who are found deficient in any of the elementary school subjects must take a review course without credit in all those subjects in which they are found deficient until they reach a satisfactory standard.

# CURRICULUMS

## Kindergarten—Primary Education

A Kindergarten-Primary Certificate may be earned by taking also Education 431 and 432 and by earning three semester hours of credit in student teaching in the kindergarten and three semester hours in a primary grade, preferably the first grade.

### Music Education

Required Curriculum for the Degrees of Bachelor of Music and Bachelor of Science in Education with a Major in Public School Music

First Year		Hrs.
Educ. 101 Introduction	2	
Engl. 101-102 Composition	6	
Engl. 115 Speech	2	
Music 103 Fundamentals of Music	3	
Music 103-104 Theory	8	
Applied Music—Major	4	
Applied Music—Minor	2	
Music Ensemble	2	
Orientation	1	
Hygiene	2	
Phys. Educ. 121, 122 Eurhythmics	1	
	33	
Second Year		
Instrumental	Hrs.	Vocal
Social Science 101 and 102	6	Social Science 101 and 102
Music 207-208 Survey of Music Literature	4	Music 203-204 Theory
Music 203-204 Theory	8	Applied Music—Major
Applied Music—Major	4	Applied Music—Minor
Applied Music—Minor	2	Music 207-208 Survey of Music Literature
Music Ensemble	2	Music Ensemble
Psych. 201 General	3	Psych. 201 General
Psych. 202 Educational	3	Psych. 202 Educational
Phys. Educ. 221, 222 Eurhythmics	1	Phys. Educ. 221, 222 Eurhythmics
	33	33
Third Year		
Social Science 201 and 202	6	Social Science 201 and 202
Engl. 203 or 204 English Literature or 205 or 206 American Literature	3	Educ. 301 Principles of Teaching
Educ. 301 Principles of Teaching	3	Educ. 304 Classroom Management
Educ. 304 Classroom Management	3	Music 301-302 Sight Singing and Ear Training
Music 301-302 Sight Singing and Ear Training	2	Applied Music—Major
Applied Music—Major	4	Applied Music—Minor
Applied Music—Minor	2	Music 331-332 Counterpoint
Music 225-226 Teaching of Woodwind Instruments—Class Method	2	Music 311-312 Class Voice Methods
Music 318 Teaching of Percussion Instruments—Class Method	1	Music 315-316 Music in the First Six Grades
Music Ensemble	2	Music 319-320 Conducting
Music 331-332 Counterpoint	4	Music Ensemble
Elective	2	
	34	34
Fourth Year		
General Science 121 and 122	6	General Science 121 and 122
Music 329-330 Teaching of Brass Instruments—Class Method	2	Music 403-404 Conducting and Score Reading
Music 325-326 Teaching of String Instruments—Class Method	2	Music 401-402 Sight Singing and Ear Training
Music 401-402 Sight Singing and Ear Training	2	Music 411-412 Teaching of Music in Junior and Senior High School
Music 305, 306 History of Music	6	Music 305, 306 History of Music
Music 327-328 Musical Form	4	Music 327-328 Musical Form
Music 319-320 Conducting	2	Applied Music—Major
Applied Music—Major	4	Applied Music—Minor
Applied Music—Minor	2	Music Ensemble
Music Ensemble	2	
	32	32



# YOUNGSTOWN COLLEGE

## Fifth Year

Instrumental	Hrs.	Vocal	Hrs.
General Science 224 .....	3	General Science 224 .....	3
Educ. 404 Student Teaching .....	6	Educ. 404 Student Teaching .....	6
Music 405-406 Conducting and Score Reading .....	2	Engl. 203 or 204 English Literature or 205 or 206 American Literature .....	3
Music 421-422 Composition .....	4	Music 421-422 Composition .....	4
Music 409-410 Orchestration .....	4	Music 409-410 Orchestration .....	4
Music 417 Instrumental Problems .....	2	Applied Music—Major .....	4
Music 419 Band Organization .....	2	Music Ensemble .....	2
Applied Music—Major .....	4	Recital .....	1
Music Ensemble .....	2	Non-Music Elective .....	3
Recital .....	1		30
	30		

## Required Curriculum for the Degree of Bachelor of Science in Education with a Major in Public School Music

### First Year

Educ. 101 Introduction .....	2
Engl. 101-102 Composition .....	6
Social Science 101 and 102 .....	6
Music 109 Fundamentals of Music .....	3
Music 103-104 Theory .....	8
Applied Music—Major .....	4
Music Ensemble .....	2
Orientation .....	1
Hygiene .....	2
Phys. Educ. 121, 122 Eurhythmics .....	1
	35

### Second Year

Instrumental	Vocal
Engl. 115 Speech .....	2
Music 203-204 Theory .....	8
Music 207-208 Survey of Music Literature .....	4
Music 225-226 Teaching of Woodwind Instruments—Class Method .....	2
Music 318 Teaching of Percussion Instruments—Class Method .....	1
Applied Music—Major .....	4
Applied Music—Minor .....	2
Music Ensemble .....	2
Psych. 201 General .....	3
Psych. 202 Educational .....	3
Phys. Educ. 221, 222 Eurhythmics .....	1
	32
	32

### Third Year

Educ. 301 Principles of Teaching .....	3	Educ. 301 Principles of Teaching .....	3
Educ. 304 Classroom Management .....	3	Educ. 304 Classroom Management .....	3
General Science 121 .....	6	General Science 121 .....	6
Social Science 201 and 202 .....	6	Social Science 201 and 202 .....	6
Music 301-302 Sight Singing and Ear Training .....	2	Music 301-302 Sight Singing and Ear Training .....	2
Music 325-326 Teaching of String Instruments—Class Method .....	2	Music 315-316 Music in the First Six Grades .....	4
Music 329-330 Teaching of Brass Instruments .....	2	Music 311-312 Class Voice Methods .....	2
Music 319-320 Conducting .....	2	Music 319-320 Conducting .....	2
Applied Music—Major .....	4	Applied Music—Major .....	4
Applied Music—Minor .....	2	Applied Music—Minor .....	2
Music Ensemble .....	2	Music Ensemble .....	2
	34		33

# CURRICULUMS

## Fourth Year

Instrumental	Hrs.	Vocal	Hrs.
General Science 224 .....	3	General Science 222 and 224 .....	6
Engl. 203 or 204 English Literature or 205 or 206 American Literature	3	Educ. 404 Student Teaching .....	6
Educ. 404 Student Teaching .....	6	Music 403-404 Instrumental Con- ducting and Score Reading .....	2
Music 409-410 Orchestration .....	4	Music 411-412 Teaching of Music in the Junior and Senior High School	4
Music 417 Instrumental Problems .....	2	Music 409-410 Orchestration .....	4
Music 419 Band Organization, Drum Majoring, and Field Technique .....	2	Applied Music—Major .....	4
Music 405-406 Conducting and Score Reading .....	2	Elective (Upper division) .....	3
Applied Music—Major .....	4	Recital .....	1
Elective (Upper division) .....	3		30
Recital .....	1		
	30		

## Required Curriculum for the Degree of Bachelor of Science in Education for Public School Nurses and Teachers of Health and Physical Education

First Year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Biol. 232 Anatomy and Physiology ..	5
Biol. 103 General Biology .....	3	Educ. 101 Introduction to Education ..	2
Biol. 123 General Zoology .....	5	Educ. 301 Principles .....	3
Chem. 109-110 or 111-112 General .....	10 or 8	Educ. 304 Classroom Administration, Organization, and Management ..	3
Social Science 101 and 102 .....	6	Psych. 201 General .....	3
Physical Education .....	1	Psych. 202 Educational .....	3
Hygiene .....	2	Phys. Educ. 303 Principles of Health and Physical Education .....	2
Orientation .....	1	Phys. Educ. 311-312 Theory and Practice of Physical Education Other than Athletics .....	4
	34-32	Phys. Educ. 400 Teaching of Health ..	2
		Social Science 201 and 202 .....	6
		Physical Education .....	1
			34

### Third, Fourth, and Fifth Years

Hospital course in an accredited hospital leading to the diploma in nursing and the Registered Nurse Certificate .....	45
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### Sixth Year

Engl. 203, 204, 205, or 206 English or American Literature .....	6
Educ. 404 Supervised Student Teaching .....	3
Phys. Educ. 403 Organization and Administration of Health and Physical Education .....	2
Phys. Educ. 411-412 Theory and Practice of Physical Education .....	4
Phys. Educ. 415 School Health Problems .....	2
	17

The degree major is in nursing and the degree minor is in education. Upper division course requirements are met by counting certain of the courses taken in the hospital school of nursing as upper division courses.

## Required Curriculum for the Degree of Bachelor of Science in Education for Public School Nurses

First Year	Hrs.	Second Year	Hrs.
Biol. 103 General Biology .....	3	Biol. 232 Anatomy and Physiology ..	5
Biol. 123 General Zoology .....	5	Educ. 101 Introduction .....	2
Chem. 109-110 or 111-112 General 10 or 8	8	Educ. 301 Principles of Teaching ..	3
Engl. 101-102 Composition .....	6	Educ. 304 Classroom Administration, Organization, and Management ..	3
Social Science 101 and 102 .....	6	Engl. 203, 204, 205, or 206 English or American Literature .....	6
Hygiene .....	2	Psych. 201 General .....	3
Orientation .....	1	Psych. 202 Educational .....	3
Physical Education .....	1	Social Science 201 and 202 .....	6
	34-32	Physical Education .....	1
			32

# YOUNGSTOWN COLLEGE

Third, Fourth, and Fifth Years	Hrs.
Hospital course in an accredited nursing school leading to the diploma in nursing and the Certificate of Registered Nurse .....	45

Sixth Year	Hrs.
Educ. 404 Student Teaching .....	3
Phys. Educ. 400 Teaching of Health .....	2
Phys. Educ. 415 School Health Problems .....	2
Elective (Upper division) .....	7-9
	14-16

The degree major is in nursing and there are degree minors in education and biological science. Upper division course requirements are met by counting certain of the courses in the hospital school of nursing as upper division courses.

## Secondary Education

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

First Year	Hrs.
Engl. 101-102 Composition .....	6
Foreign Language .....	6
Laboratory Science .....	8
Social Science 101 and 102 .....	6
Educ. 101 Introduction .....	2
Orientation .....	1
Hygiene .....	2
Physical Education .....	1
	32

Second Year	Hrs.
Psych. 201 General .....	3
Psych. 202 Educational .....	3
Engl. 115 and 116 Speech .....	4
Engl. 203 English Literature .....	3
Engl. 206 American Literature .....	3
Social Science 201 and 202 .....	6
Science or Mathematics .....	3
Physical Education .....	1
Elective .....	6
	32

Third Year	Hrs.
Educ. 301 Principles of Teaching ....	3
*Educ. 307 History .....	2
Educ. 304 Classroom Administration, Organization, and Management .....	3
*Psych. 306 Adolescent .....	3
*Educ. 306 Educational Measure- ment and Guidance .....	2
*Educ. 308 Educational Sociology .....	3
Electives .....	15-25
	31-41

Fourth Year	Hrs.
Educ. 400 Special Methods .....	2
Educ. 404A Supervised Student Teaching .....	6
*Educ. 401 Principles .....	3
Elective .....	19-22
	30-33

\*Electives

Students wishing to secure the degree of Bachelor of Science in Education should follow this curriculum with the exception that foreign language is not required and general science may be substituted for laboratory science and mathematics.

## ENGINEERING

Outline for the first year of all engineering curriculums.

### First Year

First Semester	Hrs.
Engl. 101 Composition .....	3
Math. 101 College Algebra .....	3
Math. 103 Trigonometry .....	2
Chem. 109 or 111 General .....	5-4
Engin. 101 Engineering Drawing ....	3
Social Science 101 .....	3
Orientation .....	1
Physical Education .....	1½
	20½-19½

Second Semester	Hrs.
Engl. 102 Composition .....	3
Math. 102 College Algebra .....	3
Math. 114 Analytic Geometry .....	2
Chem. 110 or 112 General .....	5-4
Engin. 102 Engineering Drawing ....	3
Social Science 102 .....	3
Hygiene .....	2
Physical Education .....	1
	21½-20½

# CURRICULUMS

## Electrical Engineering

### Required Curriculum Leading to the Degree of Bachelor of Engineering with a Major in Electrical Engineering

First Year—See page 70.

#### Second Year

First Semester	Hrs.	Second Semester	Hrs.
Math. 209 Calculus I .....	5	Math. 210 Calculus II .....	5
Physics 201 General .....	5	Physics 202 General .....	5
Engin. 203 Principles of Radio .....	3	Engin. 204 Principles of Radio .....	3
Bus. Org. 201 Business Law .....	3	Bus. Org. 303 Business Law .....	3
Econ. 305 Elementary Statistics .....	3	Engin. 324 Analytical Mechanics— Statics .....	3
Physical Education .....	1/2	Physical Education .....	1/2
	22 1/2		19 1/2

#### Third Year

Physics 317 Thermodynamics .....	4	Engin. 312 Electric Circuits .....	4
Physics 303 Electricity and Magnetism .....	3	Engin. 318 Heat Engineering .....	4
Math. 314 Calculus III .....	3	Engin. 328 Hydraulics .....	3
Engin. 325 Analytical Mechanics— Dynamics .....	3	Engin. 326 Strength of Materials .....	4
Engin. 311 Electric Circuits .....	4	Engin. 202 Report Writing .....	2
Engin. 201 Report Writing .....	2	Math. 315 Differential Equations .....	3
Engl. 115 Speech .....	2		20
	21		

#### Fourth Year

Engin. 415 Electron Dynamics .....	3	Engin. 416 Electronic Applications ..	3
Engin. 411 Direct Current Machinery ..	5	Engin. 413 Alternating Current Ap- paratus .....	5
Engin. 405 Turbines and Jets .....	4	Engin. 417 Electric Power Trans- mission .....	3
Math. 415 Advanced Differential Equations .....	3	Engl. 216 Public Speaking .....	2
Engl. 215 Public Speaking .....	2	Engin. 471 Thesis .....	2
Engin. 470 Thesis .....	2		15
	19		

## Industrial Engineering

### Required Curriculum Leading to the Degree of Bachelor of Engineering with a Major in Industrial Engineering

First Year—See page 70.

#### Second Year

First Semester	Hrs.	Second Semester	Hrs.
Math. 209 Calculus I .....	5	Math. 210 Calculus II .....	5
Physics 201 General .....	5	Physics 202 General .....	5
Bus. Org. 101 Principles of Business ..	3	Engl. 115 Speech .....	2
Bus. Org. 201 Business Law .....	3	Bus. Org. 303 Business Law .....	3
Econ. 305 Elementary Statistics .....	3	Engin. 324 Analytical Mechanics— Statics .....	3
Physical Education .....	1/2	Physical Education .....	1/2
	19 1/2		18 1/2

#### Third Year

Math. 314 Calculus III .....	3	Engin. 306 Industrial Organization ..	2
Chem. 205 Qualitative Analysis .....	4	Acctg. 305 Industrial Cost Accounting ..	3
Acctg. 205 Elementary Industrial Accounting .....	3	Engin. 314 Elements of Electrical Engineering .....	4
Engin. 313 Elements of Electrical Engineering .....	4	Engin. 202 Report Writing .....	2
Engin. 201 Report Writing .....	2	Engin. 309 Time Study and Formula Making .....	2
Engin. 308 Motion and Time Analysis .....	2	Engin. 326 Strength of Materials ..	4
Engin. 325 Analytical Mechanics— Dynamics .....	3		17
	21		

# YOUNGSTOWN COLLEGE

## Fourth Year

	Hrs.		Hrs.
Econ. 303 Financial Organization . . .	3	Bus. Org. 315 Corporation Finance . . .	3
Engin. 407 Iron Foundry—Theory and Practice . . . . .	3	Engin. 408 Steel Foundry—Theory and Practice . . . . .	3
Econ. 401 Labor Problems . . . . .	3	Engin. 318 Heat Engineering . . . . .	4
Physics 317 Thermodynamics . . . . .	4	Engin. 252 General Metallurgy . . . . .	3
Engin. 251 General Metallurgy . . . . .	3	Engl. 216 Public Speaking . . . . .	2
Engl. 215 Public Speaking . . . . .	2	Engin. 471 Thesis . . . . .	2
Engin. 470 Thesis . . . . .	2		17
	20		

## Mechanical Engineering

### Required Curriculum Leading to the Degree of Bachelor of Engineering with a Major in Mechanical Engineering

First Year—See page 70.

## Second Year

First Semester	Hrs.	Second Semester	Hrs.
Bus. Org. 201 Business Law . . . . .	3	Bus. Org. 303 Business Law . . . . .	3
Bus. Org. 101 Principles of Business	3	Engin. 324 Analytical Mechanics— Statics . . . . .	3
Engin. 251 General Metallurgy . . . . .	3	Engl. 115 Speech . . . . .	2
Math. 209 Calculus I . . . . .	5	Math. 210 Calculus II . . . . .	5
Physics 201 General . . . . .	5	Physics 202 General . . . . .	5
Physical Education . . . . .	1½	Physical Education . . . . .	1½
	19½		18½

## Third Year

Engin. 201 Report Writing . . . . .	2	Engin. 202 Report Writing . . . . .	2
Engin. 313 Elements of Electrical Engineering . . . . .	4	Engin. 301 Elementary Machine Design . . . . .	2
Engin. 325 Analytical Mechanics— Dynamics . . . . .	3	Engin. 314 Elements of Electrical Engineering . . . . .	4
Physics 317 Thermodynamics . . . . .	4	Engin. 318 Heat Engineering . . . . .	4
Math. 314 Calculus III . . . . .	3	Engin. 326 Strength of Materials . . . . .	4
Econ. 305 Elementary Statistics . . . . .	3	Engin. 328 Hydraulics . . . . .	3
	19	Math. 315 Differential Equations . . . . .	3
			22

## Fourth Year

Engin. 405 Turbines and Jets . . . . .	4	Engin. 406 Internal Combustion Engines . . . . .	4
Engin. 407 Iron Foundry—Theory and Practice . . . . .	3	Engin. 408 Steel Foundry—Theory and Practice . . . . .	3
Engin. 353 Fuels and Combustion . . . . .	3	Engin. 354 Fuels and Combustion . . . . .	3
Engin. 302 Elementary Machine Design . . . . .	2	Engin. 471 Thesis . . . . .	2
Engin. 470 Thesis . . . . .	2	Engl. 216 Public Speaking . . . . .	2
Math. 416 Advanced Differential Equations . . . . .	3		14
Engl. 215 Public Speaking . . . . .	2		
	19		

## Metallurgical Engineering

### Required Curriculum Leading to the Degree of Bachelor of Engineering with a Major in Metallurgical Engineering

First Year—See page 70.

## Second Year

First Semester	Hrs.	Second Semester	Hrs.
Chem. 205 Qualitative Analysis . . . . .	4	Chem. 207 Quantitative Analysis . . . . .	3
Chem. 206 Quantitative Analysis . . . . .	2	Chem. 208 Quantitative Analysis . . . . .	3
Engin. 251 General Metallurgy . . . . .	3	Engin. 252 General Metallurgy . . . . .	3
Physics 201 General . . . . .	5	Physics 202 General . . . . .	5
Math. 209 Calculus I . . . . .	5	Math. 210 Calculus II . . . . .	5
Bus. Org. 201 Business Law . . . . .	3	Engl. 115 Speech . . . . .	2
Physical Education . . . . .	½	Physical Education . . . . .	½
	22½		21½

## CURRICULUMS

### Third Year

First Semester	Hrs.	Second Semester	Hrs.
Physics 317 Thermodynamics	4	Engin. 324 Analytical Mechanics— Statics	3
Chem. 311 Physical	3	Chem. 312 Physical	3
Econ. 305 Elementary Statistics	3	Engin. 374 Rolling Mill Design	3
Engin. 373 Rolling Mill Design	3	Engin. 354 Fuels and Combustion	3
Engin. 353 Fuels and Combustion	3	Math. 315 Differential Equations	3
Math. 314 Calculus III	3	Bus. Org. 303 Business Law	3
Engin. 201 Report Writing	2	Engin. 202 Report Writing	2
	21		20

### Fourth Year

Engin. 325 Analytical Mechanics— Dynamics	3	Engin. 408 Steel Foundry—Theory and Practice	3
Engin. 407 Iron Foundry—Theory and Practice	3	Engin. 452 Metallography	3
Engin. 451 Metallography	3	Engin. 326 Strength of Materials	4
Engin. 355 Metallurgical Calcula- tions	3	Engin. 314 Elements of Electrical Engineering	4
Engin. 313 Elements of Electrical Engineering	4	Engl. 216 Public Speaking	2
Engl. 215 Public Speaking	2	Engin. 471 Thesis	2
Engin. 470 Thesis	2		18
	20		

### ENGLISH

See English, page 101.

### JOURNALISM

The student preparing for journalism should take a major in English, and should secure a broad education in the liberal arts courses with especial emphasis on the social sciences. For specific course suggestions, see your adviser.

### HISTORY

See History, page 108.

### LANGUAGES

See pages 89, 90, 104, 105, 106, 109, 123, 125.

### LAW

See School of Law, pages 137-144.

### MATHEMATICS

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

#### First Year

First Semester	Hrs.	Second Semester	Hrs.
Math. 101 College Algebra	3	Math. 102 College Algebra	3
Math. 103 Trigonometry	2	Math. 114 Analytic Geometry	2
Engl. 101 Composition	3	Chem. 110 or 112 General	5-4
Chem. 109 or 111 General	5-4	Engl. 102 Composition	3
Social Science 101	3	Social Science 102	3
Orientation	1	Hygiene	2
Physical Education	1½	Physical Education	1½
	17½-16½		18½-17½

# YOUNGSTOWN COLLEGE

## Second Year

First Semester	Hrs.	Second Semester	Hrs.
Math. 209 Calculus I .....	5	Math. 210 Calculus II .....	5
Physics 201 General .....	5	Physics 202 General .....	5
French or German .....	3	French or German .....	3
Social Science 201 .....	3	Social Science 202 .....	3
Engl. 115 .....	2	Physical Education .....	1½
Physical Education .....	1½		16½
	18½		

## Third Year

Math. 314 Calculus III .....	3	Math. 315 Differential Equations ....	3
Math. 311 Theory of Equations .....	3	Engin. 324 Analytical Mechanics— Statics .....	3
Physics 303 Electricity and Magnetism .....	3	Physics 322 Physical Optics and Advanced Light .....	3
French or German .....	3	French or German .....	3
Econ. 305 Elementary Statistics .....	3	Electives .....	6
	15		18

## Fourth Year

Math. 432 History of Mathematics ...	3	Math. 330 College Geometry .....	3
Math. 416 Advanced Differential Equations .....	3	Mathematics Thesis .....	3
Physics 317 Thermodynamics .....	3	Electives .....	12
Engin. 325 Analytical Mechanics— Dynamics .....	4		18
Mathematics Thesis .....	3		
	16		

## MUSIC

### Required Curriculum for the Degree of Bachelor of Music

First Year	Hrs.	Second Year	Hrs.
Social Science 101 and 102 .....	6	Social Science 201 and 202 .....	6
Engl. 101-102 Composition .....	6	Engl. 115 Speech .....	2
Music 109 Fundamentals of Music .....	3	Music 203-204 Theory .....	3
Music 103-104 Theory .....	8	Music 207-208 Survey of Music Literature .....	4
Applied Music—Major .....	4	Applied Music—Major .....	4
Applied Music—Minor .....	2	Applied Music—Minor .....	2
Music Ensemble .....	2	Music Ensemble .....	2
Hygiene .....	2	Phys. Educ. 221, 222 Eurhythmics ..	1
Orientation .....	1	Elective .....	3
Phys. Educ. 121, 122 Eurhythmics ..	1		32
	35		
		<b>Fourth Year</b>	
<b>Third Year</b>		Engl. 203 or 204 English Literature or 205 or 206 American Literature	3
Music 301-302 Sight Singing and Ear Training .....	2	Music 401-402 Sight Singing and Ear Training .....	2
Music 331-332 Strict Counterpoint ..	4	Music 421-422 Composition .....	4
Music 327-328 Musical Form .....	4	Music 409-410 Orchestration for High Schools .....	4
Music 305, 306 History .....	6	Music 403-404 Choral Conducting and Score Reading or 405-406 Instrumental .....	2
Applied Music—Major .....	4	Applied Music—Major .....	4
Applied Music—Minor .....	2	Applied Music—Minor .....	2
Music Ensemble .....	2	Music Ensemble .....	2
Music 319-320 Conducting .....	2	Music Elective .....	4
Elective .....	4	Elective (Upper division) .....	3
	30	Recital .....	1
			31

Voice majors should elect foreign languages as electives. For ensemble work, voice majors should select chorus, and instrumental majors, band or orchestra.

For Music Education curriculums, see pages 67-69.

For the Bachelor of Arts degree with a major in music, see page 132 for music and page 49 for requirements in other fields.

# CURRICULUMS

## PHILOSOPHY AND RELIGION

See Philosophy and Religion, page 113.

### PHYSICS

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

First Year		Second Semester	
First Semester	Hrs.		Hrs.
Chem. 109 or 111 General	5-4	Chem. 111 or 112 General	5-4
Engl. 101 Composition	3	Engl. 102 Composition	3
Math. 101 College Algebra	3	Math. 102 College Algebra	3
Math. 103 Trigonometry	2	Math. 114 Analytic Geometry	2
Social Science 101	3	Social Science 102	3
Orientation	1	Engl. 115 Speech	2
Physical Education	1½	Hygiene	2
	17½-16½	Physical Education	2
		<u>20½-19½</u>	
Second Year			
Math. 209 Calculus I	5	Math. 210 Calculus II	5
Physics 201 General	5	Physics 202 General	5
German or French	3	German or French	3
Chem. 205 Quantitative	4	Chem. 207 Quantitative	3
Chem. 206 Quantitative	2	Chem. 208 Quantitative	3
	<u>19</u>		<u>19</u>
Third Year			
Math. 314 Calculus III	3	Math. 315 Differential Equations	3
Physics 317 Thermodynamics	4	Physics 322 Physical Optics and Advanced Light	3
Physics 303 Electricity and Mag- netism	3	Engin. 324 Analytical Mechanics— Statics	3
Engin. 203 Principles of Radio	3	Engin. 204 Principles of Radio	3
German or French	3	German or French	3
Social Science 201	3	Social Science 202	3
	<u>19</u>		<u>18</u>
Fourth Year			
Math. 416 Advanced Differential Equations	3	Engin. 312 Electric Circuits	3
Engin. 415 Electron Dynamics	3	Chem. 312 Physical	3
Engin. 311 Electric Circuits	3	Physics 424 History of Physics	3
Engin. 311 Physical	3	Engin. 471 Thesis	2
Engin. 325 Analytical Mechanics— Dynamics	3	Elective	6
Engin. 470 Thesis	2		<u>17</u>
	<u>17</u>		

### PRE-MEDICAL AND ALLIED SCIENCES

Following are courses recommended for students who expect to enter schools of medicine, nursing, and allied sciences.

By arrangement with local schools of nursing, a combined course is offered in this field. Those who are already graduates of accredited schools of nursing may qualify for a bachelor's degree by completing the requirements for the degree sought.

For information concerning complete curriculums leading to the degree of Bachelor of Science with a major in health education and preparing for public school nursing, see page 69.



All pre-medical and allied science students should consult with the departmental adviser.

Pre-Medical Science

Suggested Pre-Medical, Pre-Dental, and Pre-Veterinary Curriculum for the Degree of Bachelor of Arts with a Major in Pre-Medical Science

The major in pre-medical science is a combination of at least forty-five hours in the fields of biology, chemistry, and physics, and will vary with the requirements of individual medical schools.

First Year	Hrs.	Second Year	Hrs.
Biol. 103 General .....	3	Biol. 233 Vertebrate Embryology ....	4
Biol. 123 Zoology .....	5	Chem. 205 Qualitative Analysis .....	4
Chem. 109-110 or 111-112		Chem. 206 and 207 Quantitative	
General .....	10 or 8	Analysis .....	5
Engl. 101-102 Composition .....	6	Math. 101-102 College Algebra .....	6
Social Science 101 and 102 .....	6	Math. 103 Trigonometry .....	2
Orientation .....	1	Foreign Language .....	6
Hygiene .....	2	Physical Education .....	1
Physical Education .....	1	Social Science 201 and 202 .....	5
	34-32		34
<b>Third Year</b>		<b>Fourth Year</b>	
Biol. 309 and 310 Vertebrate		English (Upper division) .....	3
Anatomy .....	5	Biol. 301 Bacteriology .....	5
Biol. 313 Vertebrate Histology .....	4	Biol. 410 Human Physiology .....	5
Chem. 301, 302 Organic .....	6	Elective (Upper division) .....	19
Physics 201 and 202 General .....	10		32
Foreign Language .....	6		
Engl. 115 Speech .....	2		
	33		

Cooperative Nursing

Courses leading to a bachelor's degree with a major in nursing are offered in cooperation with various nursing schools. The student takes two and one-half years of work in Youngstown College and then a two and one-half year course in an accredited school of nursing, followed by sufficient work in the college to satisfy the requirements for the degree sought. The major, minor, group, and upper level requirements must be met.

A total of 45 semester hours credit will be allowed for the hospital work. The hospital work may also be offered to meet the major requirements, all needed 200 level course requirements, and 15 hours of the 300 level course requirements.

Suggested Curriculum for the Degree of Bachelor of Science with a Major in Nursing

First Year	Hrs.	Second Year	Hrs.
Biol. 103 General .....	3	Biol. 232 Anatomy and Physiology ..	5
Biol. 123 General Zoology .....	5	Biol. 231 Microbiology .....	2
Chem. 109-110 or 111-112		Social Science 201 and 202 .....	6
General .....	10 or 8	Psych. 201 General .....	3
Engl. 101-102 Composition .....	6	*Psych. 202 Educational .....	3
Social Science 101 and 102 .....	6	Educ. 301 Principles of Teaching or	
Orientation .....	1	304 Classroom Management .....	3
Hygiene .....	2	Engl. 115 Speech .....	2
Physical Education .....	1	English (Upper division) .....	3
	34-32	Physical Education .....	1
		Elective (Upper division) .....	5 or 3
			33-31

## CURRICULUMS

During the following two and one-half years the student will take a nursing course in an accredited hospital leading to the diploma in nursing.

Upon presentation of a certificate of R. N., 45 semester hours will be granted toward a bachelor's degree, of which hours 17 will be credited as upper division hours.

Fifth Year	Hrs.
Nursing 403 Hospital Ward Management and Teaching .....	3
*Psych. 300 Social .....	3
*Psych. 305 Abnormal .....	3
**Elective (Upper division) .....	6
	15

\*Not required but strongly urged as the minor.

\*\*Three hours of this elective should include psychology if it is the minor.

### Pre-Medical Technology

For specific requirements in the two-year course in pre-medical technology, see the departmental adviser.

### PSYCHOLOGY

See Psychology, page 121.

### SECRETARIAL TRAINING

Suggested Curriculum Leading to the Degree of Bachelor of Science in  
Business Administration with a Major in Secretarial Studies

First Year	Hrs.	Second Year	Hrs.
Sec. St. 200 Shorthand .....	4	Sec. St. 303 Secretarial Dictation ...	2
Sec. St. 301 Shorthand .....	4	Sec. St. 201 Transcription .....	2
Sec. St. 100 and 101 Typewriting ...	4	Sec. St. 404 Filing and Indexing ...	1
Engl. 101-102 Composition .....	6	Sec. St. 304 Advanced Dictation and Transcription .....	2
Sec. St. 215 Office Machines .....	3	Sec. St. 403 Office Practice .....	3
Sec. St. 104-105 Bookkeeping .....	4	Sec. St. 109 Business Mathematics ..	2
Social Science 101 and 102 .....	6	Sec. St. 208 Commercial Law .....	3
Physical Education .....	1	Sec. St. 106 Bookkeeping .....	2
	32	Sec. St. 207 Business English and Correspondence .....	3
		Engl. 115 and 116 Speech .....	4
		Psychology 201 General .....	3
		Sec. St. 216 Office Machines or Elective .....	3
			30
Third Year		Fourth Year	
Bus. Org. 101 Principles of Business 3		Bus. Org. 224 Marketing .....	3
Econ. 104 Economic Geography .....	3	Bus. Org. 327-328 Advertising .....	6
Social Science 201 and 202 .....	6	Bus. Org. 325 Salesmanship .....	3
Science .....	8	Bus. Org. 322 Credits and Collections	3
Acctg. 201-202 Elementary .....	6	Mathematics .....	3
Elective (Upper division) .....	10	Elective (Upper division) .....	18
	36		36

The student who can stay in school only two years may receive the Title of Associate in Business Administration at the end of the second year.

### SOCIAL SCIENCE

See Social Science, page 124.

### SPEECH

See English, page 103.

## COURSES OF INSTRUCTION

The use of a hyphen between numbers, as 101-102, indicates that credit is not given toward graduation for the work of one semester until the work of the other semester is completed except when special permission is granted by the head of the department involved. The use of a comma between the semester numbers, as 105, 106, indicates that the course extends throughout the year, but that credit toward graduation is given for the work of either semester.

Courses numbered from 101 to 199 are freshman courses; from 201 to 299, sophomore; 301 and above are upper division courses.

### ACCOUNTING

Accounting courses offer a study along several correlated lines including bookkeeping; presentation, analyzation, and interpretation of financial data; cost analyzing; auditing, and taxes. They meet the general needs of the following students: those who wish to enter industry as private accountants; those who wish to prepare for certification by entering public C.P.A. firms for practical experience; those who wish to become cost analysts or general business executives, and those who wish to prepare themselves for teaching bookkeeping or accounting.

General accounting majors are required to take Accounting 201-202, 301-302, 308-309, 401-402, 403-404, and electives from upper division courses.

For accounting curriculum, see page 62.

201-202. ELEMENTARY ACCOUNTING—Includes the theory of balance sheets, operating accounts, and working papers. Particular attention is given to the use of books of original entry and to the special ledger accounts. Setting up accounts and adjusting and closing books at the close of the fiscal period are developed through the use of a practice set and problems. Required of all who expect to take more advanced courses.

*Three hours credit each semester.*

205. ELEMENTARY INDUSTRIAL ACCOUNTING—A concentrated course in accounting designed for engineering majors. Basic indoctrination in the theory of journals, ledgers, and financial statements. Gives an appreciation and understanding of the processes and executive uses of accounting.

*Three hours credit.*

## ACCOUNTING, ART

### Upper Division Courses

301-302. INTERMEDIATE ACCOUNTING—A study of financial statements, classification of real and nominal accounts, and special features pertaining to partnerships and corporations. Theoretical background of accounting principles and procedures with emphasis on profits, surplus, dividends, depreciation, funds, and reserves. Finally, an analysis of financial data and its importance in the conduct of the affairs of the various business enterprises. Prerequisite, Accounting 201-202.

*Three hours credit each semester.*

305. INDUSTRIAL COST ACCOUNTING—A concentrated course in the study of cost finding principles designed for engineering majors. The work covers appropriate problems and a practice set. The topics developed include the various cost systems, with explanation of material accounting, payroll records, and the distribution of overhead expenses. Special emphasis is placed on using cost data as a business control in administering the business enterprise. Prerequisite, Accounting 205.

*Three hours credit.*

308-309. COST ACCOUNTING—A study of the principles of cost finding for manufacturing accounts. The work covered includes appropriate problems and a set of cost accounting books. The topics developed include the threefold division of costing, with explanation of material accounting, payroll records, and the principles of recording and applying manufacturing expense. Special topics cover standard costs, estimating, and comparative costs. Prerequisite, Accounting 201-202.

*Three hours credit each semester.*

401-402. ADVANCED ACCOUNTING—The course covers such subjects as mergers, consolidations, sales, auditing, installment sales, estates, branches, foreign exchange, graphs, contractors' accounts, and internal check. Prerequisite, Accounting 301-302, 308-309.

*Three hours credit each semester.*

403-404. FEDERAL AND STATE TAXES—This course covers such state taxes as domestic franchise, sales, use, and unemployment taxes. The federal group covers income, gift, estate, and capital stock taxes. Problems and actual tax returns are worked out as laboratory material for drill in the theory. Prerequisite, Accounting 201-202.

*Three hours credit each semester.*

409-410. AUDITING—A study of the methods of auditing, stressing the verification of balance sheets and operating statements. Particular attention is given to the analysis and use of prepared statements. The practical side is developed through a series of cases and reports. Prerequisite, Accounting 201-202, 301-302, 308-309.

*Three hours credit each semester.*

411, 412. C. P. A. QUIZ—It is assumed that candidates for this course are familiar with principles of accounting and related subjects. All types of accounting and auditing problems will be solved and discussed from standpoints of theory and practice. Special emphasis is placed on accuracy and clearness of solutions of such problems as are encountered in C. P. A. examinations. Lectures, tests, problems. Prerequisites, Accounting 401-402, 409-410. (Offered on demand.)

*Three hours credit each semester.*

### ART

For art curriculums, see pages 61 and 65.

101. MECHANICAL DRAWING—This course is the same as the first part of Engineering 101, Elementary Engineering Drawing.

*Three hours credit.*

## YOUNGSTOWN COLLEGE

105, 106. ADVERTISING ART—Practice with different styles of lettering. Attention to layouts, emphasizing design and good color. Practical problems. Process in reproducing work, silk screen, linoleum block, monoprint, and drypoint. Current tendencies studied. *Three hours credit each semester.*

110, 111. COLOR AND DESIGN—Experiencing relations of color and shapes. Creating of design, stylizing natural elements to develop design motifs, abstract design emphasizing forceful, expressive shapes, application of design. Study of pattern construction. Costume design. Discussion and study of the development of historical styles. Application to craft problems. *Three hours credit each semester.*

113-114. HISTORY AND APPRECIATION OF ART—GENERAL—A survey of the history of architecture, sculpture, painting, and the minor arts from prehistoric periods to the present day, to prepare the student for analytical discrimination in his own experiences. Art appreciation. Lectures with lantern slides. Study of reproductions and of original collections in museums in this section. Notebooks. *Three hours credit each semester.*

121. GRAPHIC ART—Drawing and painting with different media, such as crayons, chalk, water color, show card paints, and oils, to insure a broad knowledge of materials and ease in handling. Friezes, wall panels, stage scenery, illustrations made to fill some need. Work by children shown and analyzed. A portfolio of fine works of art is collected by the student as an enrichment to his background. *Two hours credit.*

203, 204. DRAWING AND PAINTING—Principles of space division, understanding of the plastic means, line, plane, volume—light and dark, color and texture, and their relation to form and pattern. Experience with different media—pencil, charcoal, water color, opaque water color, pastel, and oil. Dealing with arrangements of still life, figure composition, life, landscape, and abstract forms to develop a sense of plastic organization. *Three hours credit each semester.*

206, 207. INTERIOR DECORATING—A study of period furniture, textiles, and accessories; making of color charts; learning textiles; making room plans and coloring them in the selected color chords. Visits to art galleries and to stores will be made to keep abreast with changing styles in furniture and fabrics. Prerequisites, Art 110, 111. *Three hours credit each semester.*

208, 209. POTTERY AND MODELING—Making of pottery shapes, coiling, hand-building, decoration, glazing. Consideration of sculptural form. Fashioning figures and heads. Mold-making and casting in clay and in plaster. Experience in bas-relief. *Three hours credit each semester.*

211, 212. COLOR AND DESIGN—Appreciation of design of higher order. Emphasis on fine relationships of tone, line, and color. Psychological theory of color. Color systems. New tendencies in pattern construction, interior decoration, and fashion design. Prerequisites, Art 110, 111. *Three hours credit each semester.*

215, 216. ADVERTISING ART—Study of modern layout practice and technique of rendering different media. Special work in silk screen, air brush, etching. Special assignments, book plates, trade marks, packaging, illustration, booklets. Rapid and fine execution of lettering. Prerequisites, Art 105, 106. *Three hours credit each semester.*

221. DESIGN (FOR ELEMENTARY TEACHERS)—Study of structural and decorative design. Making simple motifs and repeat patterns. Color study. Lettering as design. Application of design principles to textiles, pottery, metal, weaving, and the decoration of tin and glass objects. Children's design and craft work shown. *Two hours credit.*

## ART

### Upper Division Courses

301, 302. THEORY OF COLOR AND DESIGN—Study of the function of the several plastic means, line, plane, form, color, notan, and texture. Basic rules for the use of each to affect harmony. Experiencing the different properties of color by producing hue scales, value scales, chroma scales. Selection and use of hue chords, value chords, and chroma chords in major and minor keys. Study and use of proportionate measures in line and area. Dynamic symmetry. Analysis of masterpieces built on proportionate measures. Prerequisite, Art 110-111. *Three hours credit each semester.*

303, 304. DRAWING AND PAINTING—Study of the figure is emphasized. The student is encouraged to develop the power to see significantly rather than imitatively. Explorative methods encouraged. Figures in composition, landscape, and still life. Students may specialize. Prerequisites, Art 203, 204.

*Three or four hours credit each semester.*

305. HISTORY AND APPRECIATION OF ART—ITALIAN RENAISSANCE—After a short survey of Byzantine art, this course will consider in greater detail the work of the great figures in the major arts during the fourteenth, fifteenth, and sixteenth centuries of Italy, and their connection with the history and philosophy of the times. Assignments. Lectures with lantern slides. Study of reproductions and of original collections in museums in this section. Prerequisite, Art 113-114. *Three hours credit.*

306. HISTORY AND APPRECIATION OF ART—MODERN—A brief study of primitive art expressions influencing modern artists. A survey of the Renaissance in Europe, analyzing art works to clarify ideas as to the nature of creative art. Comparing Expressionistic, Cubistic, Abstract, Surrealistic, and other modern art expressions. The study of European and American art from the sixteenth century to the present. Prerequisites, Art 203, 204 or equivalent. *Three hours credit.*

309. JEWELRY AND METAL WORK—Students will be given experience in shaping copper bowls, plates, and trays, and in designing these objects by punching, etching, and engraving processes. Designing and studying jewelry design will accompany lessons in jewelry making. Lessons are planned to give experience in sawing, filing, piercing, soldering, stone-setting, repousse, modeling, engraving, and in applying the pin and catch. Students will study the properties of metals and through experience with these learn to respect the limitations of metals. Originality encouraged. Students will have choice of objects they wish to produce provided they work from simple processes to more complex. *Three hours credit.*

310, 311. ADVANCED MODELING—This course includes the completion of designs in a manner corresponding to practical studio work. Study of abstract volumes, creative design, and abstract design. Modern tendencies in pottery forms and figure work. Prerequisites, Art 208, 209. *Three hours credit each semester.*

321. TEACHING OF ART IN THE ELEMENTARY SCHOOL—Materials and methods. A study of the art needs of children at different age levels and the means of providing desirable art experiences. The contribution of art to the elementary course of study. Objectives and procedures evaluated from the standpoint of the growth of the child. Contact with children's work and working situations in the classroom. *Two hours credit.*

322, 323. CRAFTS—This course includes experience in many kinds of material used in elementary and high schools, starting with the simplest crafts. Many methods of using paper, cloth, wood, clay, metal, and plastics to contribute valuable channels for art experiences will be carried on. *Three hours credit each semester.*

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332. TEACHING OF ART IN THE SECONDARY SCHOOL—Students will investigate the values of art expression for secondary school boys and girls, and the courses best adapted to specific age levels. Art services for the school and community taking form in stage sets, murals, posters, and countless other forms will be considered. Familiarity with the best literature on the subject will be an important part of the course. *Two hours credit.*

403, 404. DRAWING AND PAINTING—Continuation of Art 303, 304. *Three hours credit each semester.*

### ASTRONOMY

101, 102. ASTRONOMY—A descriptive and non-mathematical study of the stars and the solar system. An analysis of the present theories of the universe and some observational sessions with telescope or field glass. *One and one-half hours credit each semester.*

### AVIATION

171. AVIATION—Offers 72 clock hours of ground instruction in meteorology, navigation, general servicing and operation of aircraft, and civil air regulations. *Three hours credit.*

### BIBLE

See Philosophy and Religion.

### BIOLOGY

Biology courses offer a survey along several correlated lines. They meet the needs of the following students: those who wish to obtain a general knowledge of the biological point of view; those who wish to prepare for graduate and research work in any of the special branches of biology; those who desire to prepare for teaching the biological sciences; and those who plan to enter professional fields such as medicine, nursing, pharmacy, forestry, horticulture, etc.

General biology majors are required to take Biology 103, 122, 123, 301, 321, 411, 412, and electives from upper division courses. Biological Chemistry 321 and 322 may be counted toward a biology major.

Pre-medical science students and cooperative nursing students should consult the special curriculums, pages 75-77, for requirements.

103. GENERAL BIOLOGY—A general survey of biological principles covering morphology and physiology of chromosomes, cells, and tissues as manifested in animals, bacteria, and green plants. Two three-hour laboratory-discussion periods per week. Fee, \$6.00. *Three hours credit.*

## BIOLOGY

120. PLANT TAXONOMY—A study and classification of the local flora of Northeastern Ohio. Two three-hour field trips or laboratory periods per week. *Three hours credit.*

121. PLANT TAXONOMY—The same as Biology 120 except it is limited to summer flora. *Three hours credit.*

122. GENERAL BOTANY—A comprehensive study of the morphology and physiology of higher plants, and an abbreviated survey of the classification of the entire plant kingdom. Two one-hour lectures and two three-hour laboratory periods each week. Prerequisite, C or better in Biology 103. Fee, \$6.00. *Five hours credit.*

123. GENERAL ZOOLOGY—A comprehensive study of the morphology and taxonomy of the invertebrates and the vertebrates. Two one-hour lectures and two three-hour laboratory periods each week. Prerequisite, C or better in Biology 103. Fee, \$8.50. *Five hours credit.*

231. MICROBIOLOGY—Fundamental principles and techniques in the culturing and classification of bacteria, yeast, and fungi. One one-hour lecture and one two-hour laboratory period each week plus special hours for the reading of results. Prerequisite, Biology 123. Fee, \$6.00. *Two hours credit.*

232. ANATOMY AND PHYSIOLOGY—A survey of the structures and functions of the human body. Three one-hour lectures and two two-hour laboratory periods each week. Prerequisite, Biology 123. Fee, \$6.00. *Five hours credit.*

233. VERTEBRATE EMBRYOLOGY—A study of germ cells, maturation, types of cleavage and gastrulation, and the development of the frog, chick, and mammal. Living material is used in demonstration. Two one-hour lectures and two two-hour laboratory periods per week. Prerequisite, C or better in Biology 123. Fee, \$6.00. *Four hours credit.*

### Upper Division Courses

301. BACTERIOLOGY—A general study of the fundamentals of bacteria and methods of handling and growing micro-organisms. Two one-hour lectures and two three-hour laboratory periods per week. Prerequisites, twelve semester hours credit in biology, a knowledge of the principles of organic chemistry, and the consent of the instructor. Fee, \$10.00. *Five hours credit.*

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 per week. Prerequisite, C or better in Biology 233. Fee, \$10.00. *Three hours credit.*

310. VERTEBRATE ANATOMY II—The anatomy of mammals based on the cat, with reference to Biology 309. Two two-hour correlated lectures and laboratory periods per week. Prerequisite, C or better in Biology 309. Fee, \$10.00. *Two hours credit.*

313. VERTEBRATE HISTOLOGY—The microscopic anatomy of mammalian tissue, including the preparation of tissues for study. Two one-hour lectures and two two-hour laboratory periods per week. Prerequisite, C or better in Biology 233. Fee, \$8.50. *Four hours credit.*

321. GENETICS—Principles of inheritance, organic evolution, and eugenics. Three one-hour lectures each week. (Students may enroll for special problems in genetics for two additional credit hours. Fee, \$6.00.) Prerequisite, Biology 122 or 123. No fee for lecture course only. *Three or five hours credit.*



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331. PHYTOMORPHOLOGY—Comparative anatomy and histology of the vascular plant. Two one-hour lectures and two two-hour laboratory periods per week. Prerequisite, C or better in Biology 122. Fee, \$6.00.  
*Four hours credit.*

410. HUMAN PHYSIOLOGY—A comprehensive study of the functions of the human body. Three one-hour lectures and one four-hour laboratory period each week. Prerequisite, C or better in Biology 309-310 and in Chemistry 301, 302. Fee, \$8.50.  
*Five hours credit.*

411. HISTORY OF BIOLOGY—By permission of the instructor. Available at all times.  
*Two hours credit.*

412. PROBLEMS IN BIOLOGY—Special biological problems which are possible with the materials and equipment available and for which the student is qualified. Examples: Stain technology, bioecology, experimental embryology, physiology, and plant taxonomy. Available at all times. Prerequisite, nine hours of biology and consent of the instructor. Fee, \$3.00 per credit hour.  
*One to three hours credit.*

### BUSINESS ADMINISTRATION

A major in business administration consists of 45 semester hours in the combined fields of accounting, business organization, and economics.

### BUSINESS ORGANIZATION

Business organization courses offer a study along several correlated lines including advertising, marketing, merchandising, salesmanship, transportation, and commercial law. They meet the needs of the following students: those interested in commercial advertising; those entering the marketing field whether in wholesaling or retailing; those who want a general background for preparation as junior executives in private business; and those interested in teaching in the field of business administration.

Students majoring in general business are required to take Business Organization 101, 201, 205, 210, 224, 303, 311-312, 322, 325, 327-328; Economics 104, 303, 304, 305, 401, 404; Accounting 201-202, 308-309, and electives from upper division courses. For general business curriculums, see pages 62-63.

Students majoring in merchandising and advertising are required to take Business Organization 101, 201, 205, 224, 303, 311-312, 315, 322, 325; Economics 104, 303, 304, 305, 404; Accounting 201-202, and electives from upper division courses. Students specializing in advertising are also required to

## BUSINESS ORGANIZATION

take Business Organization 329, 330, 401, 411-412, and it is recommended that students take Art 105-106. Students specializing in merchandising are required to take Business Organization 409-410 and Economics 401. For combined merchandising and advertising curriculum, see page 63.

101. PRINCIPLES OF BUSINESS—An introductory course in business administration which is designed to give the student information concerning the development of forms of business enterprises, management, relationship between employer and employee, credit, banking, and elementary accounting. *Three hours credit.*

201. BUSINESS LAW—This course is designed to give the student a practical working knowledge of contracts, agency, negotiable instruments, bailments, carriers, and sales. A study of legally binding agreements between persons, and their enforcement, including the making of a contract, the effect of fraud, duress, undue influence, etc. Prerequisites, Business Organization 101, English 101-102. *Three hours credit.*

204. RAIL TRANSPORTATION—Historical background of the economic growth and development of rail transportation with special emphasis on present problems of adjustment and transition brought about by post-war conditions. Federal regulations and rate control is also covered in this course. Prerequisite, Business Organization 101. *Three hours credit.*

205. FUNDAMENTALS OF TRANSPORTATION—This course deals with various special services, claim papers, transportation forms, routings, tracings, and other essentials of shipping. Prerequisite, Business Organization 101. *Three hours credit.*

206. RAILROAD TARIFFS—This course covers the construction and interpretation of railroad tariffs, and the application of and reason for rates and routes by rail, water, air, and express. Prerequisite, Business Organization 101. *Three hours credit.*

210. PUBLIC RELATIONS—A study of the problems of public relations approached primarily from the management point of view. Brief history of public relations, discussion of the media to be used, and the organization of public relations departments in stores, manufacturing concerns, and other types of business establishments. Attention will also be directed to the proper methods of writing the news story, the material for the house organ, and special items for other publications. Prerequisites, Business Organization 101, English 101-102. *Three hours credit.*

224. MARKETING—A general survey of the field of marketing. A study of marketing functions and policies and marketing institutions. Prerequisites, Social Science 101, Business Organization 101. *Three hours credit.*

### Upper Division Courses

301. AIR TRANSPORTATION—An orientation course in the field of air transportation with special emphasis on historical background and federal regulation, including a survey of current problems dealing with monopoly, expansion, and government subsidies. Prerequisites, Business Organization 101, Accounting 201-202. *Three hours credit.*

303. BUSINESS LAW—A study of the law of partnerships, corporations, property, bankruptcy, and insurance. The course covers wills, estates, and the relationship of debtor and creditor. Prerequisite, Business Organization 201. *Three hours credit.*

## YOUNGSTOWN COLLEGE

311-312. **MERCHANDISING**—This course deals with methods employed by retail organizations in distributing merchandise for profit; current problems and trends in retailing; store organization, management, and operations; buying methods and sources of supply; sales planning; salesmanship; sales promotion; merchandising arithmetic; warehousing; inventory methods; advertising; research and statistics; expense control; dollar and unit control, involving six month merchandising plans, purchase planning, model stocks, calculation of customer demand and reorder quantities, open-to-buy. Prerequisites, Business Organization 101, 224.

*Three hours credit each semester.*

315. **CORPORATION FINANCE**—A study of promotion of new industries, capital structure of corporations, evolution of a business, working capital, surplus, dividends, voting trusts, investment trusts, public utilities, cooperative plans, and reorganizations. Prerequisites, Business Organization 101, Accounting 201-202.

*Three hours credit.*

332. **CREDITS AND COLLECTIONS**—This course deals with credit instruments and classes of credits; also credit agencies, collection agencies, collections, collection methods, and the place of the credit man in business.

*Three hours credit.*

325. **SALESMANSHIP**—This course covers a knowledge of goods, study of customers and their wants, buying motives, planning a sale, attitudes of buyers, meeting objections, closing the sale, cultivation of personality, problems in sales management, sales organization, sales planning and research, and others.

*Three hours credit.*

327-328. **ADVERTISING PRINCIPLES AND PRACTICE**—A survey study of advertising as an instrument of modern business, including economics of advertising, advertising research, media, trademarks, campaigns. A discussion of copy writing, type, layout, methods, and the psychology of advertising. The second semester covers the study of the product, selection of media, determination of appeals to be made, space desired, and similar problems. Prerequisites, Business Organization 101, Sophomore standing or better.

*Three hours credit each semester.*

329, 330. **ADVERTISING COPY**—An advanced course stressing the practical application of the subjects covered in advertising principles. Writing of newspaper, magazine, direct-mail, and radio script copy is done in class. Advanced layout design is also presented comprehensively. Prerequisite, Business Organization 327-328.

*Three hours credit each semester.*

401. **ADVERTISING PROBLEMS**—This is a seminar course for advertising minors, stressing work in the field of their interest or anticipated work after graduation. The work will be conducted on the conference plan, with research paper required. In addition to library readings, the student will be expected to study his specialized field through first-hand contacts. Wherever possible he will be assigned to work in a local advertising concern of his special interest. Open to seniors only. Prerequisites, Business Organization 327-328, 329, 330.

*Three hours credit.*

409-410. **ADVANCED MERCHANDISING**—This course deals with the wholesaling media and factors affecting the retail distribution of goods to consumers, their advantages and disadvantages, and the various kinds of distributors in the flow of goods from producers to the eventual consumers in voluntary self-owned buying organizations, buying cooperatives, resident buying offices, central buying chain groups, mail order techniques, discount houses, etc. Prerequisites, Business Organization 224, 311-312.

*Three hours credit each semester.*

411-412. **DIRECT ADVERTISING**—This course covers the planning and preparation of the major forms of direct advertising. It includes the discussion and writing of sales letters, folders, leaflets, booklets, house magazines, etc. Multigraphing, mimeographing, printing, and engraving are also studied.

*Three hours credit each semester.*

## CHEMISTRY

Students who are studying for the degree of bachelor of science with a major in chemistry are required to take the following chemistry courses: 109 or 111, 110 or 112, 205, 206, 207, 208, 301, 302, 303, 304, 307, 311-312, 319-320, 404, 408, 419, 421, and three to six hours each in two of the following fields: advanced analysis, biochemistry, and metallurgy. Two years of mathematics including calculus, one year of physics, and a reading knowledge of scientific German are required. Further work in physics and a reading knowledge of French are also recommended. Students may obtain a degree of bachelor of arts in chemistry, but this degree is not recommended for those who wish to make chemistry a profession.

For chemistry curriculums, see pages 64-65.

109-110. GENERAL CHEMISTRY—A study of the fundamentals of general chemistry. Three lectures and recitations, four hours laboratory, including one discussion period each week. Prerequisite, two years of high school mathematics. For those who have not studied chemistry in high school. Fee, \$5.00 each semester. *Five hours credit each semester.*

111-112. GENERAL CHEMISTRY—A more advanced course in general chemistry for those who have had a satisfactory year's work in high school chemistry. Two lectures and recitations, four hours laboratory, including one discussion period each week. Prerequisite, two years of high school mathematics. Fee, \$5.00 each semester. *Four hours credit each semester.*

115-116. EVERYDAY CHEMISTRY—This course is intended for students who wish to take chemistry for its cultural value. Emphasis is placed on the chemistry of the things with which we have daily contact, as chemistry in the home, the parks and fields, and everyday business and industrial life. Only the simpler mathematical phases are involved. Not accepted for credit toward a major in chemistry and not recommended for other science or engineering majors. Three lectures and recitations, and one three-hour laboratory period each week. Fee, \$5.00 each semester. *Four hours credit each semester.*

119. CHEMICAL PROBLEMS—A course in the mathematical aspects of first year chemistry. Considerable work in supervision of problem solving is done. One three hour discussion and laboratory period each week. Prerequisite or concurrent, first year chemistry. Fee, \$5.00. *One hour credit.*

205. QUALITATIVE ANALYSIS—An extension of the study of atomic structure, valence, periodic system, and chemical equilibrium and their applications to reactions, properties of elements and compounds, and analytical procedures. The laboratory work consists of the systematic analysis of cations, anions, and salts on a semi-micro basis. Spot testing where applicable, is used only for confirmatory work. Two hours lecture and recitation and two three-hour laboratory periods each week. Prerequisite, Chemistry 109-110 or 111-112. Fee, \$5.00. *Four hours credit.*

206. QUANTITATIVE ANALYSIS—The course covers the fundamental principles of quantitative analysis and the calculations involved: accurate technique in using the analytical balance; calibration of weights and of volumetric apparatus; accurate analysis of materials of known composition. One hour lecture and recitation and one three-hour laboratory period each week. Prerequisite or concurrent, Chemistry 205. Fee, \$5.00. *Two hours credit.*

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207. QUANTITATIVE ANALYSIS—A course in volumetric analysis stressing the analysis of unknowns. Water analysis is used as a vehicle for colorimetric work. One hour lecture and recitation and two three-hour laboratory periods per week. Prerequisite, Chemistry 206. Fee, \$5.00. *Three hours credit.*

208. QUANTITATIVE ANALYSIS—A course in gravimetric analysis stressing analysis of unknowns. Two or more commercial samples will be analyzed. One hour lecture and recitation and two three-hour laboratory periods each week. Prerequisite, Chemistry 206. Fee, \$5.00. *Three hours credit.*

216. CHEMICAL PROBLEMS—A course in the mathematical aspects of second year chemistry involving problems of qualitative and quantitative analysis. Considerable work in supervision of problem solving is done. One three-hour lecture and laboratory period each week. Prerequisite, first year chemistry. Fee, \$5.00. *One hour credit.*

### Upper Division Courses

301, 302. ORGANIC CHEMISTRY—A study is made of the nomenclature, properties, and departments of the aliphatic and aromatic carbon compounds. In the second part, emphasis is placed upon general organic reactions, their applications and the theories underlying them. Three lectures and recitations each week. Prerequisite, Chemistry 205. *Three hours credit each semester.*

303, 304. ORGANIC CHEMISTRY—The work consists of the preparation and study of typical aliphatic and aromatic compounds, and introductory work in the separation, purification and identification of simple compounds. Two three-hour laboratory periods each week which include one discussion period. Prerequisite or concurrent, Chemistry 301. Fee, \$7.00 each semester. *Two hours credit each semester.*

307. CHEMICAL LITERATURE AND TECHNICAL WRITING—Examination of standard reference works, periodicals, pamphlets, etc., with written reports on each unit studied following various types of technical writing procedures: translation of a short German article. One hour class work a week. Required for juniors and seniors majoring in chemistry. *Two hours credit.*

311-312. PHYSICAL CHEMISTRY—A course in the principles of theoretical chemistry, including the study of: the structure of matter, equilibria, chemical kinetics, chemical thermodynamics, electro-chemistry, catalysis, and mechanism of reactions. Problem work is included. Three lectures and recitations each week. Prerequisite, Chemistry 208. Prerequisite or concurrent, Mathematics 209-210, Physics 201 and 202. *Three hours credit each semester.*

317. CHEMICAL PROBLEMS—A course in the mathematical aspects of chemistry above the second year. Considerable work in supervision of problem solving is done. One three-hour discussion and laboratory period each week. Prerequisite, second year college chemistry. Fee, \$5.00. *One hour credit.*

319-320. PHYSICAL CHEMISTRY—Quantitative investigation of gas laws, surface tension, speed of reaction, solutions, phase diagrams, electro-motive force, hydrogen ion concentration, and absorption. Two three-hour laboratory periods each week, including one discussion period. Prerequisite or concurrent, Chemistry 311-312. Fee, \$7.00 each semester. *Two hours credit each semester.*

321. BIOLOGICAL CHEMISTRY—The analytical and the physical chemistry of living organisms. Two lectures and three hours laboratory work each week. Prerequisites, Chemistry 301 and a course in biology. Fee, \$5.00. *Three hours credit.*

## CHEMISTRY, CLASSICAL LANGUAGES

322. BIOLOGICAL CHEMISTRY—Comparative study of the physical and chemical processes used by living organisms. Two lectures and three hours laboratory work each week. Prerequisite, Chemistry 321. Fee, \$5.00.  
*Three hours credit.*

340-341. PRINCIPLES OF CHEMICAL ENGINEERING—See Engineering 340-341.

343. GAS AND FUEL ANALYSIS—The work consists of the analysis of natural and artificial gases, gas calorimetry, analysis and calorimetry of coal, and the analysis and physical testing of oils. One lecture and two three-hour laboratory periods each week. Prerequisite, Chemistry 208. Fee, \$5.00.  
*Three hours credit.*

401. ADVANCED QUANTITATIVE ANALYSIS—The work includes colorimetric, turbidimetric, and electrometric titrations. Nine laboratory hours which include one discussion period. Prerequisite, Chemistry 208 or its equivalent. Fee, \$7.00.  
*Three hours credit.*

404. ORGANIC ANALYSIS—The work is a study of systematic methods of separation, purification, and identification of organic compounds, and practice in the standard methods for the quantitative analysis of organic compounds. Twelve laboratory hours each week including one discussion period. Prerequisite, Chemistry 303. Fee, \$7.00.  
*Four hours credit.*

408. HISTORY OF CHEMISTRY—Survey of the origin and development of chemical theory and practice from ancient times to the present. One hour class work a week of reports, recitations, and lectures. Open to juniors and seniors majoring in chemistry.  
*One hour credit.*

419. ADVANCED INORGANIC CHEMISTRY—An advanced course in inorganic chemistry, stressing the more difficult points of theory. Two lectures and recitations each week. Prerequisite, Chemistry 208.  
*Two hours credit.*

421. ADVANCED ORGANIC CHEMISTRY—An advanced course in theory of organic chemistry. Two lectures and recitations each week. Prerequisite, Chemistry 302.  
*Two hours credit.*

450. GROUP RESEARCH—A research course for seniors of outstanding ability who are candidates for the degree of bachelor of science. Each student works on a separate phase of a group problem. The professor in charge of each group coordinates and closely supervises the work. Prerequisite, the completion of at least thirty semester hours of chemistry with a B average or better including general chemistry, qualitative analysis, quantitative analysis, organic chemistry, and physical chemistry. Fee, \$5.00.  
*Hours and credits arranged.*

## CLASSICAL LANGUAGES

### Latin

201. SELECTIONS FROM THE LETTERS AND ORATIONS OF CICERO—Prose composition. Prerequisite, two units of high school Latin.  
*Three hours credit.*

202. SELECTIONS FROM VIRGIL'S AENEID, BOOKS I-VI—Prose composition. Prerequisite, Latin 201 or three units of high school Latin.  
*Three hours credit.*

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### Upper Division Courses

301. OVID'S METAMORPHOSES—Prose composition. Prerequisite, Latin 201 or three units of high school Latin. *Three hours credit.*
302. CICERO'S DE AMICITIA—History of Roman literature. Prerequisite, Latin 301 or four units of high school Latin. *Three hours credit.*
303. LIVY—Prose composition. Prerequisite, Latin 302 or four units of high school Latin. *Three hours credit.*
304. HORACE'S ODES—Roman life. Prerequisite, Latin 303. *Three hours credit.*

### Greek

Additional work in Greek is available for students who desire it.

101-102. ELEMENTARY GREEK—Grammar and exercises in translation. In the second semester selections will be read from Attic prose writers or from the Greek New Testament. This course is intended not only for those who desire to take up the study of Greek literature but also for those who wish to become familiar with the Greek element in the English vocabulary. *Three hours credit each semester.*

203-204. GREEK PROSE AND POETRY—Selections from Xenophon, Plato or Lucian, and from Homer's Odyssey. A play of Euripides will also be read. *Three hours credit each semester.*

### ECONOMICS

A major in economics consists of 24 semester hours in addition to Social Science 101, 102, 201, and 202. Courses in other departments for which credit may be given toward the major in economics are: Engineering 306 and 308, and Business Organization 324. 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.

104. ECONOMIC GEOGRAPHY—An elementary survey of the raw materials of the earth, methods of livelihood, land utilization, and population problems. *Three hours credit.*

202. PRINCIPLES OF ECONOMICS—A course in economic theory to supplement the material in Social Science 101 and 102. For economics majors only. *Three hours credit.*

### Upper Division Courses

301. ECONOMIC HISTORY OF EUROPE—Economic history is briefly traced from primitive times to about the sixth century A. D. After that the successive systems are given in greater detail. In the main, the more advanced nations of each period are chosen for study. *Three hours credit.*

302. ECONOMIC HISTORY OF THE UNITED STATES—A study of the influence of economic forces on the evolution of our national life and their effect upon our religious and social developments. *Three hours credit.*

## ECONOMICS, EDUCATION

303. FINANCIAL ORGANIZATION—The aim of the course is two-fold: first to furnish a foundation for the more technical studies in the field of finance; and second, to describe the financial institutions with which the average person comes in contact in life, such as the commercial bank, building and loan association, finance company. *Three hours credit.*

304. PUBLIC FINANCE—A survey of the development and present status of public finance; federal, state, and local taxation; public credit; the budget; financial administration. *Three hours credit.*

305. ELEMENTARY STATISTICS—The course presents techniques for measurement and interpretation of economic and social data. Topics covered are tabular and graphic presentations, averages, ratios and coefficients, dispersion, correlation, measurement of trends, and collection of statistical material. *Three hours credit.*

309. ENGINEERING ECONOMICS—Economics and statistical problems of engineering with emphasis upon the following topics: Annuities, financing engineering enterprises, valuation and depreciation, replacement. *Three hours credit.*

311. LIFE INSURANCE (C. L. U.)—Survey of the economic functions of life insurance, company practices, government regulations, actuarial principles. Primarily for candidates for the Chartered Life Underwriters Examinations. *Three hours credit.*

401. LABOR PROBLEMS—The history of the labor movement in England and in this country is outlined as a background for discussion of present issues. *Three hours credit.*

402. COMPARATIVE ECONOMIC SYSTEMS—A comparative study of American Capitalism, Russian Communism, and British Socialism. *Three hours credit.*

404. PERSONNEL MANAGEMENT—The background and field of labor management are reviewed: the functions of selection and training of employees and the maintenance of business relationships including wage policy, safety and health, benefits, and grievance adjustment in organized and unorganized companies. Prerequisites, Social Science 101, 102, 201, and 202. *Three hours credit.*

407, 408. ECONOMIC THEORY—Seminar for seniors majoring in economics. Readings in the history of economic thought. *Three hours credit each semester.*

## EDUCATION

Students who expect to teach in high school or elementary school should consult with the head of the department of education to insure that their plans for professional preparation are satisfactory. They are urged to participate in extracurricular activities while in college in order that they may be qualified to direct such activities in the public schools.

Courses in other departments for which credit in education may be given are: Psychology 202, 406, 425, 426, and 427. For education curriculums, see pages 65-70.



## YOUNGSTOWN COLLEGE

101. INTRODUCTION TO EDUCATION—Designed to be the first professional course for prospective teachers. It includes observation in pre-school, elementary, junior and senior high school, and special classes, thereby having definite guidance value and furnishing background for later professional courses. Class discussions will be devoted to an analysis of desirable personality traits, personal and social ends derived from teaching, placement opportunities, preparation requirements, and observations.

*Two hours credit.*

214. CHILDREN'S LITERATURE—Designed to acquaint the student with children's literature, and to consider methods of helping children to use and enjoy books. Emphasis will be placed upon the reading of recent books. Attention will be given to the principles of selection, historical development, methods, authors, and illustrators. Visits will be made to book departments, libraries, and classrooms.

*Three hours credit.*

### Upper Division Courses

301. PRINCIPLES OF TEACHING—A study of general methods of high school teaching: typical classroom procedure, the methods utilized by superior teachers, attention to individual differences, measuring the results of teaching, planning the instruction. Observation of teaching in high schools. Open to juniors and seniors.

*Three hours credit.*

302. ORGANIZATION AND ADMINISTRATION OF SCHOOL LIBRARIES—The fundamentals of school library organization and control, functions and duties of the librarian, use of reference materials, business management and accounts, and principles and records required in the circulation of books.

*Three hours credit.*

303. CATALOGING AND CLASSIFICATION—A study of the structure of a catalog and its adaption to school libraries. Practice work in making a dictionary card catalog includes the use of Library of Congress printed cards. A study of the principles of classification. The Dewey Decimal classification, as the system in most general use, is used as the basis for the course. Prerequisite, ability to operate a typewriter.

*Three hours credit.*

304. CLASSROOM ADMINISTRATION, ORGANIZATION, AND MANAGEMENT—A study of problems of classroom control, attendance, organization, curriculum, program, procedure, and of extracurricular activities in the light of a modern philosophy of education. Observation of teaching in public schools. Open to juniors and seniors.

*Three hours credit.*

305. APPRENTICESHIP—Similar to Education 404A, but for elementary school teachers.

*Three hours credit.*

306. EDUCATIONAL MEASUREMENT AND GUIDANCE—A study of the construction, administering, scoring, and interpreting of the new type objective examination; the selection, administering, scoring, and interpretation of results of standardized tests and scales, and their use in vocational and educational guidance. Open to juniors and seniors. Fee, \$1.00. (Summer)

*Two hours credit.*

306X. EDUCATIONAL MEASUREMENT, GUIDANCE, AND STATISTICS—The same as Education 306, with the addition of a study of elementary statistics as applied to educational data. Fee, \$1.00. (Summer)

*Three hours credit.*

307. HISTORY OF EDUCATION—A study of the historical development of educational organizations, objectives, curriculums, and methods with special reference to a better understanding of modern educational conditions and problems. The place of education in various civilizations, especially our modern Western civilization, is studied. This course may be counted also on a major or minor in history. Open to sophomores, juniors, and seniors. (Summer)

*Two or three hours credit.*

## EDUCATION

308. EDUCATIONAL SOCIOLOGY—A study of sociological foundations of education: the relation of the individual and the social group; the school as a social institution; the relations of the home, the community, and the state and education; the relations of social control, social progress, democracy, efficiency, and culture and education; a study of 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. This course may be counted on a major or a minor in sociology. Open to sophomores, juniors, and seniors. (Summer)  
*Three hours credit.*
309. THE HIGH SCHOOL CURRICULUM—The course will include a definitive discussion of curriculum and the several concepts involved. Time will be given to a consideration of the relationship between curriculum revision and social or community problems, and the place of curricular revision in a world of change. The various approaches, objectives, and techniques will be examined. Students may be required to submit a curriculum plan in some chosen field of subject matter.  
*Three hours credit.*
312. THE TEACHING OF HANDWRITING—A course in penmanship to improve the writing ability of the student and to consider methods of teaching.  
*One hour credit.*
313. THE TEACHING OF SKILLS—Principles effective in the learning of skills will be studied and applied to the teaching of materials drawn from the skill phases of spelling, arithmetic, writing, and language.  
*Three hours credit.*
314. THE TEACHING OF CONTENT SUBJECTS—Principles effective in the learning of content subjects will be studied and applied to material drawn from history, geography, and other content phases.  
*Three hours credit.*
317. EXTRACURRICULAR ACTIVITIES—This course is intended to familiarize the student with the different philosophies of extracurricular activities. By a process of reflective thinking the class will arrive at a personal philosophy that will work in the individual cases. The organization, supervision, and administration of extracurricular activities will be discussed in the light of best practice. These activities will include such school organizations as: Student Council, Dramatics, Booster Club, and Bird Club. Prerequisite, junior standing.  
*Two hours credit.*
330. VISUAL EDUCATION—In this course the use of various kinds of materials suitable for visual education are studied, including several makes of projectors and their operation. Teaching practices in relation to sensory aids and their correlation with other aspects of teaching are emphasized. Class reports, demonstration lessons, and practice as operators are required.  
*Two hours credit.*
331. VISUAL EDUCATION—This course covers the theory of audio-visual aids, a review of projector operation, a study of production of audio-visual aids, the organization of projector clubs, administration of audio-visual aids, and photography in relation to visual education. Reports, recordings, and practice as operators are required. Prerequisite, Education 330.  
*Two hours credit.*
400. SPECIAL METHODS—A study of problems involved in the teaching of different high school subjects. Each student will specialize on the subject of his special interest. Observation of teaching in public secondary schools; reports; term paper. Each student will have a conference each week with the head of the department of his major teaching subject. At least one-fourth of the instruction in the course will be given by the department head or by some teacher appointed by him. Prerequisite, Education 301. Open to seniors.  
*Two hours credit.*

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401. PRINCIPLES OF EDUCATION—This course is required for elementary teachers and is elective for secondary teachers. It develops an analysis of current education, its aims, its sources, its strength and weaknesses. The current practices will be traced to the great contributors, from Pestalozzi and Froebel to the modern group. The course aims to make the contributors real personalities, the threads of their influence shown in the warp and woof of modern education. However, the personalities should not obscure the principles. The focus will be on the means by which modern education promotes the growth of the whole child in a democratic society.

*Three hours credit.*

404. SUPERVISED STUDENT TEACHING—HIGH SCHOOL—Observation and teaching of high school classes under the direction and guidance of supervisors. Students meet in class one period each week for announcements and to discuss problems. Conferences with the instructor or the critic teacher will be scheduled or on call. To take this course students must make written application on the form provided for this purpose during the previous semester, and must have the unqualified approval of the heads of the departments in which he is specializing for the purpose of teaching, and of the head of the department of education. He must also present a statement from the English department certifying that his use of oral and written English is of the quality satisfactory for high school teaching. He should maintain a quality point average not lower than 2.00 in his major and minor teaching fields and not lower than 1.5 in all of his college work. No student will be admitted to this course whose centile rank is lower than thirty-four in the Ohio State University Psychological Test or lower than forty in the American Council on Education Cooperative English Test. It is understood, however, that the actual classroom teaching must be satisfactory; otherwise, it may be discontinued at any time. In planning his schedule for the semester, the student should leave a half day throughout the week unscheduled except for student teaching. Open to approved seniors during their last semester in college. Fee, \$10.00.

*Three hours credit.*

404A. SUPERVISED STUDENT TEACHING AND APPRENTICESHIP—HIGH SCHOOL—Admission to this course is on the same basis as admission to Education 404. Three semester hours of credit will be earned in student teaching. The additional two or three semester hours of credit will be earned as an apprentice teacher under the direction of the principal of the high school to which the student is assigned or some person designated by him. The apprentice teacher may be assigned to do substitute teaching, study hall supervision, office work, pupil personnel work, observation of teaching, library work, research work, or anything that a regular teacher might be expected to do. Open to approved seniors during their last semester in college. Fee, \$10.00.

*Five or six hours credit.*

405. SUPERVISED STUDENT TEACHING—ELEMENTARY EDUCATION—The same as Education 404 except in elementary grades. Fee, \$10.00.

*Six or nine hours credit.*

413. THE TEACHING OF READING—A study of the principles and techniques of teaching reading, and the purpose of reading as a functional part of the day's activities. Attention will be given to oral, silent, and audience reading, and to diagnostic and remedial measures.

*Three hours credit.*

420. PROBLEMS OF THE MODERN CLASSROOM TEACHER—The course is meant to stimulate teachers to better work in their classrooms through an adjustment to the teaching surroundings. Solutions to the problems will be sought through a re-thinking of philosophy, methods of instruction, and ethics. The solutions decided upon must be of a practical nature in the light of best practice and procedure. The professional, legal, and social status of the teacher, teacher adjustment, teacher-pupil relations, and other problems will be discussed.

*Two hours credit.*

## EDUCATION, ENGINEERING

430. EDUCATIONAL PROGRAMS FOR CHILDREN IN ELEMENTARY SCHOOLS—The course affords opportunity to explore relationships with homes and other educational agencies. Special attention is given to utilizing resources of the arts, subject matter fields, community, and other related areas. *Two hours credit.*

431. CHILDHOOD EDUCATION I—This course is planned to explore, analyze, evaluate, and provide for the physical, emotional, intellectual, and social needs of children as we find them at the kindergarten-primary stage of development. *Two hours credit.*

432. CHILDHOOD EDUCATION II—In this course the findings and philosophy developed in Education 431 will be applied to the practical and specific phases of the kindergarten-primary period. Attention will be given to school and community environment, curriculum, equipment, daily program and materials. *Two hours credit.*

441, 442. PROBLEMS OF PUPIL PERSONNEL—A study of the practical problems that confront teacher and pupil in regular school routine. Special emphasis will be given to discipline, attendance, public school delinquents, child labor, and school-parent relationship. Practical cases will be presented and social agencies studied as auxiliaries to the school program. Not open to freshmen. *Two hours credit each semester.*

## ENGINEERING

For engineering curriculums, see pages 70-73.

For mathematics requirements for engineering students, see page 111.

All prerequisites for courses in engineering must be passed with a grade of C or better before a student will be admitted to a more advanced course.

Courses in other departments for which credit toward engineering may be given are: Physics 303 and 317, Mathematics 231, and Economics 305.

101. ENGINEERING DRAWING—ELEMENTARY—Instruction in the proper use of instruments, correct drafting room practice, and conventional representation. Exercises in lettering, free hand sketching, geometric construction, orthographic and oblique projection, sectioning, and isometric drawing. After the above principles are well established, complete detail working drawings of gears, structural units, and general assemblies are made. Emphasis is placed on the practical application of engineering design principles. *Three hours credit.*

102. ENGINEERING DRAWING—DESCRIPTIVE GEOMETRY—Exercises dealing with points, oblique lines and oblique planes in space. Determination of distances, intersections, and angular measurements as occur in practice. The fundamental geometric solids are cut by oblique planes and surfaces are developed. Prerequisite, Engineering 101. *Three hours credit.*

103. ENGINEERING DRAWING—ADVANCED—Problems involving working drawing applications of engineering principles. Various types of mechanical and structural problems are introduced. Students are required to make calculations for designs as well as to construct working

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drawings which develop a comprehensive knowledge of drafting methods. An effort is made to select practical modern problems adapted to individual ability and inclinations. Methods of welding structural units is an illustration of the specialized type of problem. Prerequisite, Engineering 101.  
*Three hours credit.*

201-202. REPORT WRITING—A study of the engineering report as to content and methods of presentation; the actual construction of a comprehensive report on an engineering enterprise, making use of data obtained in previous studies. Prerequisite, advanced standing in engineering.  
*Two hours credit each semester.*

203, 204. PRINCIPLES OF RADIO—Circuit constants, resonant circuits, fundamental properties of vacuum tubes, diodes, triodes, vacuum tube amplifiers, power amplifiers, oscillators, tube characteristics, transmitters and receivers. Prerequisite, Mathematics 101-102. Fee, \$5.00 each semester.  
*Three hours credit each semester.*

204, 205. ENGINEERING DRAWING—ADVANCED—Application of the principles of mechanical and structural designing to advanced problems. Elements of surface development as applied to practical designs of specially shaped tanks, and sheet metal development; assembly and detail of special equipment; cam and gear development including sprocket, bevel, worm, and helical gearing; welded structural objects and replacement of castings by welded machine parts; design of punching and drawing dies; pictorial representation by isometric principles; mill and shop building layout and detail both steel and wooden construction.  
*Three hours credit each semester.*

251, 252. GENERAL METALLURGY—Three lectures and recitations per week. A study of the principles of metallurgical processes with particular emphasis on the manufacture of iron and steel. Essentials of metallurgical reactions, refractories for metallurgical furnaces, furnaces and fuels, iron ores and other raw materials of the iron and steel industry, the iron blast furnace, the Bessemer converter, acid and basic open hearths, acid and basic electric furnaces, manufacturing costs and marketing of steel products. Prerequisite, Chemistry 205.  
*Three hours credit each semester.*

255. METALLOGRAPHIC TECHNIQUE—Two hours laboratory work per week including one discussion period. Essentially a laboratory course in the techniques of preparation, examination, and photography of iron and steel samples. The student will have the opportunity to become acquainted with typical steel structures after which various heat treatments and the general principles of heat treatment will be taught. There will be opportunity for the identification of non-metallic inclusions and study of defective steels. Prerequisite, Chemistry 205.  
*Two hours credit.*

### Upper Division Courses

301. ELEMENTARY MACHINE DESIGN—A study of the relative motions, velocities, and acceleration of moving parts of machinery; cams, gears, and miscellaneous mechanisms. Construction of velocity and acceleration diagrams. Prerequisites, Engineering 102 and Physics 201 and 202.  
*Two hours credit.*

302. ELEMENTARY MACHINE DESIGN—This course is a continuation of Engineering 301. It consists of a study of combined normal and shear stresses, shafts, torsion and bending, stiffness of shaft, journal and plane-surface bearings, ball and roller bearings, round-wire helical springs, conical helical springs, leaf springs, brakes, clutches, and friction drives. Prerequisite, Engineering 301.  
*Two hours credit.*

## ENGINEERING

306. INDUSTRIAL ORGANIZATION—The growth, present status of development, and indication of trends of modern industrial organizations dealing particularly with the principles which determine the location of plants, type of management, control of production, and type of equipment. Wage payments and cost finding methods, and policies regarding inspection standards and human relations. *Two hours credit.*

308. MOTION AND TIME ANALYSIS—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 will be arranged so that classroom theory and principles can be applied to actual operations. Prerequisite, Mathematics 101-102. *Two hours credit.*

309. TIME STUDY AND FORMULA MAKING—Tools and methods of time study, practice in making time study observations, determination of constants and variables, leveling for effort and skill, allowances for delays and fatigue, construction and use of formula standards. Time studies will be made on actual plant operations to provide practical experience. Prerequisite, Mathematics 101-102. *Two hours credit.*

311-312. ELECTRIC CIRCUITS—Study of the electric circuit; the application of Ohm's Law and Kirchoff's Law to direct- and alternating current circuits; wave form of E. M. F.; relations of simple harmonic E. M. F.'s and currents; phase differences; active, reactive, and apparent power, power factor and reactive factor; resistance, inductance, and capacitance, singly or in combination; polyphase circuits, balanced and unbalanced; power in polyphase systems; and vector representation and calculation. Prerequisites, Mathematics 210, Physics 201 and 202. *Three hours credit each semester.*

313-314. ELEMENTS OF ELECTRICAL ENGINEERING—Recitations and problems dealing with the elementary principles of direct and alternating current circuits and machines. Electrical engineering laboratory practice throughout both semesters. Not open to electrical engineering students. All other engineering students will take this course. Fee, \$12.50 each semester. Prerequisites, Mathematics 209-210, Physics 201 and 202. *Four hours credit each semester.*

318. HEAT ENGINEERING—The more practical application of the thermodynamic principles to steam, air, and gas power are pursued in this course. The lecture work covers reciprocating steam engines, steam engine power and economy, steam turbines, steam-condensing equipment, pumps, compressed air, and a study of compressors and internal-combustion engines. The laboratory work covers steam engine valve setting, air compressor tests, complete radiator tests of various designs, steam pump tests, thermometer calibration, and the testing of steam traps. Three hours lecture and recitation and two hours laboratory each week. Prerequisites, Physics 317. Fee, \$10.00. *Four hours credit.*

319. HEATING, VENTILATING, AND AIR CONDITIONING—FUNDAMENTALS—This course covers the essentials of heating and ventilating, with particular reference to essential definitions, laws and properties of various media, factors effecting human comfort, heat transmission and air infiltration in buildings, calculation and estimation of building heat losses and heat gains, heat disseminators, radiators and convectors, fuels, combustion, draft and chimneys, pipe, pipe fittings, insulation, flow of steam in pipes and piping details, heating with steam and hot water. Lectures and problems. Prerequisite, Physics 317. *Three hours credit.*

320. HEATING, VENTILATING, AND AIR CONDITIONING—This course is devoted largely to air conditioning as it has to do with heating and ventilating problems, and the processing of materials. The

work begins with air conveying and air cleaning, air-flow, fans, duct design, air cleaners, gravity-flow, unit systems of ventilation, heating with warm-air furnace systems, heating with central hot-blast systems and unit heaters, air humidification, air dehumidification and drying of materials, the control of air temperature and humidity, summer cooling of buildings. Lectures and problems. Prerequisite, Engineering 319. *Three hours credit.*

324. ANALYTICAL MECHANICS—STATICS—Study of 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 strength of materials. Prerequisites, Mathematics 209-210, Physics 201 and 202. *Three hours credit.*

325. ANALYTICAL MECHANICS—DYNAMICS—Study of all motions of a particle, dynamics of moving bodies, Newton's Laws, simple harmonic motion, mechanical vibrations, impulse and momentum, balancing, the gyroscope, governors, and work and energy. Prerequisite, Engineering 324. *Three hours credit.*

326. STRENGTH OF MATERIALS—Study of the application of more advanced principles of mechanics to the solution of problems in stress and strain on engineering materials. Includes resistance to direct force, bending, torque, shear, eccentric load, deflection of beams, and compounding of simple stress. The laboratory work includes experiments with beams, struts, columns, and shafts. Tension, compression, bending, torsion, and shear tests on various engineering materials, all substantiating the theories of strength of materials. Three hours lecture and recitation and two hours laboratory each week. Prerequisite, Engineering 324. Fee, \$10.00. *Four hours credit.*

328. HYDRAULICS—Study of the laws of fluid mechanics and their application; properties of fluids; statics of fluids, compressible and incompressible; accelerated liquids; dynamics of fluids; the flow of fluids in pipes; flow with free surface; orifices and nozzles; impulse and momentum; resistance to immersed and floating bodies; dynamical similitude. Prerequisite, Engineering 324. *Three hours credit.*

340-341. PRINCIPLES OF CHEMICAL ENGINEERING—Principles of Stoichiometry are reviewed, special emphasis being laid upon the utility of the pound mol as a unit for calculation. Because of their fundamental importance the phenomena accompanying the flow of heat and the flow of liquids, together with laws governing these operations are considered in detail. Processes of crushing and grinding, mechanical methods for separating materials, together with filtration in its many different forms, are given a descriptive treatment with a mathematical analysis. Processes depending upon vaporization are treated from the common standpoint of vapor pressure equilibria. With drying in its many phases, humidification, dehumidification, water cooling, evaporation, and distillation are considered. Prerequisites, Chemistry 206, 207, and 208. *Three hours credit each semester.*

342. METALLURGICAL ANALYSIS—A qualitative and quantitative analysis of natural ores, commercial alloys, and fluxes. One lecture and two three-hour laboratory periods each week. Prerequisite, Chemistry 207. Fee, \$5.00. *Three hours credit.*

343, 344. PHYSICAL METALLURGY—This course will be devoted to a study of the physics of the metallic state. 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,

## ENGINEERING

magnetic properties, damping capacity, other physical properties of metals, powder metallurgy. Three lectures and recitations each week. Prerequisite, Engineering 252. Prerequisite or concurrent, Chemistry 311, 312.

*Three hours credit each semester.*

345. METALLURGY—A study of crystalline structure of metals, their freezing, age hardening, etc. A review of the most common non-ferrous alloys and their properties and uses. Development of the iron carbon equilibrium diagram and the significance of the thermal critical points. Two hours lecture and recitation and three hours laboratory each week.

*Three hours credit.*

346. METALLURGY—The effect of the various elements upon the mechanical properties of steel, testing, calculating hardenability, study of steel complaints and defects observed in laboratories. Strip and sheet mill processing. Two hours lecture and recitation and three hours laboratory each week.

*Three hours credit.*

350-351. ELEMENTS OF ATOMIC ENGINEERING—This course includes the study of the fundamental particles of physics. It constitutes one of the basic fields of preparation for the understanding of the modern concepts of atomic structure. It covers a study of the electron, the electric discharge, cathode rays, isotopes, natural radio activities, atomic nuclei, and artificial disintegration.

*Three hours credit each semester.*

353-354. FUELS AND COMBUSTION—This course treats the origin, combustion, and production of natural fuel—coal, petroleum, and natural gas—also manufactured fuels—producer, water, oil, and coal gas—in view of their rapidly growing importance the combustion of fuels is essentially a chemical change, and adequate treatment of the subject requires an understanding of the chemical principles involved. Other subjects treated are chemistry of the combustion reaction, combustion calculations, hand and mechanical fired furnaces, furnace efficiency and distribution of heat losses, the flow of liquids and gas, recuperators and regenerators, flow of heat, rate of heat transfer, heat transfer from flames—convection—radiation—and the mathematical development of the rate of intermittent heat. Prerequisites, Mathematics 209-210, Chemistry 205.

*Three hours credit each semester.*

355. METALLURGICAL CALCULATIONS—This course includes calculations in the field of thermo-chemistry. Calculations of blast furnace charges, open hearth charges, heat transfer, and chimney design. Mathematical determination of the efficiency of blowing engines, blast furnaces, Bessemer converters, and reheating furnaces are treated in detail. The subject material of the course covers the above treatment in the fields of ferrous and non-ferrous metallurgy. Prerequisites, Mathematics 209-210, Chemistry 206, 207, and 208.

*Three hours credit.*

360. CHEMICAL PLANT DESIGN—This course involves a detailed study of chemical plant layouts, including processes, flow diagrams, buildings, equipment, and geographical plant requirements in both the fields of chemical and metallurgical production. Prerequisites, Engineering 102, Chemistry 205, Physics 201 and 202.

*Three hours credit.*

373-374. ROLLING MILL DESIGN—This course is designed to present the technical aspects of the design, maintenance, and operation of rolling mills. The theories of heating, heat transfer, rolling, cooling, and shearing are taken up. Equipment is classified as to types, capacities, and relative merit. Power requirements, speed relationships, controls, and layout and breakdown methods are emphasized particularly with respect to continuous billet, bar, and strip mills. Specifically, these subjects are limited to hot and cold ferrous rolling mills typified by blooming, slabbing, billet, rail, bar, hoop, strip, shape, tube, rod mills, their respective heating furnaces, appurtenances, and auxiliary equipment. Prerequisites, Mathematics 209-210, Physics 201 and 202.

*Three hours credit each semester.*



## YOUNGSTOWN COLLEGE

403. REFRIGERATION—Application of the thermodynamic theory to refrigeration; pumps, centrifugal and reciprocal; compressors; consideration of the refrigerants and their properties; compression and absorption systems. Prerequisite, Physic 317. *Three hours credit.*

405. TURBINES AND JETS—Theory of the turbines, thermodynamic study of the flow of gaseous mixtures through nozzles; design of blades; efficiency; governing. Three hours lecture and recitation and two hours laboratory each week. Prerequisite, Engineering 318. Fee, \$10.00. *Four hours credit.*

406. INTERNAL COMBUSTION ENGINES—Thermodynamic analysis of internal combustion engine cycles; fuels; combustion; carburetion, cooling, lubrication, and effect of supercharging on engine performance. Three hours lecture and recitation and two hours laboratory each week. Prerequisite, Engineering 318. Fee, \$10.00. *Four hours credit.*

407. IRON FOUNDRY—THEORY AND PRACTICE—A study of the theory of foundry practice of ferrous and non-ferrous metals; heat requirements; a first-hand study in the foundry of actual practice in connection with core-making; snap-flask, floor, bench, and machine mouldings; pattern requirements for various classes of castings, etc. Three hours of lectures and six hours of foundry practice per week. *Three hours credit.*

408. STEEL FOUNDRY—THEORY AND PRACTICE—Sand mixtures; type of sand used, and discussion of moulding and core sand mixtures and their functions. Founding: floor, bench, and machine moulding; centrifugal casting; heading and gating; cleaning and preparing castings for shipment. Design: pattern and casting. Melting practice: crucible, converter, openhearth, and electric; discussion of acid and basic practices, and chemical reaction. Heat treatment: annealing, normalizing, air, oil, and water quenching of carbon and alloy steels. Specifications and uses of various types of alloy steels. Prerequisite, Engineering 407. *Three hours credit.*

411. DIRECT CURRENT MACHINERY—This course covers the study of direct current machines; dynamo principles, armature winding, magnetization curve; armature reaction, cross magnetization, and flashover; voltage characteristics of various types of direct current generators; operation of generators; speed and torque characteristics of motors; starting and speed control of motors; efficiency of generators and motors; testing of direct current machines; rating, weight, and cost of motors and generators; special direct current apparatus as the third brush generator; automobile electric system, train lighting systems, arc welding generators; the gas-electric car and bus. Three hours lecture and recitation and four hours laboratory each week. Prerequisite, Engineering 313-314. Fee, \$10.00. *Five hours credit.*

413. ALTERNATING CURRENT APPARATUS—Detailed study of rotating electrical machinery including single-phase, three-phase, induction, and synchronous A. C. motors, and rotary converters. This course includes the application of the various types of motors to industrial uses. Three hours lecture and recitation and four hours laboratory each week. Prerequisite, Engineering 313-314. Fee, \$10.00. *Five hours credit.*

415. ELECTRON DYNAMICS—This course covers the study of electron principles; motion of charged particles in electric and magnetic fields; application of motion of particles in applied fields; electrons in metals; bound and free electrons; phenomena at the surface of metals; energy of escaping electrons; calculation of thermionic emission; retarding and accelerating fields; kinetic theory of gases; Richardson's Equations; fundamental processes in gases; electrical discharges in gases; Paschen's Law; the negative glow and Faraday dark space; plasma characteristics; static volt-ampere arc curves; formation of corona, glow, and arc. Prerequisite, Engineering 313-314. *Three hours credit.*

## ENGINEERING, ENGLISH

416. ELECTRONIC APPLICATIONS—This is a continuation of Engineering 415 and covers study of commercial tubes, both vacuum and gaseous filled; rectification of half- and full-waves; polyphase rectifiers; controlled rectifiers; thyatron tubes; filtering of rectifiers; triode characteristics; multielectrode tubes; circuit elements; voltage amplification; photoelectricity and photoelectric cells; photoelectric theory; phototube applications. Prerequisite, Engineering 415. *Three hours credit.*

417. ELECTRIC POWER TRANSMISSION—Study of the electrical, mechanical, and economic calculations of the design of electrical systems; the transmission and distribution of electrical power; long and short transmission lines; solution of transmission problems by hyperbolic functions. Prerequisite, Engineering 311-312. *Three hours credit.*

451, 452. METALLOGRAPHY—A course in the principles and application of metallography and heat treatment of iron and steel. The iron carbon diagram, the heat treatment of plain carbon steel; annealing, normalizing, isothermal transformation, the "S" curves, quenching and tempering; hot working of steel, cold working and recrystallization, grain size, hardenability concepts, the influence of the alloying elements on steel, low alloy steels, medium alloy steels, stainless steels, high speed steels, other special steels, heterogenities and defects in commercial steels, non-metallic inclusions, practical heat treating processes, cast iron and malleable irons. The laboratory will be devoted to acquiring familiarity with metallographic techniques, a study of typical metallographic structures, heat treatment and study of its effect. The student will be given practice in handling "unknown" samples in order to become familiar with commercial laboratory methods of study of "complaints" and defects. Two hours lecture and recitation and three hours laboratory each week. Prerequisite, Engineering 344. Fee, \$5.00 each semester. *Three hours credit each semester.*

455. IRON AND STEEL METALLURGY—This course includes the study of the raw materials required for the production of iron and steel. Ore concentration, by-products, ovens, blast furnaces, Bessemer processes, open hearth, and refractories. *Three hours credit.*

456. NONFERROUS METALLURGY—This course includes a study of the production of nonferrous materials including cadmium, chromium, copper, aluminum, gold, silver, tin, and zinc. Types of ores, types of blast furnace melting, converters, continuous decantation and cyanide processes. *Three hours credit.*

470-471. THESIS—Before graduation the student must prepare a written report containing a minimum of 2,500 words. This report is to be an investigation on some subject either selected by the student or designated by the dean of engineering. Three bound copies will be required. Specifications will be presented to the student upon request. No credit will be given until the thesis has been accepted by the dean and the department head. Prerequisite, senior standing. *Two hours credit each semester.*

## ENGLISH

English majors are expected to complete English 205, 206, 351-352, and Speech 115. Students who plan to teach high school English must complete courses 205 or 206, 351-352, and two courses in English literature which include the study of poetry and prose. English 101-102 or 103-104 is prerequisite to all other English courses. English 203, 204 should precede

other courses in English literature. Under special circumstances the head of the English department may accept other courses in lieu of these requirements. English 101-102 or 103-104 is required of all freshmen.

101-102. ENGLISH COMPOSITION—A study of the elementary principles of composition, to teach the habits of clear and correct expression. Reading of models, writing of themes, class discussions, and personal conferences.  
*Three hours credit each semester.*

103-104. ORAL AND WRITTEN COMPOSITION—This course attempts to aid the student to organize his ideas more logically and express them more effectively in both oral and written form. (For certification purposes the credit for this course will be interpreted as six hours composition and three hours speech.)  
*Four and one-half hours credit each semester.*

203, 204. SURVEY OF ENGLISH LITERATURE—A study of the masterpieces of English prose and poetry, with emphasis on forms and backgrounds.  
*Three hours credit each semester.*

205, 206. SURVEY OF AMERICAN LITERATURE—First semester: Colonial times to 1860. Second semester: Civil War to the present.  
*Three hours credit each semester.*

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. This course is intended for students not majoring in English and should prove particularly helpful to teachers. English majors should take English 351-352.  
*Three hours credit.*

#### Upper Division Courses

351-352. HISTORY OF THE ENGLISH LANGUAGE—A survey of 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.  
*Three hours credit each semester.*

353, 354. ADVANCED COMPOSITION—A course in writing for mature students. Opportunity will be given for the development of creative ability. This course will be conducted entirely through conferences with the instructor. Registration only by permission of the instructor. Prerequisite, preparation satisfactory to the instructor.  
*One to three hours credit each semester.*

355. NEWS WRITING AND REPORTING—A study of the organization and functions of a newspaper office, and of how the newspaper gets news. Special attention paid to the different types of stories, how they are obtained and how they are written. Reporting work done in connection with college publications. Copy reading will also be studied. Prerequisite, junior standing.  
*Three hours credit.*

356. HISTORY AND PRINCIPLES OF JOURNALISM—A study of American newspapers, of how they have influenced the history of the United States, and of the outstanding leaders in the newspaper profession. Term paper required. Prerequisites, Social Science 201 and 202.  
*Three hours credit.*

361. SPENSER, MILTON, AND SOME CONTEMPORARIES—A study of the more important works in prose and verse from the early humanists to the death of Dryden. Particular attention will be given to Spenser and Milton.  
*Three hours credit.*

## ENGLISH, SPEECH

363. ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY—A study of English literature from the reign of Anne to the Romantic period, with attention to such major figures as Defoe, Addison, Steele, Pope, Swift, Johnson, Goldsmith, Boswell, Gibbon, and Burns.  
*Three hours credit.*

366. ROMANTIC PROSE—A study of the works of Lamb, Hazlitt, Hunt, DeQuincey, Landor, Smith, and Thompson.  
*Three hours credit.*

367. ROMANTIC POETRY—An intensive consideration of the works of Coleridge, Wordsworth, Scott, Byron, Shelley, Keats, and their relation to some early predecessors in the Romantic Movement.  
*Three hours credit.*

368. VICTORIAN PROSE—This course considers the prose works of Carlyle, Macaulay, Newman, Mill, Darwin, Ruskin, Arnold, Huxley, Rossetti, Morris, Pater, and Stevenson.  
*Three hours credit.*

369. VICTORIAN POETRY—A study of the Victorian poets including Tennyson, Browning, Arnold, Fitzgerald, Clough, Rossetti, Morris, Swinburne, Dobson, Henley, Stevenson, Wilde, Yeats, and Kipling.  
*Three hours credit.*

381. THE ENGLISH NOVEL—A study of the history and development of the novel in England during the eighteenth and nineteenth centuries.  
*Three hours credit.*

382. AMERICAN NOVEL—A study of the history and development of the novel in the United States during the nineteenth and twentieth centuries.  
*Three hours credit.*

400. CHAUCER AND HIS PERIOD—Reading of Chaucer's principal works, and a brief survey of his predecessors, contemporaries, and successors.  
*Three hours credit.*

405. THE ENGLISH DRAMA—A survey of English drama from the sixteenth century to the present, excluding Shakespeare. Emphasis will be mainly on the works of Elizabethan and Restoration writers.  
*Three hours credit.*

409, 410. SHAKESPEARE—A critical study of the work of Shakespeare, "The greatest dramatist and also, by the Grace of God, the greatest poet that ever lived."  
*Three hours credit.*

### Speech

115. FUNDAMENTALS OF SPEECH—This course aims to develop self-expression through the medium of mind, body, and voice. The attainment of this objective is sought by a study of proper speech habits and practice in the delivery of numerous extemporaneous and memorized speeches.  
*Two hours credit.*

116. FUNDAMENTALS OF SPEECH—Continuation of English 115. Prerequisite, Speech 115.  
*Two hours credit.*

*The prerequisite for all speech courses numbered 200 or above is Speech 115 and 116.*

213. PUBLIC SPEAKING—A practical course in the effective construction and delivery of business talks. The student is frequently required to deliver short talks before the class. This course is of especial interest to professional and business men.  
*Two hours credit.*

215, 216. PUBLIC SPEAKING AND ORAL INTERPRETATION—An adaption of Speech 115 and 116 to upperclass levels. Those who are interested may concentrate on oral interpretation.  
*Two hours credit each semester.*

## YOUNGSTOWN COLLEGE

217. RADIO PUBLIC SPEAKING—A course designed to apply the essential principles of effective public speaking to the art of radio technique. The course includes: a review of the essential principles of effective public speaking and the adaptation of these principles to the demands of modern radio; elementary principles of transmission and reception; an explanation of studio facilities; the use of studio equipment; the preparation of continuity; microphone technique; radio dramatics, and actual broadcasting. *Two hours credit.*

219, 220. PLAY PRODUCTION—The purposes of this course are threefold: to create an interest in the legitimate drama and an appreciation for it, particularly as it is found in the little theaters of today; to acquire a knowledge of the processes used in producing such dramas; and to gain some practical experience in producing plays in class and for the public. This course may be entered at the beginning of either semester. *Two hours credit each semester.*

### Upper Division Courses

315. DEBATING AND PUBLIC DISCUSSION—A study of the principles of argumentative speaking and public discussion. This course includes practical training in the analysis of questions in the finding and selecting of evidence, in the presentation of debates, and in public discussion. *Two hours credit.*

319, 320. PLAY PRODUCTION—Continuation of Speech 219, 220. *Two hours credit each semester.*

321. CLASSROOM TECHNIQUES IN SPEECH CORRECTION—Designed for classroom teachers and for others who have had no introduction to the field of speech correction. A study will be made of the nature, causes, and remedial procedures for correcting functional disorders. *Three hours credit.*

323. APPLIED PUBLIC SPEAKING—The preparation for and delivery of speeches before various local groups. This course is offered on the conference plan and by demand. Admission only by consent of the instructor. *Two or three hours credit.*

320, 419, 420. PLAY PRODUCTION—Continuation of Speech 319, 320. *Two hours credit each semester.*

### FOREIGN LANGUAGES

101-102. ELEMENTARY.

203-204. INTERMEDIATE.

These courses are intended for students who have a speaking knowledge of some language other than those regularly offered, and wish to gain facility in reading and writing or to familiarize themselves with literary masterpieces. Courses will be listed as Polish 101, Roumanian 101, Hungarian 101, etc., and will be under the supervision of the head of the Foreign Language Department. Prerequisite for 203 courses in Foreign Languages is a grade of C or better in course 102 or the corresponding high school course. *Three hours credit each semester.*

## FRENCH

### FRENCH

A major in French consists of 30 semester hours of work above the elementary level. Of this total as many as twelve hours may be taken in related fields with the approval of the head of the department. Credits in French, Italian, and Spanish may be combined for a major in Romance Languages.

101-102. ELEMENTARY FRENCH—Fundamental principles of grammar and extensive reading in simplified texts, for the purpose of preparing the student to read at sight simple French of minimum vocabulary content. *Three hours credit each semester.*

203. INTERMEDIATE FRENCH—Modern short stories and plays are read and discussed in French. Grammar is reviewed in connection with an elementary composition book. Prerequisite, French 102 or two years of high school French. Prerequisite, grade of C or better in French 101-102 or in second year high school French. *Three hours credit.*

204. INTERMEDIATE FRENCH—A continuation of French 203. The texts in this course are chosen with a view to their value as an introduction to the study of French literature and civilization. Prerequisite, French 203 or three years of high school French. *Three hours credit.*

#### Upper Division Courses

*The prerequisite for the following courses is French 204, four years of high school French, or the consent of the instructor.*

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. *Three hours credit.*

326. FRENCH CIVILIZATION—A summary study of the geography, history, and traditions of contemporary France with a view to facilitating the reading of modern books and periodicals. *Three hours credit.*

327. COURS DE STYLE—Through practice in translating English literary selections into French and passages from French masterpieces into literary English, a study is made of the relative differences in expression between the two languages. *Three hours credit.*

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. *Three hours credit.*

329. CONVERSATIONAL FRENCH—One hour a week is spent in systematic drill on the elements of good pronunciation. The other two hours are devoted to practice in conversation based on exercises in composition. *Three hours credit.*

330. CONTEMPORARY FRENCH LITERATURE—A study of Modern France in the writings of such contemporaries as Duhamel, Gide, Giraudoux, Romains, Valéry, and others. *Three hours credit.*

411. COMPARATIVE GRAMMAR OF THE ROMANCE LANGUAGES—The morphology and syntax of modern French is studied in connection with those of any other Romance language in which the student may be interested. (Offered summer on demand.) *Three hours credit.*

GENERAL SCIENCE

Credit for these courses will not apply on curriculums leading to the degrees of Bachelor of Science, Bachelor of Engineering, or Bachelor of Arts.

121. GENERAL SCIENCE—Orientation and professional study of the universe (astronomy) and of the earth (geology). The newer concepts of matter and energy as revealed by physics and chemistry. Simple demonstrations that can be used with little equipment are presented. Emphasis is laid on modern problems of the home, transportation, and communication.

*Three hours credit.*

122. GENERAL SCIENCE—Biological principles of plant and animal life are considered. Physiology, types, distribution, and ecology are emphasized. Also, relation of life to man, his work and play and health.

*Three hours credit.*

223. GENERAL SCIENCE—Content material of courses 221 and 222 is studied with emphasis on techniques in the classroom, curriculum problems, developing methods of approach, and courses of studies in use, with special application to the elementary schools.

*Three hours credit.*

224. GENERAL SCIENCE—A study of scientific principles with emphasis on sound, light, communication, transportation, and conservation. Especially designed for students of the various secondary and special educational curricula.

*Three hours credit.*

GEOGRAPHY

102. PRINCIPLES OF GEOGRAPHY—A study of causal relationships between life activities and their physical surroundings.

*Three hours credit.*

104. ECONOMIC GEOGRAPHY—See Economics 104.

301. GEOGRAPHY OF WORLD WAR II—The distribution of raw materials; the need for markets; study of the German, Italian, and Japanese desire for empire; the English commonwealth; America as world-wide producer and as a market; the battleground of this war, and geographical problems at the peace table.

*Three hours credit.*

GEOLOGY

101. HISTORICAL GEOLOGY AND PHYSIOGRAPHY—Economic and physical geology; field trips, rocks and minerals for indoor study. Historical geology; collection and study of fossils, application of geology to industry and to world building.

*Three hours credit.*

205, 206. FIELD STUDY AND SPECIAL PROBLEMS—Open to students who have taken or are now taking geology and desire to extend their scholastic background to local conditions. Field trips in the fall and spring. The study of selected problems in the winter.

*One hour credit each semester.*

GERMAN

A major in German consists of 30 semester hours of work above the one hundred level. Of this total, six hours may be English 351-352.

## GERMAN

101-102. **ELEMENTARY GERMAN**—Introduction to the fundamental principles of grammar, drill in the declensional forms of nouns and adjectives together with elementary conversation and the reading of easy prose and poetry.  
*Three hours credit each semester.*

203. **INTERMEDIATE GERMAN**—Elementary composition based on a review of the essentials of grammar. The reading material for this course is chosen with the double purpose of furnishing a basis for the further study of German literature and providing those who wish to do technical reading with a working knowledge of the modern language. Prerequisite, C or better in German 101-102 or in second year high school German.  
*Three hours credit.*

204. **INTERMEDIATE GERMAN**—A continuation of German 203. Reading of texts of increasing difficulty accompanied by conversation and exercises in composition. Prerequisite, German 203.  
*Three hours credit.*

211-212. **CHEMICAL GERMAN**—A basic course designed to expedite the acquisition of an ability to read chemical literature in German. Prerequisite, Chemistry 111-112 or equivalent.  
*Three hours credit each semester.*

213. **INTERMEDIATE CHEMICAL GERMAN**—A continuation of German 212. Satisfies language requirements in German for the degree of Bachelor of Science with a major in chemistry. Prerequisite, German 211-212 or equivalent.  
*Three hours credit.*

### Upper Division Courses

325. **GERMAN LITERARY TRADITION**—A brief survey of significant German writers illustrated by selections from their writings. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

326. **GERMAN CIVILIZATION**—A summary study of the geography, history, and traditions of contemporary Germany, designed to serve as a background to the reading of modern authors. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

327. **GERMAN LITERARY STYLE**—Through exercises in translation, a comparison is made between modes of literary expression in German and English. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

328. **GOETHE AND SCHILLER**—Representative works of these two great German classical writers are read and discussed. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

329. **ADVANCED GERMAN GRAMMAR**—A study of the most characteristic features of German word and sentence structure with especial reference to analogies in English. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

330. **CONTEMPORARY GERMAN LITERATURE**—A survey of writers and tendencies of the twentieth century. Prerequisite, German 204 or equivalent.  
*Three hours credit.*

## GREEK

See Classical Languages.



HISTORY

A major in history consists of History 105, 106 and 30 semester hours in courses above the one hundred level. A minor consists of History 105, 106 and 15 semester hours of courses above the one hundred level.

Courses in other departments for which credit may be given toward a history major are: Political Science 215-216, 304, 305, 310, 402, Economics 301 and 302, and a maximum of six semester hours in history of art.

105, 106. HISTORY OF EUROPE SINCE THE FALL OF ROME—A survey of European civilization from the fall of Rome in 476 through the Middle Ages, the Renaissance, and the Modern Era to the present day.  
*Three hours credit each semester.*

201. HISTORY OF THE UNITED STATES TO 1850—A study of the general political, social, and economic development of the United States from the beginning of our history to the middle of the nineteenth century. Designed for sophomores.  
*Three hours credit.*

202. HISTORY OF THE UNITED STATES SINCE 1850—A continuation of History 201, giving special emphasis to the causes of the Civil War and the period which followed.  
*Three hours credit.*

Upper Division Courses

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 of the relationships between the East and West. Prerequisite: History 105, 106.  
*Three hours credit.*

311. HISTORY OF GREECE—Political and cultural growth of Greece.  
*Three hours credit.*

312. HISTORY OF ROME—The first republic, the growth of the city of Rome and the Mediterranean states, the growth of the early imperial system, the rule of the Caesars, to the decline of the empire.  
*Three hours credit.*

313, 314. ENGLISH HISTORY—From the earliest times to the present. Special emphasis is given to the social, industrial, and commercial development of England, the growth of parliament, the contest for religious freedom, the literary and intellectual development of the British people.  
*Three hours credit each semester.*

315, 316. LATIN AMERICA—The first semester will cover a study of the colonial and revolutionary periods in Latin American history. The second semester will include a study of the political, economic, and social institutions and problems of the Latin American nations from attainment of independence to the present time. Special emphasis will be given to inter-American relationships.  
*Three hours credit each semester.*

HOME ECONOMICS

101. FOOD AND NUTRITION—A study of the principles of nutrition, composition of foods, and food selection in acquiring and maintaining positive health. Meal planning and preparation to meet the needs

## HOME ECONOMICS, ITALIAN

of the individual. Scientific processes involved in the preparation and preservation of foods. One two-hour lecture and one two-hour laboratory period per week. Fee, \$2.50. *Three hours credit.*

102. FOOD PREPARATION AND SERVICE—Application of the principles of nutrition to family meal service. Food for special occasions. Problems of marketing and care of food in the home. Laboratory techniques are emphasized. One two-hour lecture and one two-hour laboratory period per week. Fee, \$2.50. *Three hours credit.*

103. CLOTHING APPRECIATION AND CONSTRUCTION—How to plan, purchase, and care for a satisfactory wardrobe for a college girl. Good taste in dress. Selection of clothes from the standpoint of color, material, and design. Construction of plain garments. One two-hour lecture and one two-hour laboratory period each week. Fee, \$2.50. *Three hours credit.*

104. CLOTHING SELECTION AND CONSTRUCTION—Factors entering into a wise choice of clothing for the family. Applications of the principles of line, design, and color to dress. Practical work in garment construction using commercial patterns. Fitting and altering ready-made garments. The clothing budget, accessories of dress, and care and upkeep of the wardrobe. One two-hour lecture and one two-hour laboratory period each week. Fee, \$2.50. *Three hours credit.*

### Upper Division Courses

305. CHILD PSYCHOLOGY—See Psychology 305.

306. PSYCHOLOGY OF ADOLESCENCE—See Psychology 306.

307. PSYCHOLOGY OF MARRIAGE AND FAMILY RELATIONS—See Psychology 307.

308. PERSONALITY AND MENTAL HYGIENE—See Psychology 308.

## ITALIAN

A major in Italian consists of 30 semester hours of work above the elementary level. Of this total as many as twelve hours may be taken in related fields with the approval of the head of the department. Credits in French, Italian, and Spanish may be combined for a major in Romance Languages.

101-102. ELEMENTARY ITALIAN—The fundamentals of grammar are taught by constant drill in syntax and inflectional forms. Spoken Italian with special attention to correct pronunciation and diction is studied in connection with the reading of simple modern texts. *Three hours credit each semester.*

203. INTERMEDIATE ITALIAN—Review of grammar in connection with elementary composition. Modern texts are read and used as a basis for conversation in Italian. Prerequisite, C or better in Italian 101-102 or second year high school Italian. *Three hours credit.*

204. INTERMEDIATE ITALIAN—A continuation of Italian 203. In this course the stories and plays are studied as literature and at the same time they serve as material for the study of the language. *Three hours credit.*

## YOUNGSTOWN COLLEGE

### Upper Division Courses

313. COMPARATIVE GRAMMAR OF THE ROMANCE LANGUAGES—The morphology and syntax of modern Italian will be studied in connection with those of any other Romance Languages with which the student may be familiar. (Offered summer on demand.)

*Three hours credit.*

325. ADVANCED ITALIAN GRAMMAR—A review of the essentials of Italian grammar in connection with the grammatical analysis of a simple modern text.

*Three hours credit.*

326. ITALIAN CIVILIZATION—A general view of the geography, history, and traditions of Modern Italy with a view to understanding its influence on our own civilization.

*Three hours credit.*

327. CORSO DI STILE—Through the translation of English literary masterpieces into Italian and of models of Italian style into English the means of expression in both languages are compared and contrasted.

*Three hours credit.*

328. ITALIAN LITERARY TRADITION—A brief survey of the principal writers of Italy with especial attention to Dante.

*Three hours credit.*

329. CONVERSATIONAL ITALIAN—A part of the time in this course is devoted to a thorough drill in pronunciation. The rest consists of practice in conversation based on a composition text.

*Three hours credit.*

330. CONTEMPORARY ITALIAN LITERATURE—A study of modern Italian literary tendencies as expressed in the principal writers of the twentieth century. The text for this course is the anthology, *Poeti d'Oggi*.

*Three hours credit.*

### JOURNALISM

The student preparing for journalism should take a major in English. See English, pages 101-104, and Curriculum, page 73.

### LATIN

See Classical Languages.

### LAW

See School of Law, page 137.

### MATHEMATICS

A major in the field of mathematics consists of a minimum of 30 semester hours, all of which shall be numbered above 200. In addition, all majors in mathematics must have a minimum of one year of college physics and a reading knowledge of French or German.

## MATHEMATICS

All students in the School of Engineering and majors in mathematics and physics will be required to take entrance examinations in the field of mathematics. Persons failing these examinations will be required to repeat their high school mathematics. At the beginning of Algebra 101, four weeks will be devoted to an intensive review of high school mathematics, after which time a placement examination will be given to determine whether the student should continue with Algebra 101 or enroll in high school mathematics. This procedure will be followed for all majors in mathematics and physics.

All prerequisites for courses in mathematics must be passed with a grade of C or better before the student will be admitted to a more advanced course.

	Hrs. Cr.
101-102 College Algebra . . . . .	6
103 Trigonometry . . . . .	2
114 Analytic Geometry . . . . .	2
*209-210 Differential and Integral Calculus I and II . . . . .	10
305 Elementary Statistics . . . . .	3
*311 Theory of Equations . . . . .	3
*314 Calculus III . . . . .	3
*315 Differential Equations . . . . .	3
*324 Analytical Mechanics—Statics . . . . .	3
*325 Analytical Mechanics—Dynamics . . . . .	3
326 Strength of Materials . . . . .	3
*330 College Geometry . . . . .	3
401, 402 Modern Engineering Mathematics . . . . .	4
404 Advanced Studies in Mathematics . . . . .	Arranged
*416 Advanced Differential Equations . . . . .	3
*432 History of Mathematics . . . . .	3
*201 and 202 General Physics . . . . .	10
* Required for all majors in mathematics.	

Courses in other departments for which credit may be given in mathematics are: Economics 305, Physics 322 and 424, and Engineering 311-312, 324, 325, 326, and 415.

101-102. COLLEGE ALGEBRA—The fundamentals of algebra are rapidly reviewed, after which advanced topics, such as progression, permutations and combinations, theory of equations, complex numbers, and determinants are studied. *Three hours credit each semester.*

## YOUNGSTOWN COLLEGE

103. TRIGONOMETRY—This course includes the study of goniometry, solution of triangles, trigonometric equations, construction of tables, and if time permits, a few elements of spherical trigonometry. Should follow or be accompanied by Mathematics 101-102. *Two hours credit.*

114. ANALYTIC GEOMETRY—This course is largely a study of equations and their graphs. Curve fittings by means of empirical equations is also included. Prerequisites, Mathematics 101-102 and 103. *Two hours credit.*

209-210. DIFFERENTIAL AND INTEGRAL CALCULUS I AND II—A thorough course in the essentials of each phase of calculus, including maxima and minima, rates, curve tracing, the definite integral, areas, volumes, with applications to physical and mechanical problems. Prerequisite, Mathematics 114. *Five hours credit each semester.*

231. THEORY OF STATISTICS—Elementary theory and application of mathematical statistics covering such topics as averages, measure of dispersion, and skewness, frequency distributions and frequency curves, correlation, and curve fitting. Applications to practical problems in student's major field. Prerequisites, Mathematics 101-102. *Three hours credit.*

### Upper Division Courses

311. THEORY OF EQUATIONS—Solution of cubic and quartic equations, Newton's method, symmetric functions, determinants, resultants, discriminants. Prerequisite, Mathematics 210. *Three hours credit.*

314. CALCULUS III—Ordinary differential equations, hyperbolic functions, partial differentiation, application of partial derivatives and multiple integrals. Prerequisite, Mathematics 209-210. *Three hours credit.*

315. DIFFERENTIAL EQUATIONS—Methods of solving ordinary differential equations with applications to problems in various fields. Prerequisite, Mathematics 209-210. *Three hours credit.*

330. COLLEGE GEOMETRY—This course makes use of the same tools and technique as does plane geometry, leading to higher relations between the elements of the triangle and of other plane figures. This course has been made a specific requirement for a teaching major or minor in mathematics by the State Board of Education. Prerequisite, junior standing. *Three hours credit.*

401, 402. MODERN ENGINEERING MATHEMATICS—The course will cover the practical application and uses of algebraic equations, graphs, and analytic geometry, and the trigonometric functions. Practical applications of differential and integral calculus and differential equations will be drawn from the fields of chemical, mechanical, and electrical engineering. Prerequisite, mathematics through calculus. *Two hours credit each semester.*

404. ADVANCED STUDIES IN MATHEMATICS—Under this heading an occasional talented student is allowed to concentrate in his senior year upon some topic of interest such as vector analysis, projecting geometry, or function theory. *Credit to be arranged.*

416. ADVANCED DIFFERENTIAL EQUATIONS—Equations of higher order, partial differential equations, and systems of equations. Prerequisite, Mathematics 315. *Three hours credit.*

432. HISTORY OF MATHEMATICS—A study of the development of the fundamental ideas of mathematics through calculus from antiquity down to the present. Prerequisite, Mathematics 209-210 or consent of instructor. *Three hours credit.*

MUSIC

See The Dana School of Music.

NURSING

403. WARD MANAGEMENT AND TEACHING—This course is planned to enable the graduate nurse interested in ward management and teaching to learn the fundamental principles relating to the management of the head nurse unit and the duties of the head nurse as teacher, including discussions of the numerous types of problems which arise on the head nurse unit. For admission to this course the student must have had one year of experience as a graduate nurse, or be actually engaged in head nurse work. *Three hours credit.*

ORIENTATION

This course aims to help the new college student to adjust himself quickly to college life. The problems studied include: how to study in college; how to select college courses; how to select a life work. Lectures, library readings, and quizzes. Required of all freshmen students. *One hour credit.*

PHILOSOPHY AND RELIGION

For major requirements, see the departmental adviser.

105. OLD TESTAMENT—An introduction to the writings of the Old Testament; 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 the life of the Hebrews, and the contribution of the Hebrews to the life of mankind. *Two hours credit.*

106. NEW TESTAMENT—An introduction to the writings of the New Testament; the authorship, origin, and meaning of the various books; the Old Testament as a background for the New, and what is unique in the New Testament; the problem of the Synoptic Gospels and their relation to the fourth gospel; the letters of Paul and the developing Christian church within New Testament times. *Two hours credit.*

201. THE SEARCH FOR A CHRISTIAN SOCIETY—Such problems will be considered as Christians in modern society, God and his activity, man and his possibilities, the age-long search for the Kingdom of God, implementing a gospel of love, and the Church and the new world mind. *Two hours credit.*

202. THE SPIRITUAL FOUNDATIONS OF A WORLD COMMUNITY—Such problems will be considered as the methods of preserving peace, international justice, moral law, the church's responsibility, Christian strategy, a Christian civilization, and the sovereignty of God. *Two hours credit.*

203. INTRODUCTION TO PHILOSOPHY—A lecture and discussion course designed to introduce the student to the methods, problems, and fundamental conceptions of philosophy, and to the significance of the higher values of life—moral, aesthetic, and religious. *Three hours credit.*

207. ETHICS OF JESUS—A study of the records of Matthew, Mark, and Luke, with the object of discovering Jesus' conception of life, and the ethical principles revealed in both his teaching and actions. The purpose of the course is to furnish a basis for the student's development of his own philosophy of life. *Three hours credit.*

208. THE BEGINNING OF CHRISTIANITY—An introduction to the Palestinian environment, the Jewish tradition, the Greco-Roman culture of the age, the career and teaching of Jesus, the organization of the Church, and its expansion in the Roman Empire. *Three hours credit.*

220. LOGIC—An introductory study of 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: categorical, disjunctive and conditional, and its laws. Formal and material fallacies. Inductive reasoning. *Three hours credit.*

221. PHILOSOPHY OF LOWER ANIMATE NATURE—The comparison of living and non-living things to discover the meaning of life. Its definition and its cause. Mechanism. The nature of the vital principle of plant and animal sensation. The nature of sensation and what it implies; the cerebro-spinal system. The question of animal intelligence. A philosophical discussion of evolution. *Three hours credit.*

#### Upper Division Courses

301. HISTORY OF PHILOSOPHY—The development of philosophic thought from the time of the early Greeks to the end of the Middle Ages. *Three hours credit.*

302. HISTORY OF PHILOSOPHY—Continuation of Philosophy 301 from the end of the Middle Ages to the present day. *Three hours credit.*

303. HISTORY OF SOCIAL THOUGHT—See Sociology 303.

305. ETHICS—A study of human nature, biological and psychological bases of behavior, duty, conscience, habit, freedom, the nature of right and wrong, good and bad, and analysis of the principal ethical theories. *Three hours credit.*

306. ETHICS AND SOCIAL PROBLEMS—Conflicts of ideals within society and the search for bases of agreement; the nature and validity of law, custom, public opinion; effects of social change and cultural lag, the relation of means and ends, the formation of public policy; the ethical principles involved in the most important social problems of today, such as capital and labor relations, democracy and authoritarianism, individualism, socialism, the supremacy of the state, imperialism; social experimentalism, safeguards of freedom. *Three hours credit.*

310. MAKING OF THE MODERN MIND—A study of the philosophic, religious, scientific, political, and social developments out of which our present patterns of thought have arisen. Prerequisites, History 105, 106. *Three hours credit.*

315. RELIGIONS OF THE WORLD—A study of Hinduism, Buddhism, Confucianism, Taoism, Zoroastrianism, Mohammedanism, Judaism, and Christianity. *Three hours credit.*

316. CONTEMPORARY RELIGIOUS THOUGHT—A study of the religious convictions of the leading thinkers of today—American, British, German, Oriental. *Two hours credit.*

322. PHILOSOPHY OF MAN—A discussion of the sentient, emotional, and rational life of man. Abnormal manifestations and attempted explanations of the psycho-analyst, the analytical psychologist, and the

## PHILOSOPHY AND RELIGION, PHYSICAL EDUCATION

individual psychologist. The nature of rational thought and of the principles required to explain it. The explanation of the modern psychologist. Freedom of the human will vs. behaviorism. The nature of the human soul and its corollaries, the origin and destiny of the soul. Prerequisite, Philosophy and Religion 220 or 221. *Three hours credit.*

323. THEORIES OF KNOWLEDGE—The nature of the epistemological problem and its attempted solution. The position of the skeptic, the pragmatist, the sensist, the idealist. The solution of the moderate realist. The nature of truth and certitude, their sources and ultimate criterion. Prerequisite, Philosophy 220 or 221. *Three hours credit.*

324. PHILOSOPHY OF BEING—A study of the metaphysical concept of abstract being. Essence and existence; act and potency; substance and accident. The nature of the possibles. Cause and causality. The meaning and nature of relations. Prerequisite, Philosophy and Religion 220 or 221. *Three hours credit.*

325. METAPHYSICS OF MATTER—What is matter? A philosophical concept of its nature and constitution. Hylomorphism. The origin of the physical universe. The physical laws. Miracles. The space-time concepts. Prerequisite, Philosophy 220 or 221. *Three hours credit.*

326. PHILOSOPHY OF GOD—Proofs for the existence of God. The nature of God and his Divine attributes. God's knowledge and the various media in which God knows. The "scientia media." Providence and the problem of evil. Miracles. Prerequisite, Philosophy and Religion 220 or 221. *Three hours credit.*

427. MORAL CONDUCT—Basic Principles—The definition of moral good and moral evil established by positive proof. The nature of morality. The true norm of morality. False norms. The existence and qualities of the Eternal and Natural Laws. Obligation and sanction of the Natural Law. Conscience. The nature of rights and duties. The existence of natural rights. Prerequisite, Philosophy and Religion 322. *Three hours credit.*

428. MORAL CONDUCT—Specific Applications—The application of the precepts of the natural law to specific classes of human activity. Man's duties to God; the natural right to property; rights and duties of conjugal society; marriage and divorce. Industrial ethics; the solution of the communist; wages, strikes, labor unions. The nature of civil society. Prerequisite, Philosophy and Religion 427. *Three hours credit.*

431. THE PROBLEMS OF RELIGION—An objective examination of the areas of human experience, individual and social, in which religion is primarily operative. The classic faiths of mankind, as well as certain present day cults, will be studied in an attempt to determine the problems for which humanity has traditionally sought a religious solution. *Three hours credit.*

## PHYSICAL EDUCATION

A medical examination by the college medical examiner is required of all students who are taking physical education. Regulation uniforms are required of all students and should be purchased after consultation with the physical education instructor.



YOUNGSTOWN COLLEGE

101, 102. PHYSICAL EDUCATION (Men)—Two hours of physical education each week throughout the year. The course includes general body building exercises, gymnastic and athletic games, and competitive sports, with advanced elective activities for the physically superior groups. Required of freshmen. *One-half hour credit each semester.*

105. HYGIENE (Men)—Personal hygiene. Two hours each week for one semester. *Two hours credit.*

106. HYGIENE (Women)—Personal hygiene. Two hours each week for one semester. *Two hours credit.*

111, 112. RECREATIONAL ACTIVITIES (Men)—Two hours each week throughout the year. Recreational activities adjusted to the needs of individuals who are advised by a physician not to engage in Physical Education 101, 102. *One-half hour credit each semester.*

113, 114. SOCIAL SPORTS (Women)—Two hours each week throughout the year. This course will include shuffleboard, badminton, deck tennis, and ping-pong. It will give the women students an opportunity to develop interest, joy, and satisfaction in many skills which are meaningful now and which will continue into the mature use of leisure time. *One-half hour credit each semester.*

115, 116. TEAM SPORTS (Women)—Two hours each week throughout the year. This course will include basketball, volleyball, and softball. The course is primarily designed for women interested in competitive sports. *One-half hour credit each semester.*

117, 118. GAMES (Women)—Two hours each week throughout the year. This course is set up primarily for elementary majors in the field of education or for any woman who expects to do work with children. Ideal recreational programs for the various grades and age levels will be planned and different methods of conducting such periods will be presented. Various types of relays and children's games will be taught. *One-half hour credit each semester.*

119, 120. BEGINNING SWIMMING (Women)—Two hours each week throughout the year. *One-half hour credit each semester.*

121, 122. EURHYTHMICS—Musical education by means of movement. It aims to vitalize the musicality and rhythm of the whole personality, mind as well as body, and to help the musician not only to feel the music, but also to express and convey it to others. The studies are grouped as follows: body technique and rhythm combined with breathing; musical and rhythmic studies in space, individually and in groups; educational exercises for smooth coordination between the nervous and muscular system for quick reactions, association and disassociation. Required of all music majors as a substitute for physical education and recommended for students who are eligible for Physical Education 111, 112, or 113, 114. *One-half hour credit each semester.*

205, 206. ADVANCED PHYSICAL EDUCATION (Men)—Two hours each week. A continuation of Physical Education 101, 102. *One-half hour credit each semester.*

211, 212. RECREATIONAL ACTIVITIES (Men)—Two hours each week. A continuation of Physical Education 111, 112. *One-half hour credit each semester.*

213, 214. SOCIAL SPORTS (Women)—Two hours each week throughout the year. A continuation of Physical Education 113, 114. *One-half hour credit each semester.*

215, 216. TEAM SPORTS (Women)—Two hours each week throughout the year. A continuation of Physical Education 115, 116. *One-half hour credit each semester.*

## PHYSICAL EDUCATION

217, 218. GAMES (Women)—Two hours each week throughout the year. A continuation of Physical Education 117, 118.

*One-half hour credit each semester.*

219, 220. INTERMEDIATE AND ADVANCED SWIMMING (Women)—Two hours each week throughout the year. A continuation of Physical Education 119, 120.

*One-half hour credit each semester.*

221, 222. EURHYTHMICS—Continuation of Eurhythmics 121, 122.

*One-half hour credit each semester.*

### Upper Division Courses

303. PRINCIPLES OF HEALTH AND PHYSICAL EDUCATION (Men and Women)—This is an elementary course in the techniques and skills involved in the teaching of health and physical education. Principles and ideals of health are related to the processes which make for a sound physical education.

*Two hours credit.*

311-312. THEORY AND PRACTICE OF PHYSICAL EDUCATION OTHER THAN ATHLETICS (Men and Women)—Games of low organization, relays, shuttles, stunts, apparatus, tumbling, swimming, dancing, and elementary skills are taught in this course. The place of games in a physical education and recreation program is stressed. Games in the gymnasium and on the playground, which can easily be taught and give the participant satisfaction, are developed in both theory and practice.

*Two hours credit each semester.*

321. HYGIENE FOR ELEMENTARY GRADES—This course includes health habits, and ways and means of ingraining them in pupils, use of the snellen chart, auditory acuity tests, principles governing seating, lighting, air space, illuminating information to motivate health habits, and the recognition of common disorders and malnutrition in children. The teacher-in-training will be made aware that health should be taught at every opportunity and in every possible connection in the classroom and on the playground. The possibilities of the home project as a means of projecting the training into the home will be studied.

*Three hours credit.*

322. HEALTH ACTIVITIES FOR ELEMENTARY GRADES—The prospective teacher will be equipped with an extensive program of games of low organization suitable for the grades, rhythms, dancing and singing games, mimetic and story plays, hunting and chasing games, relays, stunts and self-testing activities, games for use in the schoolroom, and reasonable sports and games for use in and out of school. The teacher-in-training will learn the games, play them in class, and become familiar with their purposes and the method of teaching them to children. They will be viewed not only from a health standpoint but also as opportunities for practicing desirable traits.

*Three hours credit.*

400. TEACHING OF HEALTH (Men and Women)—This course relies on the gathering of materials from the specialists in the field of health education. Seminar and tutorial instruction.

*Two hours credit.*

403. ORGANIZATION AND ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION (Men and Women)—Physical education as it is organized today requires administrators of executive ability. Techniques involved in organization and administration of intramural and inter-scholastic activity are studied and practiced.

*Two hours credit.*

404. ORGANIZATION AND ADMINISTRATION OF PLAY-  
GROUNDS AND RECREATION—Techniques involved in organization and administration of playgrounds and recreation are studied and practiced.

*Three hours credit.*

## YOUNGSTOWN COLLEGE

409. THEORY AND PRACTICE OF ATHLETIC COACHING (Men)—Skills, strategy, and systems in the field of athletics are studied as they are related to basketball, baseball, track, soccer, and speedball. The student will learn the rules of the game and how to play, officiate, and coach these types of activity. *Two hours credit.*

410. FOOTBALL (Men)—This course is devoted to the study of the offensive and defensive characteristics of various systems. The student will receive instruction and actual practice by coaching a squad of players. *Two hours credit.*

411-412. THEORY AND PRACTICE OF PHYSICAL EDUCATION (Women)—Instruction and practical experience in methods, materials, and programs of physical education for elementary and secondary schools. *Two hours credit each semester.*

415. SCHOOL HEALTH PROBLEMS (Men and Women)—The student of physical education must be aware of the physical defects prevalent among the pupils in the classroom. Health, physical fitness, dental health, cleanliness, ventilation, lighting, heating, sanitation, school safety, and safety with automobiles are studied. *Two hours credit.*

### PHYSICS

The instructional work in physics has been organized with the view of obtaining the following objectives: (1) To acquaint the student who is pursuing a non-specialized course of study with the place of physics in the modern world and to train him in the scientific methods of work; (2) to provide basic training in physics for engineering and pre-medical students; (3) to offer a well-rounded training to those students pursuing a course of study leading to the degrees of Bachelor of Science in Education, Bachelor of Science, or Bachelor of Arts. In this category should be those students who desire to prepare themselves for teaching positions in the secondary schools, positions requiring training in physics and scientific work with commercial companies, or leading to graduate work in physics and mathematics.

All prerequisites for courses in physics must be passed with a grade of C or better before a student will be admitted to a more advanced course.

Courses in other departments for which credit may be given in physics are: Engineering 203, 204, 311-312, 313-314, 324, 325, 328, 415, 416, and Economics 305.

For requirements, see curriculum, page 75, and mathematics requirements, page 111.

## PHYSICS

151. **ELEMENTARY PHOTOGRAPHY**—This course is planned for the average camera enthusiast. It will be developed as a science on a scientific basis. The nature of light, lenses, the elementary chemistry of photography, etc., will be included. Demonstration and practice in picture taking for various purposes and effects. Miniature camera work will be compared with other types. Laboratory work will include developing, printing, and enlarging. Various grades of films and papers will be used. Color work will also be included. Fee, \$2.50. *Three hours credit.*

201. **GENERAL PHYSICS—MECHANICS, HEAT, AND SOUND**—This course covers the study of 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; sound and hearing; combination of sound waves; noises, tones, and scales; wave motion and vibration. Three hours lecture and recitation and four hours laboratory each week. Prerequisite, Mathematics 101-102 required, Mathematics 103 highly desirable. Fee, \$5.00. *Five hours credit.*

202. **GENERAL PHYSICS—LIGHT AND ELECTRICITY**—This course covers the study of the propagation of light by wave motion; mirrors and lenses; reflection, refraction, absorption, and dispersion of light; diffraction and interference; optical instruments; fundamental phenomena of electricity at rest; introduction to current electricity; the nature and production of electric current; electric currents and magnetic phenomena; Ohm's and Kirchoff's Laws; measurements in simple circuits, electrical energy, and power; elementary electrical oscillations and radio. Three hours lecture and recitation and four hours laboratory each week. Prerequisite, Physics 201. Fee, \$5.00. *Five hours credit.*

252. **ADVANCED PHOTOGRAPHY**—Studio work covering commercial and illustrative photography, copying, retouching, including actual practice with cameras, lights, filters, lenses, exposures, etc. Individual dark room instruction on negative processing, contact printing, enlarging. Fundamentals of composition, photographic make-up, and portraiture. Prerequisite, Physics 151. Fee, \$2.50. (Offered on demand.) *Three hours credit.*

### Upper Division Courses

303. **ELECTRICITY AND MAGNETISM**—A study of the fundamental laws of electrostatics and electromagnetism. Prerequisite, Mathematics 209-210. *Three hours credit.*

317. **THERMODYNAMICS**—This course covers the fundamentals regarding energy and its transformation, general energy equations, characteristic equations of a perfect gas, 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 and feedwater heaters, draft apparatus, chimneys and fans. Laboratory work covers approximate analysis performance. Three hours lecture and recitation and two hours laboratory each week. Prerequisites, Physics 201 and 202, Mathematics 209-210. Fee, \$10.00. *Four hours credit.*

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. Prerequisites, Physics 201 and 202, Mathematics 315. Fee, \$5.00. *Three hours credit.*

424. **HISTORY OF PHYSICS**—A study of the history of physics from the early times, the lives of the great physicists, and the development of the physical laboratory. Prerequisite, Mathematics 209-210. *Three hours credit.*

## YOUNGSTOWN COLLEGE

### POLITICAL SCIENCE

A major in political science consists of 24 semester hours in addition to Social Science 101, 102, 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.

Courses in other departments for which credit may be given on the Political Science major are: Economics 402 and History 308.

201. AMERICAN NATIONAL GOVERNMENT AND POLITICS—A study of the historical background, form, structure, administrative organization, and expanding activities of the federal government.

*Three hours credit.*

202. AMERICAN STATE AND LOCAL GOVERNMENT—A study of the form, structure, administrative organization and functioning of state, county, and municipal government in the United States.

*Three hours credit.*

215-216. THE 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 students of law and political science.

*Three hours credit each semester.*

#### Upper Division Courses

304, 305. INTERNATIONAL RELATIONS—The main motives in modern international politics; imperialism; the economic background; the first World War; the United States and Europe; the United States and the Far East; the second World War; postwar problems.

*Three hours credit each semester.*

306. GOVERNMENTS OF EUROPE—A survey of the governments and political institutions of European countries with particular emphasis upon Great Britain, France, Germany, Italy, and Russia. Current events and problems reflecting the opposing philosophies of totalitarian and democratic nations will be examined in the light of present and post-war developments.

*Three hours credit.*

309. CONSTITUTIONAL HISTORY OF THE UNITED STATES—A study of the formation, amendment, and interpretation of the Constitution of the United States. Of special interest to pre-law students. Prerequisites, Social Science 101 and 102; prerequisite or concurrent, History 201 and 202.

*Three hours credit.*

310. CONSTITUTIONAL HISTORY OF THE UNITED STATES—Continuation of Political Science 309.

*Three hours credit.*

401. MUNICIPAL GOVERNMENT AND ADMINISTRATION—A study of the principles and plans of city government in the United States. Supplemented by occasional lectures of local officials concerning municipal problems peculiar to Youngstown. The problems of the modern city

## POLITICAL SCIENCE, PSYCHOLOGY

—home rule, public utilities, administrative organization, city finance, city planning, public health and recreation, schools and other vital problems are studied. Prerequisite, Social Science 102. *Three hours credit.*

402. AMERICAN POLITICAL PARTIES—The function of political parties in modern society, the history of American parties, their principles, organizations, conventions, campaign methods, and problems. Prerequisites, Social Science 102, Political Science 201 and 202. *Three hours credit.*

### PSYCHOLOGY

For major requirements, see the departmental adviser.

201. GENERAL PSYCHOLOGY—A study of the fundamental principles of human behavior. This includes a brief survey of the field, the relationship of physiological structure to behavior, the study of the nature and development of perception, emotion, behavior, and other factors in the integration of personality. Prerequisite to all other courses in the field. *Three hours credit.*

202. PSYCHOLOGY OF EDUCATION—A study of those principles and laws of psychology that form the background and underlying conditions for learning and teaching, and for the growth of a successful personality. Prerequisite, Psychology 201. *Three hours credit.*

#### Upper Division Courses

300. SOCIAL PSYCHOLOGY—A study of psychological principles and methods applied to social problems and factors influencing social life. Prerequisite, Psychology 201. *Three hours credit.*

301. APPLIED PSYCHOLOGY—A study of the psychological factors and principles involved in human relationships in marketing, law, advertising, medicine, selling, and personnel management, as found in business and professional life. Prerequisite, Psychology 201. *Three hours credit.*

302. PSYCHOLOGY OF THE ABNORMAL—A study of the causes, nature, and trend of mental maladjustments and injured personality, especially the major trends and illnesses, and stressing the place of mental hygiene in this study. Prerequisite, Psychology 201. *Three hours credit.*

303. PSYCHOLOGY OF RELIGION—A study of the psychological facts and principles affecting religious experiences, sense of sin, conversion, character changes, faith, worship, development of personality, and mental adjustments as a hygiene for dynamic, useful, and happy living. Prerequisite, Psychology 201. *Three hours credit.*

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. Recommended for elementary teachers. Prerequisite, Psychology 201. *Three hours credit.*

306. PSYCHOLOGY OF ADOLESCENCE—A study of characteristics and behavior problems of teen-age children. Recommended for high school teachers. Prerequisite, Psychology 201. *Three hours credit.*

307. PSYCHOLOGY OF MARRIAGE AND FAMILY RELATIONS—A practical study of social and psychological factors which contribute to marital success and happiness, including intersex relations, eugenics, mental hygiene, child training, home finance and community usefulness. Especially recommended for those who have little advanced credit in psychology or sociology. Prerequisites, Psychology 201, Biology 103, Social Science 101 and 102, and junior standing. Fee, \$5.00. *Three hours credit.*

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308. PERSONALITY AND MENTAL HYGIENE—A study of those principles and habits which insure a well-balanced personality and a sound mind. Prerequisite, Psychology 201. Fee, \$1.00.

*Three hours credit.*

309. PSYCHOLOGY OF PERSONNEL SELECTION AND PLACEMENT—Designed to acquaint the student with the application of the principles and techniques of psychology to business, industry, and management, with special emphasis on methods of selecting and training personnel. The human factor in business and industrial management, fatigue and monotony and other factors affecting worker efficiency, mental health, and morale. Prerequisite, Psychology 201. Fee, \$2.00.

*Two hours credit.*

310. PSYCHOLOGICAL ASPECTS OF PERSONNEL RELATIONS—This course will be concerned with the central problem of how people get along with each other, how this is sometimes difficult, and how resentments develop and effect relationship and work. Underlying personality needs will be discussed. Some of the essential elements in interviews and group discussions will be included. The course will be made practical and useful through discussion and actual problems. A point of view for a few basic concepts will be given which should assist in understanding why groups and persons act as they do. Prerequisite, Psychology 201.

*Two hours credit.*

405. INTERVIEWING AND COUNSELING—This course is a study of the basic principles, purposes, and psychological problems involved in interviewing; discussions of interests and problems of members of the class; special purpose interviews and counseling, recording and evaluation of facts; reporting and discussion of actual interviews. Prerequisite, Psychology 201.

*Two hours credit.*

406. VOCATIONAL GUIDANCE—A study of the techniques of vocational guidance and their application to high school students, college students, vocational rehabilitation subjects, and adults in general.

*Two hours credit.*

425. GUIDANCE OF HIGH SCHOOL STUDENTS—This course covers principles and procedures in vocational, educational, personal and social counseling at high school level. The discovery of the problems and needs of high school students will be basic. Methods of interviewing and testing, as well as classroom procedures and organization of guidance programs will be dealt with.

*Two hours credit.*

426. STUDY OF AN INDIVIDUAL CHILD—The purpose of the course will be to assist teachers, social workers, and parents in studying and working with individual children whose adjustment and development is being blocked. Each student will be expected to work with some one child or youth. Interviews, tests, records, analyses, and corrective work will be utilized. Major emphasis, however, will be upon corrective procedures. Some attention will be given to remedial work in school subjects.

*Two hours credit.*

427. TECHNIQUES OF GROUP CONFERENCE AND DISCUSSION—This course will emphasize and give practice in the conducting of group conferences and of group discussion so that basic personality needs are met and growth and effective action take place. It will be designed to help administrators, executives, department heads, and committee chairmen who have responsibility for planning and getting work done with groups of people. It should be helpful to leaders of discussions in areas such as Sunday School class teaching, P. T. A., family life education, and regular classroom teaching. The course will deal with methods that may be used in business, industry, and education, for the development of group morale.

*Two hours credit.*

## RUSSIAN, SECRETARIAL STUDIES

### RUSSIAN

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 so as to make possible the acquisition of the essential vocabulary of conversation in a minimum of time.  
*Three hours credit each semester.*

203. INTERMEDIATE RUSSIAN—Elementary composition based on a review of the essentials of grammar. The reading material for the course is chosen with the double purpose of furnishing a basis for the further study of Russian literature and providing those who wish to do technical reading with a working knowledge of the modern language. Prerequisite, C or better in Russian 101-102 or in second year high school Russian.  
*Three hours credit.*

204. INTERMEDIATE RUSSIAN—A continuation of Russian 203. Reading of texts of increasing difficulty accompanied by conversation and exercises in composition. Prerequisite, Russian 203.  
*Three hours credit.*

305. RUSSIAN LITERATURE—A continuation of Russian 204 with more difficult selections from the great writers of Russia.  
*Three hours credit.*

### SECRETARIAL STUDIES

For curriculums, see pages 66 and 77.

100. TYPEWRITING—This course is for beginners. A speed of 20 words a minute is required for completion of this course.  
*Two hours credit.*

101. TYPEWRITING—Consists of advanced letter writing, legal papers, tabulating, filling in forms, and speed work. A speed of 20 words a minute is required for admission to this course and a speed of 40 words a minute must be attained for credit.  
*Two hours credit.*

104-105-106. BOOKKEEPING—First semester, single proprietorship; second semester, partnership; third semester, corporation accounting.  
*Two hours credit each semester.*

109. BUSINESS MATHEMATICS—Computation for accounting, interest, discount, pay roll, social security, insurance, tax, etc.  
*Two hours credit.*

200. SHORTHAND—This course is for beginners. Mastery of the shorthand manual and speed study text is required for completion.  
*Four hours credit.*

201. TRANSCRIPTION—Advanced course in typewriting and transcribing. The student is required to attain a typing speed of 60 words per minute.  
*Two hours credit.*

207. BUSINESS ENGLISH AND CORRESPONDENCE—This course includes a study of business terms; the psychology, mechanics, and principles of effective letter writing; practice in correcting common errors and in writing different types of letters.  
*Three hours credit.*

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.  
*Three hours credit.*



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215, 216. OFFICE MACHINES—A working knowledge of typical machines used in offices, such as adding and calculating machines, dictaphone, mimeographing, and bookkeeping machines.

*Three hours credit.*

### Upper Division Courses

301. SHORTHAND—Beginning dictation and transcription. This course is planned for students who have completed the shorthand manual and speed study text. All students must pass the theory test for admission to this class. A speed of 80 words per minute must be attained for credit.

*Four hours credit.*

302. SHORTHAND—Advanced dictation at 100 words per minute and transcription at the rate of 25 words per minute.

*Two hours credit.*

303. SECRETARIAL DICTATION—Advanced dictation at 120 words per minute and transcription at the rate of 35 words per minute.

*Two hours credit.*

304. ADVANCED DICTATION AND TRANSCRIPTION—This course is devoted to acquiring greater speed and accuracy in transcription.

*Two hours credit.*

403. OFFICE PRACTICE—Application of theory to practice: consists of typical office problems, dictation, transcription, copy-work, answering of letters, filling in forms, and discussion of office procedure. Prerequisite: Business Education 301.

*Three hours credit.*

404. FILING AND INDEXING—A study of the basic principles of filing and indexing. Laboratory work consists of the use of practice equipment for the most widely used filing procedures.

*One hour credit.*

### SOCIAL SCIENCE

All students of the college working toward a degree are required to take Social Science 101, 102, 201, and 202, with the exception of engineering students who take only Social Science 101 and 102.

A major in social science consists of 45 semester hours, selected from the following departments: economics, history, philosophy, political science, psychology, sociology, and law. (For law credit, see statement, page 50.) Selection of the particular courses which constitute this major should be made in consultation with the instructor in any one of the social science fields.

A minor in social science consists of 15 semester hours, all of which must be in some one of the social sciences.

101. SOCIAL SCIENCE—A study of the principles of economics against a sociological background.

*Three hours credit.*

102. SOCIAL SCIENCE—A study of American government against a socio-economic background.

*Three hours credit.*

201. SOCIAL SCIENCE—History of the United States to 1850. A study of the general political, social, and economic developments of the United States from the beginning of our history to the middle of the nineteenth century.

*Three hours credit.*

202. SOCIAL SCIENCE—History of the United States since 1850. A continuation of Social Science 201, giving special emphasis to the causes of the Civil War and the period which followed. *Three hours credit.*

### SOCIOLOGY

A major in sociology consists of 24 semester hours in addition to Social Science 101, 102, 201, and 202. The major is designed to furnish needed background for students contemplating professional training in social work, law, teaching, and allied fields.

Courses in other departments for which credit may be given toward a sociology major are: Social Science 101, 102, 201, 202, Psychology 307, Education 308, and Economics 402.

203. PRINCIPLES OF SOCIOLOGY—Underlying principles of the science of society, including types of societies, groups, and classes; laws of population, marriage, family; social basis of the state and of religion; the evolution of culture. For sociology majors only. *Three hours credit.*

204. SOCIAL ORIGINS—The origin and diffusion and continuity of primitive social institutions with their relation to social phenomena. Prerequisites, Social Science 101 and 102. *Three hours credit.*

#### Upper Division Courses

301. CRIME AND PENAL INSTITUTIONS—A study of the nature and causes of crime and criminals, our present methods of apprehending the criminal, and the problems connected with our penal institutions. Prerequisites, Social Science 101 and 102. *Three hours credit.*

302. SOCIAL PATHOLOGY—A study of the causes, present status, and possible remedies for a selected number of social maladjustments. An examination of defective social structure and defective social control in their relation to youth, war, poverty, vice, suicide. A student who has taken the course in Social Disorganization should not take this course. *Three hours credit.*

303. HISTORY OF SOCIAL THOUGHT—A course surveying the evolution of social theory with emphasis upon various schools of thought of the present time. Prerequisites, Social Science 101 and 102. *Three hours credit.*

403. URBAN SOCIAL WELFARE—Survey of the field of social and public welfare services; an analysis of programs of local organizations and agencies; their interrelationships with national welfare services and with other types of local agencies. Field visits arranged to local social agencies. *Three hours credit.*

404. 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. Group valuations, praise, rewards, symbols, slogans, advertising, ridicule, and intimidations in relation to individual behavior, leadership, and propaganda. *Three hours credit.*

### SPANISH

A major in Spanish consists of 30 semester hours of work above the elementary level. Of this total as many as 12 hours may be taken in related fields with the approval of the head

of the department. Credits in French, Italian, and Spanish may be combined for a major in Romance Languages.

101-102. ELEMENTARY SPANISH—The essentials of Spanish grammar are taught through written and oral exercises and are supplemented with the reading of simple texts. *Three hours credit each semester.*

203. INTERMEDIATE SPANISH—Review of grammar with imitative exercises in composition. Reading of selected classics of Spanish and Spanish-American prose narration. Prerequisite, C or better in Spanish 101-102 or in second year high school Spanish. *Three hours credit.*

204. INTERMEDIATE SPANISH—A continuation of Spanish 203. Reading of modern stories and plays with conversational exercises based upon the text. *Three hours credit.*

#### Upper Division Courses

*The prerequisite for the following courses is Spanish 204, four years of high school Spanish, or the consent of the instructor.*

325. CONVERSATIONAL SPANISH—One hour a week is spent in exercises designed to facilitate the acquisition of a correct pronunciation. The other two hours are devoted to conversation based on composition assignments. *Three hours credit.*

326. SPANISH CIVILIZATION—A summary study of the tradition, history, and geography of Spain and Spanish speaking countries. The material of this course is fundamental to the understanding of Spanish books and periodicals. *Three hours credit.*

327. CURSO DE ESTILO—Through the preparation and study of translations from English to Spanish and from Spanish to English an insight is given into the fundamental differences in expression between the two languages. *Three hours credit.*

328. SPANISH LITERARY TRADITION—A brief survey of the principal writers of Spain together with the study of selections from some of their principal works. *Three hours credit.*

329. JOURNALISTIC AND COMMERCIAL SPANISH—A study of selected periodicals from Mexico and other Spanish-American countries, with special attention to the vocabulary of advertising. One hour a week is devoted to practice in commercial correspondence. *Three hours credit.*

330. CONTEMPORARY LITERATURE IN SPANISH—A study of the principal writers of the twentieth century through their work: Baroja, Unamuno, Valle-Inclán, Azuela, Goy de Silva, and others. *Three hours credit.*

331-332. ELEMENTARY PORTUGUESE—Basic elements of the language, with practice in easy conversation and exercises in the written language. If all members of the class have studied Spanish, considerable reading will be done in elementary and intermediate Brazilian and Portuguese texts. *Three hours credit each semester.*

400. COMMERCIAL SPANISH—Continuation of Spanish 329 with practice in the translation of business letters. *Three hours credit.*

401. CLASSICAL SPANISH LITERATURE—A study of the literature of the Golden Age with special emphasis on Cervantes, Lope de Vega, and Calderon. *Three hours credit.*

411. COMPARATIVE GRAMMAR OF THE ROMANCE LANGUAGES—The morphology and syntax of modern Spanish is studied in connection with those of any other Romance language in which the student may be interested. (Offered summer on demand.) *Three hours credit.*

#### SPEECH

See English.

# The Dana School of Music

The Dana School of Music is the department of music of the College of Arts and Sciences of Youngstown College. Its purpose is to provide a thorough course of instruction in all branches of music. Students have ample opportunity to secure practical use of their training through participation in various musical organizations and activities.

## Courses Leading to Degrees

There are three courses available to students regularly enrolled in the college. For professional musicians, there is the Bachelor of Music degree providing maximum concentration on musical subjects. For those students who wish to teach in the public schools, there is the curriculum leading to the Bachelor of Science in Education degree, offering courses in the field of education as well as music according to the requirements of the State Department of Education. For students who plan to teach in college, or wish a literary background for their music study, there is the Bachelor of Arts degree with a major in music. Entrance to these courses requires that the student be a high school graduate. Entrance requirements will be found on pages 45-47 and 129-130.

Required curriculums for degrees will be found on pages 67-69. General and group requirements for degrees will be found on pages 48-52, and 131-132.

## Special Courses

The Adult Department provides musical training for mature students who wish to improve their playing ability or to study the art from a cultural standpoint, but who for technical reasons cannot enter the degree courses. Private lessons on all instruments and admission to the college classes are available to such students.

## Plan of Instruction

Musical instruction is based on private lessons in instrumental and vocal study and class instruction in the other musical subjects. Every student is given three half-hour private

lessons each week, two in the applied music major, and one in the minor. For each weekly lesson, the student is allowed one hour of practice each day, or a total of fifteen hours per week. This practice time is definitely assigned, and is guarded against interruption. Classes in theory, history, and the other standard music subjects, and regular rehearsals of band, orchestra, and chapel choir give the student a well-rounded schedule of musical experience.

At the end of each semester, examinations in all divisions of applied music are held before a committee of the faculty. The results of the examinations determine the promotion of the student.

In addition to his major study in music, each student pursues courses in the liberal arts college, the number depending upon the degree for which the student is a candidate. Music students may participate in all the student activities of the college including football games, the various cultural events, and the social activities which are an important part of a college education.

### Practical Experience

It is important that every student have ample opportunity to put his musical training to practical use during the time he is in school. By doing so, he gains experience in judging the values of various items in his training program, and becomes familiar with his own weaknesses at a time when correction is a simple matter. The Dana School of Music students gain this experience in many ways. A series of student recitals is given during the school year, and each student is encouraged to make several appearances. Youngstown's two radio stations provide broadcasting experience for students at frequent intervals, and the Youngstown Symphony Orchestra—a professional group of eighty players—has opened its membership to any student who can qualify. Professional recording equipment is available for the use of students by which accurate checks may be made on individual progress at regular intervals. Many other opportunities, such as playing for church services, choir membership, and providing entertainment for social gatherings are also available.

## Placement Service

Because of its many alumni, The Dana School of Music is able to give its graduates a considerable amount of assistance in finding positions in the musical profession. Contacts extend through forty-two of the forty-eight states, and each year the school receives a number of requests for graduates. These requests come from all branches of the profession, from teaching to every type of professional playing. Through the Alumni Association, a continuing relationship is maintained between the school and its graduates, and the services of this association are continually increasing.

## General Information

For information pertaining to fees, entrance requirements, degree requirements, curriculums, and other matters pertaining to The Dana School of Music not included in this section, refer to the index.

## Requirements for Admission to Courses in Applied Music

Students majoring in applied music must fulfill the following entrance requirements.

*Piano*—Students must be prepared to play before a committee of the faculty a selection from the following compositions or others of equal grade in a manner satisfactory to the faculty:

- (a) Two studies from Czerny, Op. 299
- (b) One two-part invention or a dance from Bach
- (c) One of the easier compositions from Chopin
- (d) One sonata movement from Haydn, Mozart, or the easier Beethoven, and a concert number of corresponding difficulty
- (e) A composition by Mendelssohn, Grieg, Schubert, Schumann, etc.

In addition to this, a student should be able to read at sight a medium grade composition, play all of the major scales and major arpeggios, and write major and minor scales with correct signatures.

*Violin*—Students must know six positions, be able to read at sight a piece selected by the committee, and be able to play satisfactorily the following:

- (a) A study of Mazas' *Special Studies*
- (b) A study by Kreutzer to the grade of No. 32
- (c) A movement from a sonata by Mozart or a concerto by Vivaldi

*Organ*—Students must be able to play on the piano the following:

- (a) Any scale or arpeggio
- (b) A Bach invention
- (c) A prelude and fugue from Bach's *Well Tempered Clavichord*

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*Wood-Wind Instruments*—Students must have had at least one year's experience in band or orchestra ensemble and be able to play any first-grade song. They must also be able to play major and minor scales and arpeggios up to and including three flats and three sharps. Clarinet studies from Lazarus Book I. Similar studies for all other wood-wind instruments.

*Brass Instruments*—Students must be able to play major scales through four sharps and four flats and a solo of medium difficulty. They should also have completed some form of foundation work and have had one year of experience in band or orchestra work.

*Cello*—Students must be able to read at sight a piece selected by the committee and be able to play satisfactorily:

- (a) Technical exercises from Schroeder, Book I
- (b) All major scales two octaves

In evaluating courses in applied music for college credit the following basis shall be used:

One hour of college credit for each half-hour lesson per week, accompanied by one hour of practice daily, total credit earned not to exceed two hours in the applied major and one hour in the applied minor.

Any students of the college, whether majoring in music or in other departments, are encouraged to participate in the marching band, concert band, orchestra, mixed chorus, or a cappella choir. One semester hour of credit may be received for each two or three hours of ensemble per week. A total of one semester hour of credit in marching band may be substituted for one semester hour of the required physical education.

## DEGREE REQUIREMENTS

### Bachelor of Science in Education with a Major in Music Education

#### Group I Music

Applied Music—Major Instrument	16 hours
Applied Music—Minor Instrument	4 hours
Fundamentals of Music	3 hours
Theory	16 hours
Ear Training	2 hours
Conducting	4 hours
Music Appreciation	4 hours
Orchestration	4 hours
Methods	10 hours
Recital	1 hour
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	64 hours

#### Group II Professional

Introduction to Education	2 hours
Psychology of Education	3 hours
Principles of Teaching	3 hours
Classroom Management	3 hours
Practice Teaching	6 hours
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	17 hours

#### Group III Academic

English	11 hours
History and Social Science	12 hours
General Science	9 hours
General Psychology	3 hours
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	35 hours

Group IV Physical Education and Orientation . . . . . 5 hours

Group V Ensemble . . . . . 8 hours

One semester hour of credit is allowed for each two to three hours of ensemble.

Vocal majors are required to take chorus or some vocal ensemble.

Instrumental majors are required to take band, orchestra, or some instrumental ensemble course. At least six semester hours of the ensemble work must be in band or orchestra. The laboratory band is designed for students who need additional training to qualify for the concert band, or for students who wish to gain ensemble experience on their minor instruments.



YOUNGSTOWN COLLEGE

**Bachelor of Music**

Group I Music

Applied Music—Major Instrument . . . . .	16-20 hours
Applied Music—Minor Instrument . . . . .	8 hours
Fundamentals of Music . . . . .	3 hours
Theory . . . . .	16 hours
Ear Training . . . . .	4 hours
Conducting . . . . .	4 hours
Music Appreciation and History . . . . .	10 hours
Counterpoint, Form, and Composition . . . . .	12 hours
Orchestration . . . . .	4 hours
Recital . . . . .	1 hour
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	78-82 hours

Group II Academic

English . . . . .	11 hours
Social Science . . . . .	12 hours
Electives . . . . .	10 hours
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	33 hours

Groups IV and V as stated on page 131.

**Bachelor of Arts with a Major in Music**

Group I Music

Applied Music—Major Instrument . . . . .	4 hours
Fundamentals of Music . . . . .	3 hours
Theory . . . . .	16 hours
Appreciation and History . . . . .	10 hours
Counterpoint and Form . . . . .	8 hours
Ensemble . . . . .	4 hours
	<hr/>
	45 hours

For other requirements for the degrees of Bachelor of Science in Education with a major in music education, Bachelor of Music, and Bachelor of Arts with a major in music, see Requirements for Degrees, pages 48-53, and Curriculums, pages 61-77.

## COURSES OF INSTRUCTION

The use of a hyphen between numbers, as 101-102, indicates that credit is not given toward graduation for the work of one semester until the work of the other semester is completed except when special permission is granted by the head of the department involved. The use of a comma between the semester numbers, as 105, 106, indicates that the course extends throughout the year but credit toward graduation is given for the work of either semester.

Courses numbered from 101 to 199 are freshman courses; from 201 to 299, sophomore; 301 and above are upper division courses.

### APPLIED MUSIC I

### APPLIED MUSIC II

Any student who has not previously studied voice or instrument will be required to take the above courses. Does not apply on major or minor requirements in applied music. *One or two hours credit each semester.*

103-104. THEORY—Meets five hours each week. A unified course of study consisting of part writing, ear training, sight singing and keyboard harmony. Harmony-chord structures: diatonic triads, triad forms, chord progressions, simple cadences, harmonization of melodies, uses of inversions, sequences, open harmony, non-harmonic tones, the dominant seventh chord, dominant ninth, and modulation to nearly related keys, application of materials to simple compositions. Harmonic analysis of simple compositions. Harmonic ear training and keyboard practice: exercises in singing, playing, dictation and notating with the purpose of developing skill in the use of the items being studied theoretically; special attention to the memorization of tonal effects of chords and their progression; work correlated with study step by step. Solfeggio and sight singing; melodic reading and dictation; use of syllables; study of meter and rhythm; development of reading skill through a sequence of graded exercises. Prerequisite, Music 109 or passing entrance examination in theory. *Four hours credit each semester.*

109. FUNDAMENTALS OF MUSIC—This course is to provide a comprehensive introduction to the theoretical factors of music. It will include a study of staves, clefs, key signatures, rhythms, intervals and chords. Simple exercises in sight singing and ear training. *Three hours credit.*

121. INTRODUCTION TO MUSIC—FOR ELEMENTARY TEACHERS—Fundamental knowledge of the problems of notation and development of skill in sight singing and ear training. *Two hours credit.*

203-204. THEORY—Meets five hours each week. Continuation of Music 103-104. Study of diminished and dominant seventh chords, augmented sixth chords, modulation to remote keys and compositions in smaller forms. Ear training, sight singing, keyboard harmony to correlate with work in harmony. Prerequisite, Music 103-104.

*Four hours credit each semester.*

205, 206. HISTORY OF MUSIC—A study of the beginnings of music from pre-historic times down to the beginning of the sixteenth century. *Two hours credit each semester.*

## YOUNGSTOWN COLLEGE

207-208. SURVEY OF MUSIC LITERATURE—A psychological and aesthetic approach to listening to music, with a discussion of the problems of listening. The first semester includes an elementary study of the elements of music and the fundamental principles of analysis and study of form from the simpler da capo to the larger and more complex forms. Lectures, outside readings, scores, and representative recordings.

*Two hours credit each semester.*

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. Human values of music and the relationship to art, literature, geography, history, and other curricular interests are emphasized. Prerequisite, Music 121.

*Two hours credit.*

225-226. TEACHING OF WOODWIND INSTRUMENTS—CLASS METHODS—Meets two hours each week. These classes are organized to furnish the necessary training in this field. Each student selects one of the instruments of this group 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 selected, other instruments of the classification may be selected and studied. The problems underlying the teaching of woodwind instruments are kept constantly before the class.

*One hour credit each semester.*

### Upper Division Courses

301-302. SIGHT SINGING AND EAR TRAINING—Two recitations each week. Sight Singing: Two-part exercises on modal basis, three-part exercises for soprano, alto, and baritone. Ear training: 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 clef and two-part exercises using the bass and treble clef combined, time and key signatures indicated by student; intervals—quality, consecutive intervals in bass and treble clef, major and minor keys with chromatic tones, two-part intervals combining bass and treble clefs; chords—quality, chord progressions introducing all the diatonic seventh chords and chromatic triads in addition to the chords already studied, all parts indicated as in preceding year.

*One hour credit each semester.*

305, 306. HISTORY OF MUSIC—A continuation of Music 205. 206. The development from the beginning of the sixteenth century down to the present day.

*Three hours credit each semester.*

309, 310. VIOLIN PEDAGOGY—A comprehensive survey and analysis of historical, technical, and pedagogical phases of violin playing, as well as of methods and material available for the teaching and study of violin. During the second semester emphasis is placed upon the application of pedagogical and technical principles to actual teaching situations in the nature of supervised practice teaching.

*One hour credit each semester.*

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.

*One hour credit each semester.*

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, rhythmic and tonal problems, analysis of student problems in successive years, with actual demonstration of methods used in elementary grades.

*Two hours credit each semester.*

318. TEACHING OF PERCUSSION INSTRUMENTS—CLASS METHOD—Same as Music 225-226 applied to percussion instruments.

*One hour credit.*

## MUSIC

319-320. CONDUCTING—Meets two hours each week. A practical course in conducting that stresses baton technique, interpretation, and leadership. Interpretative studies are in chorals, anthems, part-songs, opera, and symphony. *One hour credit each semester.*

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 to work effectively under supervision. Prerequisites, Music 121 and 221. *Two hours credit.*

325-326. TEACHING OF STRING INSTRUMENTS—CLASS METHODS—For detailed information concerning the aims of this class, refer to Music 225-226. *One hour credit each semester.*

327-328. MUSICAL FORM—A study of musical form beginning with the phrase and continuing through the song form to the rondo forms and sonata allegro. Prerequisite, Music 203-204. *Two hours credit each semester.*

329-330. TEACHING OF BRASS INSTRUMENTS—CLASS METHODS—Meets two hours each week. For detailed information concerning the aims of this class, refer to Music 225-226. *One hour credit each semester.*

331-332. STRICT COUNTERPOINT—First, second, third, fourth, and fifth species of academic counterpoint in two, three, and four parts; combined counterpoint. Prerequisite, Music 103-104. *Two hours credit each semester.*

401-402. SIGHT SINGING AND EAR TRAINING—Two recitations each week. Sight singing: three- and four-part exercises for soprano, alto, tenor, and bass voices. Ear training: Melodic dictation of maximum difficulty in all clefs and keys; rhythmic dictation-phrase, irregular phrase, and periodic form exercises in two parts using bass and treble clefs combined, time and key signatures to be indicated by 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. *One hour credit each semester.*

403-404. CHORAL CONDUCTING AND SCORE READING—A course designed to cover the organization and conducting of choral groups. Practical work in connection with chorus. Practice in score reading. *One hour credit each semester.*

405-406. INSTRUMENTAL CONDUCTING AND SCORE READING—A course designed to cover the organization and conducting of instrumental groups. Practical work in connection with orchestra and band. Practice in score reading. *One hour credit each semester.*

409-410. ORCHESTRATION FOR HIGH SCHOOLS—A study of the technique of the instruments with particular attention to the ones commonly found in high school assemblies. Cross cueing and instrumental substitutions. Arranging of scores for diverse high school groups. Prerequisites, Music 103-104, 203-204. *Two hours credit each semester.*

411-412. TEACHING OF MUSIC IN THE JUNIOR AND SENIOR HIGH SCHOOL—Classification, problems, materials, methods, organization, and management. Prerequisite, Music 311-312. *Two hours credit each semester.*

YOUNGSTOWN COLLEGE

417. INSTRUMENTAL PROBLEMS—Methods of organizing and conducting instrumental classes, band and orchestra in the public schools, with a survey of materials. *Two hours credit.*

419. BAND ORGANIZATION, DRUM MAJORING, AND FIELD TECHNIQUE—Methods of organizing and conducting the concert and military bands. Selection of materials, seating plans, preparation for rehearsals, and conductor problems. A study of balanced instrumentation and marching formations. An opportunity for study and practical experience in drum majoring with emphasis in military baton signals, field techniques, and drum figures. *Two hours credit.*

421-422. COMPOSITION—A study of the materials out of which musical forms are created, actual work in the song, sonata, and suite forms and in free styles. *Two hours credit each semester.*

423. ADVANCED COUNTERPOINT—A study of the polyphonic forms of musical composition including the Invention, Canon, Fugue, and Chorale-Prelude. Prerequisite, Music 331-332. *Two hours credit.*

424. SYMPHONIC LITERATURE—A survey of the historical background of literature for the orchestra. Analysis of symphonies, symphonic poems and overtures, using records and orchestral scores. *Two hours credit.*

425. MODERN HARMONY—A study of harmonic trends to be found in modern music. Polytonality, atonality, and other factors to be found in the works of modern composers will be studied. Prerequisite, senior standing as a music major. *Two hours credit.*

# School of Law

## COMMITTEE

WILLIAM F. MAAG, JR. . . . . *Chairman*  
Editor and Publisher, The Youngstown Vindicator

J. C. ARGETSINGER      Vice-President, General Counsel, and  
Secretary, Youngstown Sheet and  
Tube Company

JOSEPH G. BUTLER III      Butler, Wick, and Company

SIDNEY J. COLLINS      Clark and Collins, Certified Public  
Accountants

RAYMOND L. FALLS      Dean, School of Law

## GENERAL INFORMATION

### Objectives and Methods of Instruction

The School of Law has the following objectives: To familiarize the student with the history of our laws and institutions; to study the rules of law, their development, and the reasons for their existence; to teach the student the fundamental rules and principles of law and to apply them to actual cases; to develop the ability for legal research; to inculcate the legal ethics and professional point of view; and to prepare the student for the practice of law.

The system of instruction is the case method. Selected cases that have actually been decided are used as texts. Thus, from an analytical study of each case the student determines the operative facts and the rule of law upon which the decision has been based and finds the governing principles of law by the inductive method of reasoning.

By such process the student learns to discriminate between the material and the immaterial; to weigh and estimate relative legal values; to discover fallacies in reasoning; and to express his own conclusions clearly and concisely.

### The College Year

The School of Law operates on the quarter plan. The quarters are designated as summer, fall, winter, and spring. Four quarters constitute the year's work.

### Library

The law library contains 4,500 books and during the past year one hundred volumes have been added. In addition to the college law library the Mahoning County Law Library is available to students.

### Tuition and Fees

See Fees and Expenses, School of Law, page 39.

### Requirements for Admission

While it is recommended that all applicants for admission to the law school have a college degree and preference is given such students, the minimum requirement for admission is sixty semester hours of academic work with average or better than average grades. The student who plans to enter the law school with two years of pre-law work, or sixty semester hours, should include in his curriculum courses in English, natural science, modern language, history, political science, psychology, and philosophy. Each applicant must make written application which shall include the names of two character references. He must also appear in person before the committee on admissions.

The policy has been to admit approximately twenty-five students to the freshman class.

### Admission to Advanced Standing

Advanced standing will be given only to those students who have earned credits in residence in Ohio schools which are members in good standing of the Ohio League of Law Colleges, or in schools outside of Ohio which are approved by the American Bar Association or are members of the American Association of Law Schools.

A student entering from another law school will be admitted only upon presentation of a letter of recommendation from the dean of the school from which he is transferring.

### Grade Requirements

The School of Law follows the same grading system that is used in the College of Arts and Sciences.

For detailed information concerning scholastic point system and grading system, see pages 55-56. A student must have a point average of 1.00 or better to be eligible for graduation.

The law student carries a total of two subjects or four semester hours per quarter. Failure in one subject places the student on probation for the following quarter. Failure in both subjects makes the student ineligible for reenrollment for the following quarter.



## The Student Load

Two subjects, or four semester hours, is the normal schedule for all students. Students who have satisfactorily completed two full years of work may thereafter schedule three classes, subject to the approval of the faculty.

### Time of Classes

Students carrying a normal load of work will attend classes two evenings a week, usually Monday and Thursday, from seven to ten o'clock.

### Requirements for the Bar Examination

All persons registering for the Bar Examination must have completed at least two years of work in liberal arts.

Every law student upon entering the School of Law should ask at the office for an instruction sheet regarding admission to the bar. Students living outside the State of Ohio must establish a residence in the state for one year before they are permitted to take the Bar Examination. Other important information is included on the instruction sheet, and each student should study it carefully upon entering law school to be sure that he has fulfilled all requirements.

### Required Freshman Course

In addition to the regular courses offered, all first year students are required to attend a class conducted by a regular member of the faculty for instruction in legal writings, research, methods of preparation, and use of law books and publications. This class is also open to advanced students for seminar instruction in independent research and preparation. The class meets once each week for two hours throughout the fall and winter quarters. No credit is allowed for the course.

### Suggested Pre-Law Curriculum

First Year	Hrs.	Second Year	Hrs.
Engl. 101-102 Composition .....	6	Hist. 105, 106 Europe Since the Fall of Rome .....	6
Chemistry or Biology .....	8	Social Science 201 and 202 .....	8
Social Science 101 and 102 .....	6	Psych. 201 General .....	3
Modern Language .....	6	Phil. 205 Logic .....	3
Engl. 115 and 116 Speech .....	4	Phil. 305 Ethics .....	3
Orientation .....	1	Modern Language .....	6
Hygiene .....	2	Hist. 215, 216 English Con- stitutional History .....	6
Physical Education .....	1	Physical Education .....	1
	34		34

SCHOOL OF LAW

Required Curriculum for the Degree of  
Bachelor of Laws

The degree of Bachelor of Laws will be granted to students who have received credit for 76 semester hours of work with a point average (see pages 55-56) of not less than 1.00 in the following courses:

First Year			
Common Law Procedure .....	2 hrs.	Torts .....	4 hrs.
Contracts .....	6 hrs.	Agency .....	2 hrs.
Personal Property .....	2 hrs.		
Second Year			
Torts .....	2 hrs.	Real Property II .....	2 hrs.
Criminal Law .....	2 hrs.	Sales .....	2 hrs.
Real Property I .....	2 hrs.	Real Property III .....	2 hrs.
Negotiable Instruments .....	2 hrs.	Carriers .....	2 hrs.
Third Year			
Equity .....	5 hrs.	Trusts .....	2 hrs.
Private Corporations .....	2 hrs.	Insurance .....	2 hrs.
Evidence .....	4 hrs.	Legal Ethics .....	1 hr.
Fourth Year			
Municipal Corporations .....	2 hrs.	Pleading and Practice .....	4 hrs.
Quasi Contracts .....	2 hrs.	Administration of Debtors' Estates .....	2 hrs.
Partnership .....	2 hrs.	Domestic Relations .....	2 hrs.
Suretyship .....	2 hrs.		
Fifth Year			
Constitutional Law .....	4 hrs.	Conflict of Law .....	2 hrs.
Wills .....	4 hrs.	Mortgages .....	2 hrs.

Lectures

The Gessner Law Club is a voluntary organization, the membership of which consists of students and alumni. Its program includes a regular monthly meeting and a series of lectures by visiting speakers and specialists in various fields of law. Attendance at the lectures is required of all students but no credit is given toward a degree. These lectures pertain to the following subjects:

- Probate Practice and Procedure
- Taxation Practice and Procedure
- Brief Making and Preparation of Cases
- Federal Jurisdiction and Procedure
- Jurisprudence
- Drafting and Construction of Statutes
- Trial Practice
- Administrative Law
- Labor Law
- Problems of the Practice of Law

## COURSES OF INSTRUCTION

Courses are normally offered once in each year. However, as a result of abnormal enrollment following the war, courses will be offered as and when justified by enrollment and registration. The courses currently offered in the Law School and required for a degree are as follows:

**AGENCY**—Distinction between law of principal and agent, and law of master and servant; formation of relation of principal and agent; by agreement, by ratification, by estoppel, and by necessity; termination of the relation by act of the parties and by operation of law; irrevocable agencies; obligations and duties of agent; torts and frauds of agents; admission and notice; contracts made by agent on behalf of his principal, and torts between agent and third parties. *Two hours credit.*

**CARRIERS**—Distinction between Law of Bailments and Law of Common and Private Carriers; rights and liabilities of private and common carriers; Federal and State regulation and control of carriers; Federal and State Statutes, including the Interstate Commerce Act and Uniform Commercial Acts. *Two hours credit.*

**COMMON LAW PROCEDURE**—Venue, appearance, process, writs, forms of action, parties, pleadings, trial, judgments, and proceedings after judgment. *Two hours credit.*

**CONFLICT OF LAW**—The legal principles governing the application of laws of different jurisdictions to cause of action arising in one jurisdiction and enforced in another. Judgments; obligations; personal rights; property rights; and a general study of the subject. *Two hours credit.*

**CONSTITUTIONAL LAW**—A study of the matters underlying the general principles of delegation of governmental powers, due process, police power, taxation powers of state and federal governments, interstate commerce, and unconstitutional laws generally. *Four hours credit.*

**CONTRACTS**—Place of contract in our law; essentials of a valid contract; void, voidable, and unenforceable contract; offer and acceptance; Statute of Frauds; consideration; capacity to contract; mistake, misrepresentation, fraud, duress, and undue influence; legality of object; contracts for benefit of third person; assignment in the law of contract; impossibility as affecting contracts; breach of contract and its legal effect; and discharge of contract. *Six hours credit.*

**CRIMINAL LAW**—A study of the general principles relating to crimes, with a study of some of the essentials in criminal procedure. *Two hours credit.*

**DEBTORS' ESTATES, ADMINISTRATION OF**—Composition agreements, receiverships, assignments for benefit of creditors, and proceedings in bankruptcy. *Two hours credit.*

**DOMESTIC RELATIONS**—Statutes and cases embracing the law of marriage, divorce and alimony; property and contract rights of husband and wife; antenuptial and postnuptial agreements; actions by one spouse against the other; parent and child; guardian and ward; rights and liabilities of infants; and care, custody and control of infants. *Two hours credit.*

## SCHOOL OF LAW

**EQUITY**—This course consists of two parts. Equity I embraces the origin, history, general principles and scope of equity jurisprudence. Equity II deals with maxims and special heads of equity jurisprudence, such as rescission, reformation and cancellation; specific performance; injunction; receivers; estoppel; election; subrogation. The conclusion of this course consists of a study of equitable remedies. *Five hours credit.*

**EVIDENCE**—Reasons for and the rules of admission and exclusion of proffered evidence; development of rules of evidence; introduction of evidence; objections to evidence; rulings upon evidence; exceptions to rulings and the making or protecting a record in the Trial Court for reviewing courts, and courts of last resort. *Four hours credit.*

**INSURANCE**—Fire, life, and accident insurance, with respect to: insurable interests; concealment; misrepresentation; warranties; other causes of invalidity of contract; amount of recovery; subrogation; conditions; waiver; estoppel; election and powers of agents; assignees and beneficiaries. *Two hours credit.*

**LEGAL ETHICS**—A study of the canons of legal ethics and cases demonstrating the application thereof. *One hour credit.*

**MORTGAGES**—Theory of mortgages in various jurisdictions, forms, debts, foreclosure, redemption, sales, writ of restitution, and recording requirements. *Two hours credit.*

**MUNICIPAL CORPORATIONS**—Creation, control, powers, liabilities, and dissolution of municipal corporations; their charters, proceedings, officers, and agents; powers of agents; assignees and beneficiaries. *Two hours credit.*

**NEGOTIABLE INSTRUMENTS**—Drawing forms of negotiable papers, forms and formal requisites; acceptance, transfer, and extinguishment; obligation of parties; effect of delay and diligence; bills of exchange; notice and protest; forgery and alteration. Special attention is given to the uniform negotiable instrument law and the judicial construction thereof. *Two hours credit.*

**PARTNERSHIP**—The creation of partnership; the purpose for which a partnership may be formed; the advantages and disadvantages of a partnership; the incidents of partnership; the rights and duties of partners toward each other; partnership property and the interest of partners and creditors therein; of actions by and against the firm; dissolution of partnership; final accounting; limited partnerships and partnership associations. *Two hours credit.*

**PERSONAL PROPERTY**—Distinction between real and personal property; gifts, bailments, common law and statutory liens; chattel mortgages and conditional sales contracts; pledges; fixtures and emblements. *Two hours credit.*

**PLEADING AND PRACTICE**—This course prepares the student to state accurately and concisely a cause of action or defense. This course affords a general review of most of the substantive law preceding. Particular attention is given to forms of action and all pleadings. This is followed by a history of procedure and a careful study of the codes as exemplified by the statutes of New York and Ohio. These codes are illustrated and clarified by the study of cases. This course is sound in theory and sufficiently practical to enable the student to feel at home in the office or court room. To this end considerable attention is directed to trial procedure from the filing of a petition and issuing of summons to the final determination of a case in an appellate court. *Four hours credit.*

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**PRIVATE CORPORATIONS**—Forms of business organizations; formation of corporations; the separate corporate entity; criminal and tort liability; directors and management; rights and liability on contracts; rights and powers of shareholders; issue of shares and subscriptions; underwriting and marketing of securities; stock structure; capital requirements and dividends; liability of shareholders, directors and promoters; transfer of shares; fundamental changes in corporate organization; shareholders actions. *Two hours credit.*

**QUASI CONTRACTS**—Nature of obligation; restitution at law for benefits conferred under mistake of fact or mistake of law; benefits conferred in misreliance upon contract invalid, illegal, unenforceable, or impossible of performance; benefits conferred through intervention in another's affairs; benefits conferred under constraint; restitution as alternative remedy or breach of contract and for tort. *Two hours credit.*

**REAL PROPERTY I**—Introduction to the law of real property; the feudal system, theory of estates, non-possessory interests in land, joint ownership, disseizin, history of uses. Rights incidental to possession, including water rights in the land of another, including profit, easements, and licenses. *Two hours credit.*

**REAL PROPERTY II**—Covenants running with the land, including enforcement at law or in equity, and between landlord and tenant and fee owners; rents; waste; public rights in streams and highways. *Two hours credit.*

**REAL PROPERTY III**—Future Interests in Land—Future interests; conditions, reversions, remainders and conditional limitations; Rule in Shelley's Case; future interests in personality; powers, rules against perpetuities. *Two hours credit.*

**SALES**—Subject matter of sales, executory and executed sales, stoppage in transit, fraud, warranties and remedies for breach of warranties, statute of frauds, and the uniform commercial acts. *Two hours credit.*

**SURETYSHIP**—Guaranty and suretyship defined and distinguished; application of the Statute of Frauds; commercial guarantee bonds to secure private obligations; bonds of public officers; subrogation, contribution, and indemnity; surety defenses. *Two hours credit.*

**TORTS**—Assault, battery, malicious prosecution, false imprisonment, negligence, deceit, slander, libel, and other disputes. *Six hours credit.*

**TRUSTS**—Voluntary trusts, language and formalities necessary to the creation of a trust, resulting trusts, oral trusts, constructive trusts, executed and executory interests of trustees. *Two hours credit.*

**WILLS**—Testamentary capacity; dispositions in contemplation of death; execution, revocation, republication, and revival of wills; descent; liability of heirs for debt; probate and administration; title and powers of executors and administrators; payment of debts; legacies and distributive shares. *Four hours credit.*

**NOTE**—Subjects taught, hours of instruction, tuition charges, case books, and all matters of a similar character are subject to change any time by the dean and president.

## DEGREES CONFERRED

August 17, 1946

### Bachelor of Science

Zhuck, Jennie ..... Youngstown

### Bachelor of Arts

Bowles, George Charles William ..... Youngstown  
Boyts, Betty Jo ..... Cleveland  
Hanssen, Robert Arthur ..... Youngstown  
Lanz, Fred C., Jr. .... Youngstown  
McDuffie, Bishop Ramsey ..... Youngstown  
Moore, Clifford W., Jr. .... Sharon, Pa.  
Perris, Sultana Thomas ..... Youngstown  
Rothermund, Mary Gertrude ..... Struthers  
Valentini, William Edward ..... Youngstown  
Walker, Robert Long ..... Youngstown  
Yatsko, Michael Raymond ..... Youngstown

### Bachelor of Science in Education

Abramovitz, Morris J. .... Youngstown  
Aiello, Anthony S. .... Masury  
Bailey, Florence Marie ..... Youngstown  
Barillaire, Helen Marinelli ..... Youngstown  
Benjamin, Beverley Ann ..... Youngstown  
Diamondstein, Irma ..... Youngstown  
Funkhouser, Alice Reagan ..... Youngstown  
Hahn, William R. .... Poland  
Hood, Hazel M. .... Girard  
Hood, Ida Belle ..... Girard  
Lukick, Helena Marie ..... Youngstown  
McBride, Edna L. .... Masury  
McGuckin, Mary Theresa ..... Youngstown  
McIntosh, Maebelle ..... Youngstown  
Meadows, Ruth Elizabeth ..... Youngstown  
Turk, Sister M. Barbara ..... Youngstown

### Title of Associate in Business Administration

Brugler, Virginia R. .... Warren  
Fedyna, Rose ..... Youngstown  
Gwin, Eileen ..... New Middletown  
Pagliasotti, Marian M. .... Hubbard  
Stores, Marjorie ..... Campbell

## DEGREES CONFERRED

June 6, 1947

### Honorary Degree—Doctor of Laws

Argetsinger, J. Cameron . . . . . Youngstown

### Bachelor of Laws

Brunner, Rose Maurine . . . . . Youngstown  
Church, Donna Pauline . . . . . Youngstown  
Daugherty, Jerome M. . . . . Mahoningtown, Pa.  
Luckhart, Elton Wagner . . . . . Youngstown

### Bachelor of Engineering

Colby, Frederick B. . . . . Hubbard

### Bachelor of Science

Daly, Robert J. . . . . Sharon, Pa.  
Esping, Thelma V. . . . . Youngstown  
Hornak, John A. . . . . Campbell  
Jones, Roy P. . . . . Youngstown  
Pepe, Joseph James . . . . . Niles  
Plecha, Stanley L. . . . . Girard  
Serene, Paul Chris . . . . . Youngstown  
Steele, Norma L. . . . . Youngstown  
Teets, Robert Marvin . . . . . Youngstown

### Bachelor of Arts

Bradshaw, June Harriett . . . . . Youngstown  
Brennan, Patricia Ann . . . . . Greenville, Pa.  
Butts, Dorothy . . . . . Youngstown  
Charles, Dorothy Gantz . . . . . Youngstown  
Davies, Halliwell H. . . . . Lisbon  
Delfs, Julianne W. . . . . Canfield  
D'Isa, Virginia C. . . . . Youngstown  
Grice, Jeanne Warren . . . . . Girard  
Heyman, Merle Aron . . . . . Youngstown  
Higgins, William J. . . . . Campbell  
Johnson, Alma Lillian . . . . . Binghamton, N. Y.  
Kostyk, June . . . . . Campbell  
Mellinger, Jean Ann . . . . . Leetonia  
Nicewaner, Margaret Louise . . . . . Struthers  
Nord, Howard R. . . . . Bessemer, Pa.

## DEGREES CONFERRED

Planchak, Eugene	Farrell, Pa.
Pool, Bettie L.	Youngstown
Ross, Mario David	Campbell
Schwartz, Michael Emil	Campbell
Sontich, Joseph Paul	Lowellville
Yelder, Josephine	Youngstown

### Bachelor of Science in Education

Adair, Myra Gwendolyn	Youngstown
Ayers, William Jaywhen	Youngstown
Charlebois, Jeanne M.	Youngstown
Couts, Elizabeth J. Meeker	Brookfield
Emery, Paul J.	Warren
Honda, Nicholas	Youngstown
Hutchison, Helen E. Perry	Youngstown
Ignazio, Carmela Rose	Youngstown
Kroll, Roy H.	Youngstown
Matune, Michael Mark	Campbell
Morgan, Ann N.	Youngstown
Morgan, Mary Lee	Youngstown
Nelson, Betty Jane	Youngstown
Pilz, Marjorie Popowich	Youngstown
Rich, Donald E.	Youngstown
Sherlock, Ruth Evelyn	Youngstown
Tornich, Maryanna	Youngstown

### Bachelor of Music

Peppel, Gladys Marie	Columbiana
Putt, Virginia	Columbia Station

### Bachelor of Science in Business Administration

Bates, Frederick Arthur	Youngstown
McLaughlin, Frank John	Hubbard
Maxwell, Charles Joseph	Salem
Peyko, Joseph Raymond	Campbell
Stewart, Ralph F.	New Springfield
Zuzik, Paul P.	Campbell

### Title of Associate in Business Administration

Brownlee, Bernice May	Youngstown
Cassano, Guido Joseph	Youngstown
Cox, Sarah Elizabeth	Youngstown
Crofford, Helen Smith	Niles



## YOUNGSTOWN COLLEGE

Dilworth, L. Duane	Salem
Hainley, Edna Mae	Youngstown
Hepner, John Milton, Jr.	Youngstown
Jeren, John A.	Youngstown
Krempasky, Mary Louise	Youngstown
McCurley, Margaret Ellen	Enon Valley, Pa.
Monahan, John M.	Girard
Nowak, Carl Kenneth	Youngstown
Parker, Audrey Pearl	Youngstown
Renstrom, Edward A.	Youngstown
Ritter, Jack W.	Columbiana
Rutkowski, Maryann	Campbell
Sherran, Clifford Leroy	Warren
Tesone, Josephine A.	Youngstown
Thorne, Edward F.	Youngstown
Turner, Alice Marie	Sharon, Pa.
Yaeger, June Elizabeth	Petersburg

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FORMS OF BEQUEST

I give and bequeath to Youngstown College, Youngstown, Ohio, the sum of \$..... to be used by the Board of Trustees of said college for such purpose or purposes as they may deem appropriate.

I give and bequeath to Youngstown College, Youngstown, Ohio, the sum of \$..... to be invested by the Board of Trustees of said college, the income therefrom to be used for the following purposes:

*Office  
Copy*



**Youngstown  
.. College ..  
1948 - 1949**