Neither the sharp wit nor the trained intellect can save mankind from catastrophe. Only men of good will intelligently directed can provide leadership for the creation of a better world. For this reason the first objective of Ohio Northern University is the development in a broad sense of the enlightened Christian character.

We believe the Christian college is indispensable in the creation of real democracy. With this conviction the University offers its professional training as well as its Liberal Arts curricula under Christian auspices, holding ever in view the purpose that the student be led to approach his life's work and his responsibilities of citizenship with Christian motivation.
GENERAL CATALOGUE
OF
OHIO NORTHERN UNIVERSITY
1946-1947
(THE 75TH YEAR)

Announcements for 1947-1948

ADA, OHIO
October, 1946
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CALENDAR, 1947-1948

Summer Session, 1947
First Term, June 9, Monday, to July 11, Friday
Second Term, July 14, Monday, to August 15, Friday

Fall Quarter, 1947
September 4, Thursday, September 8, Monday .......... “Freshman Week”
September 8, Monday .......... Freshman Registration and Payment of Fees
September 9, Tuesday .......... Upperclass Registration and Payment of Fees
September 10, Wednesday .......... Classes Begin
October 18 .......... Homecoming
October 27, 28, 29, 30, 31, November 1, Monday to Saturday Noon .......... Preregistration
November 22, 24, 25, 26, Saturday, Monday, Tuesday, Wednesday .......... Final Examinations
November 26, Wednesday (5:10 p.m.) .......... Fall Quarter Ends

Winter Quarter, 1947-48
December 1, Monday .......... Registration and Payment of Fees
December 2, Tuesday .......... Classes Begin
December 19, Friday (5:10 p.m.) .......... Christmas Vacation Begins
January 5, Monday .......... Classes Resume
February 2, 3, 4, 5, 6, 7, Monday to Saturday Noon .......... Preregistration
February 27, 28, March 1, 2, Friday, Saturday, Monday, Tuesday .......... Final Examinations
March 2, Tuesday (5:10 p.m.) .......... Winter Quarter Ends

Spring Quarter, 1948
March 9, Tuesday .......... Registration and Payment of Fees
March 10, Wednesday .......... Classes Begin
April 9, Friday .......... Founder’s Day
April 26, 27, 28, 29, 30, May 1, Monday to Saturday Noon .......... Preregistration
May 21, 22, 24, 25, Friday, Saturday, Monday Tuesday .......... Final Examinations
May 29, Saturday .......... Alumni Day and Class Day
May 30, Sunday .......... Baccalaureate and Commencement Exercises

Summer Session, 1948
First Term, June 7, Monday, to July 9, Friday
Second Term, July 12, Monday, to August 14, Saturday
(The University reserves the right to make any necessary changes in Calendar or Schedule of Courses)
BOARD OF TRUSTEES

ROBERT O. MCCLURE, President of the University
(Ex-Officio)

JOHN H. CLARK, President
EDWARD S. MATTHIAS, Vice President
JAY P. TAGGART, Secretary

ELECTED BY THE OHIO CONFERENCE

Initius                      Exodus
1905  JOHN H. CLARK, Attorney .................................................. Marion 1948
1942  BENJAMIN F. READING, Minister ............................................ Toledo 1948
1924  DAVID F. HELMS, Minister .................................................... Lima 1949
1918  ELMER J. BROOKHART, Insurance ............................................ Celina 1949
1939  EDWARD S. MATTHIAS, Judge Supreme Court of Ohio .................. Columbus 1950
1941  D. FINLEY WOOD, Minister .................................................... Worthington 1951
1922  ELI L. MOTTER, Minister ...................................................... Columbus 1947
1946  JOHN V. MELLICK, Vice President, Spicer Manufacturing Co. ...... Toledo 1951
1946  JOSEPH B. ROSEMURGY, Minister ............................................ Akron 1947

ELECTED BY THE NORTH EAST OHIO CONFERENCE

1939  JAY P. TAGGART, Attorney .................................................. Cleveland 1949
1938  HOWARD W. PETERSON, Minister .............................................. Steubenville 1950
1946  S. LEE WHITEMAN, Jr., Minister ............................................. Cuyahoga Falls 1951

ELECTED BY THE ALUMNI

1942  BERT R. MULL, Eli Lilly Co., Mgr. Trade Advertising ............... Indianapolis, Ind. 1947
1943  ARMSTRONG A. STAMBAUGH, Vice President, Standard Oil Co. .... Cleveland 1948
1944  WHEELER McMILLEN, Editor of Farm Journal ........................... Hopewell, N. J. 1949
1945  CURTIS M. SHETLER, President, Inter-City Coach Lines, Inc. ...... Canton 1950
1946  LESLIE A. PECK, General Manager P. S. Corporation ............... Richmond, Ind. 1951

AT LARGE, ELECTED BY THE TRUSTEES

1934  JAMES J. PILLIOD, American Telephone and Telegraph Co. ......... New York, N. Y. 1948
1934  BEN R. CONNER, Banker ...................................................... Ada 1948
1935  BENJAMIN F. FAIRLESS, United States Steel Corporation ......... Pittsburgh, Pa. 1949
1945  ROBERT I. INGALLS, Ingalls Iron Works Co. ........................... Birmingham, Ala. 1949
1945  H. LESTER SMITH, Presiding Bishop, Ohio Conference ............. Columbus 1949
1945  MRS. FRANK B. WILLIS, Senator Willis' Widow ........................ Delaware 1949
ADMINISTRATIVE OFFICERS AND FACULTY*

ROBERT OWEN McCLURE, M. A., D. D., LL. D.
President
M. A., Asbury College; D. D., Taylor University; LL. D., Lincoln Memorial University.

MERRY MONTE FARM

MARIAN ELMER TINSLE, A. B., B. D.
Assistant to the President
747 North Main Street

Assistant Professor in Religion
A. B., Bluffton College; B. D., Garrett Biblical Institute.

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Treasurer
Professor of Biblical Literature
420 South Main Street
B. S., Ohio Northern University; B. D., Northwestern University (Garrett); University of Chicago, two summers; Columbia University, one summer; Union Theological Seminary, one summer; D. D., Ohio Northern University.

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Registrar
B. A., Salem College; M. A., University of Virginia; Ed. D., University of Cincinnati.

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Librarian
255 West Buckeye Avenue
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Dean of George Franklin and Sarah Catherine Getty
College of Liberal Arts and Professor of Biology
724 Union Street
B. A., Ohio Northern University; M. A., Yale University; Yale University, two years; University of Wisconsin, one summer.

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C. E., M. E., Ohio Northern University; Graduate Student, Lafayette College, one semester; University of Michigan, one semester; Eng D., Oglethorpe University.

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Dean of the College of Engineering and
Professor of Civil Engineering
316 South Johnson Street
B. S. in C. E., Armour Institute of Technology; M. S. E., University of Michigan; C. E., Armour Institute of Technology.

* Professors and instructors arranged according to seniority.
RUDOLPH HENRY RAABE, PHAR. D.
Dean of the College of Pharmacy and
Professor of Materia Medica
B. S., Ph. G., Ph. C., Ohio Northern University; Phar. D., University of Havana.

CLAUSE WESTCOAT PETTIT, B. S., LL. M.
Dean of the College of Law and
Professor of Law
B. A., Ohio State University; LL. B., Western Reserve University; LL. M., George
Washington University; Old Trinity, Dublin, Ireland, one quarter.

ALICE ENSIGN WEBB
Dean of Women
Art Institute, Chicago; Chicago School of Fine Arts; Highland Park College, Iowa;
Iowa State College, Iowa.

HARRY HULL VANNORSDALL, B. S. in Ed., A. M., Ph. D.
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Ohio State University.

CLYDE ALBERT LAMB, M. A.
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B. S., Coe College; M. A., Columbia University; Columbia University, two summers.

CLIFFE DEMING, M. A.
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summer.

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B. A., Ohio Northern University; B. S., University of Chicago; M. S., Ohio State
University.

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Professor of Piano and Organ
Mus. B., Oberlin College Conservatory; Student with Tobias Matthay and Matilda Verne,
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Piano student with Edwin Hughes, New York, two summers; Student in piano with
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B. S. in Education, Ohio Northern University.

112 West Montford Avenue

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325 West University Avenue

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A. B., University of Dayton; LL. B., Western Reserve School of Law.

Lima, Ohio

ERNST SCOTT NAVARRE, A. B., LL. B.
Instructor in Law
A. B., LL. B., Ohio Northern University; Florida Southern University.

Lima, Ohio

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B. S. in C. E., Ohio Northern University.

705 Union Street

EDWARD EARLE MADIGAN, B. S. IN ED.
Instructor in Mathematics

620 South Gilbert Street

DELBERT LEROY LATT, LL. B.
Instructor in Law
LL. B., Ohio Northern University.

McComb, Ohio

HERSCHEL LEE WALDRON, M. S., B. S.
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A. B., Hendrix College; M. A., Oklahoma A. & M. College; B. S., Central State Teachers College; University of Chicago, four quarters toward Ph. D.

112 West University Avenue

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Associate Professor in History
B. A., B. Sc. in Education, M. A., Ph. D., all Ohio State University.

612 North Main Street

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603 South Main Street

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Professor of Industrial Arts
B. S. in Education, Ohio University; M. S., Iowa State College; Oregon State College, summer; Bradley Polytechnic Institute, summer.

310 West Main, Cairo, Ohio

NELSON EARL JONES, B. S., LL. B
Professor in Law
B. S. in Commerce, Georgia School of Technology; LL. B., University of Michigan.

610 South Gilbert Street
1947-1948

COMMITTEES OF THE BOARD OF TRUSTEES


DEGREES: E. E. Matthias, H. W. Peterson, Mrs. F. B. Willis, B. R. Mull, H. E. Huber, Faculty Advisor.


COMMITTEES OF THE FACULTY


ADMISSION: Deans and Registrar.

CATALOGUE: Deans and Editor of Publications.

CHAPEL: Tinsler, Roider, Deming, Lamale, Berger.

CLASSROOM ASSIGNMENTS: Berger, Freeman, Lincoln, Weishampel.

COMMENCEMENT: Vannordsall, Berger, Deming.

CURRICULUM: President and Deans.

DISCIPLINE: Binkley, Smith, Deming, Lamb.

GRADUATE INTERESTS: Binkley, Vannordsall, Wooster, Jones.

HEALTH SERVICE: Raabe, Lamb, Tinsler, Webb.

PLACEMENT BUREAU: Vannordsall, Pettit, Huber, Raabe.

LOAN COMMITTEE: Potter, Tinsler, Wooster.

SCHOLARSHIPS: Deans of Men and Women and Treasurer.

STUDENT PUBLICATIONS: Freeman, Berger, Smith, Hilliard.

STUDENT WELFARE AND SOCIAL CALENDAR: Deans of Men and Women.

SUMMER SCHOOL: Vannordsall, Berger, Freeman, Huber.
RALPH EUGENE WALTER, B. S. IN E. E.
Instructor in Electrical Engineering
B. S. in E. E., Ohio Northern University.

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Physician in Charge of Health Service and
Instructor in Pharmacy
B. S. in Pharm., Ohio Northern University; M. D., Eclectic Medical College, Cincinnati.

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B. S. in Chemical Engineering, Ohio Northern University.

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Instructor in Business Administration
B. S. in Bus. Adm., LL. B., Ohio State University.

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Professor of History and Economics
A. B., M. A., Ph. D., Harvard University; University of Paris, one year.

SARAH DUNNING, B. A., M. A., (1945-1946)
Dean of Women
B. A., Mt. Union College; M. A. in English Literature, Ohio State University.

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412 Union Street
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INSTRUCTORS AT THE LIMA BRANCH

J. McLean Reed, B. S., M. A., D. Ped.

*Administrative Officer*
A. B., B. S., Ohio Northern University; M. A., Ohio State University; Ottawa County Normal.

James A. Bight, B. S., M. A.

*Instructor in Chemistry*
Findlay College; B. S., Otterbein College; M. A., Ohio State University; Bowling Green State University; Indiana University.

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*Instructor in History*
A. B., Ohio Wesleyan University; M. A., Ohio State University; Columbia University; Miami University; University of Michigan.

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*Instructor in Political Science*
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A. B., Ohio University; M. A., Ohio State University; Bowling Green State Normal College; Ohio Northern University.

Jeanette Stuart, B. A.

*Instructor in Public Speaking*
Flora Stone Mather Teachers' College, A. B.; Western Reserve University; University of Colorado.

Laura Jamison, B. Sc., M. A.

*Instructor in English*
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*Instructor in Zoology*
B. A., M. Sc., Ohio State University; University of Chicago; Northern State Normal School.

Merl O. Reed, A. B., M. A.

*Instructor in Mathematics*
A. B., Ohio University; M. A., Teachers College, Columbia University.

Marie Bowlus, B. A., M. A.

*Instructor in English*
B. A., Heidelberg College; M. A., Columbia University.
ARTHUR W. FOWLER, B. S.
Instructor in Mechanical Engineering
B. S. in Mechanical Engineering, Ohio Northern University.

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Instructor in Mathematics
A. B., A. M., Wittenberg College; Miami University; Ohio State University.

ARTHUR A. CLAY, B. S.
Instructor in Income Tax Law
Bachelor of Commercial Science, New York University; Certified Public Accountant, certification in New Jersey, New York and Ohio.

DORA STOTTS BINKLEY
Director of Publicity
Lima College

ILO RUTTER
Secretary in Alumni Office
Graduate in Stenography, Ohio Northern University; Actual Business College, Akron, one year.

LESLIE BUNNELL GAMBILL
Secretary to the President
Ohio Wesleyan University; Miami Tech.

JEANNE LOUISE STEPFIELD
Secretary to the Treasurer
Barberton Business College

LOIS PRICE VOLCKENING, B. S.
Assistant in the Registrar’s Office
B. S. in Ed., Ohio Northern University; Columbia University.

ANNA FRANCES SEITZ
Assistant in the Registrar's Office
Ohio Northern University, Office Training School

PATRICIA O. THURSBY
Secretary in the Registrar's Office
Westminster College

PATRICIA ANN VOGL
Secretary to Director of Teacher Training, Counselor of Men, and Dean of Women
Office Training School, Columbus.
ORIGIN AND DEVELOPMENT

HISTORICAL SKETCH

On August 14, 1871, in a three-story building where the Lehr Memorial now stands, the Northwestern Ohio Normal School was formally opened. Henry Solomon Lehr, the founder and president, stated in his first catalogue that the purpose of the school was "the instruction and training of teachers in the science of education and the art of teaching and the best methods of governing schools." For many years the school was one of the outstanding private institutions offering professional training to elementary and high school teachers.

On May 19, 1885, the state of Ohio issued a charter to the institution under the name of the Ohio Normal University. In 1898, the Central Ohio (now the Ohio) Conference of the Methodist Church purchased the school from Doctor Lehr and his associates. In 1904, the University was renamed the Ohio Northern University, and in December, 1907, the charter was amended. Throughout the years the institution continued to grow and to enlarge its field of activities.

In 1880, the Department of Civil Engineering was established and when the demand for engineers increased this department was organized as the College of Engineering with additional departments in electrical and mechanical engineering.

In 1884, the laws of Ohio required that all pharmacists should be registered. To meet the demand for trained and qualified pharmacists the Department of Pharmacy was established. Later this department was organized as the College of Pharmacy.

The College of Law was established in 1885. Not only have its graduates been successful as practitioners but they have also distinguished themselves in the field of public affairs; at the same time four of its graduates were members of the United States Senate—two from Ohio, one from Indiana, and one from Kentucky. Two of the graduates of the College of Law were members of the Ohio Supreme Court.

The College of Liberal Arts was reorganized in 1910. The College of Liberal Arts not only offers well organized curricula in pre-medicine, pre-
law, pre-dentistry, and pre-theology but also through its various divisions (1) Language, Literature, and Art, (2) Natural Sciences, (3) Social Sciences, and (4) Teacher Training, it provides strong curricula leading to the degree of Bachelor of Science in Education or Bachelor of Arts.

LOCATION

Ohio Northern University is located in Ada, an attractive and enterprising town in Northwestern Ohio. Situated on the Pittsburgh, Fort Wayne and Chicago division of the Pennsylvania railroad, and on State Route 69, two miles north of the Harding Highway (Route 30S), and four miles south of the Lincoln Highway (Route 30N), and nine miles south of the Dixie Highway (Route 25), the University is easily accessible by railway or motor bus.

ORGANIZATION FEATURES

The University year is divided into three quarters of approximately equal length, designated as Fall, Winter and Spring. Early in the Fall quarter, the Freshman, Sophomore, Junior and Senior classes are formally organized under the direction of a member of the faculty. Student classification is based upon credit hours and quality points. Each student is required to present a certificate from the Registrar showing his eligibility to participate in class organization and honors.

SUMMER SESSION

Ohio Northern University has been one of the pioneer institutions in maintaining a summer session, which has been readily adapted to the accelerated program of education and training desired by ex-service men and women. The summer session is composed of two terms of five weeks each, six days a week in the College of Liberal Arts and one term of ten weeks in the Colleges of Engineering, Pharmacy and Law. The first term of the 1947 Summer Session opens June 9 and closes July 11; the second term begins July 14 and closes August 15.

The purpose of the Summer Session is to provide opportunity for regular college students to work toward a college degree or other professional goals and thus shorten the time required for the completion of their program. By continuing in residence during summers, many students complete their four-year course in three years.

The College of Liberal Arts, including the Division of Teachers' Training, offers an extensive program of academic and professional courses for elementary teachers, high school teachers, and teachers and supervisors
of health and physical education, public school music, commerce and industrial arts.

For many years the Summer Session has been popular with teachers who have come from many sections of the country to acquire information and knowledge essential to success and to gain inspiration for future service. The spirit that prevails on the campus throughout the Summer Session has proved a lasting influence in the lives of many teachers.

Affiliations

Ohio Northern University holds membership in the Ohio College Association. The College of Pharmacy belongs to the American Association of Colleges of Pharmacy and is accredited by the American Council on Pharmaceutical Education. The College of Law is a member of the League of Ohio Law Schools. The University is on the approved list of the University Senate of the Methodist Church for the training of ministers.

Graduate Placement

Ohio Northern University counts among its alumni a great number of men and women who have distinguished themselves in the field of education, business, science, the Christian ministry, engineering, pharmaceutical research, law, public service, statesmanship, music and other vocations.

The University is not only interested but takes an active part in the satisfactory placement of its graduates. Deans and departmental heads assist their students in arranging for professional and graduate work or securing desirable locations in which they may carry on their vocational career.

The Teachers' Placement Bureau assists, without charge, students in securing teaching positions. Graduates, former students, and seniors are brought in direct communication with school officials in search of good teachers. A number of superintendents and principals owe their present positions to direct calls to this bureau.

It is recommended that seniors who plan to apply for admission to professional schools or graduate schools take the Graduate Record Examination during the last year of residence. Many professional and graduate schools require this examination as one of the qualifications for admission. Ohio Northern is an examining center for the administration of the Graduate Record Examination.

Campus Buildings and Equipment

The University owns over 100 acres of ground in and around Ada providing ample room for present needs and future expansion.
The Central Campus lies a few blocks south of the railroad. Here in this central quadrangle, easily accessible from any part of the village, are located the following buildings:

**Lehr Memorial**, a modern three-story fire-proof building, housing the offices of the association, the Lehr Auditorium, Student Christian Association, Alumnae Hall, and the Northern Review office, is located in the center of the quadrangle. Lehr auditorium, with a seating capacity of 1,237, provides an ample lecture and concert hall. The building was erected in 1915 and dedicated to Henry Solomon Lehr, the founder of the University.

**Hill Memorial**, a two-story fire-proof building, named in honor of John Wesley Hill, Sr., contains the College of Engineering, the laboratories for Electrical Engineering and the Departments of Physics and Mathematics.

**Dukes Memorial**, located at the south end of the campus, contains the College of Pharmacy, the Department of Chemistry, the Health Service Dispensary, and a departmental library and reading room.

**Brown Memorial**, situated at the north end of the front campus, houses the laboratories and equipment of the Department of Industrial Arts.

**The Power Plant** in back of Hill Memorial is a unit of modern design, including a large, well-lighted laboratory for mechanical engineering students.

**The College of Law**, named in honor of Warren G. Harding, occupies a splendid building north of the Central Campus on the corner of Main Street and University Avenue. It contains class rooms, together with the Law library and study room, and the General Library and reading room. This building was erected and dedicated in 1925.

**The Department of Biology** occupies a two-story structure located at the corner of Gilbert Street and College Avenue. Nearby is an experimental Greenhouse.

**Presser Music Hall**, bearing the name of Theodore H. Presser, is a modern three-story structure with splendid auditorium, sound-proof practice rooms, class rooms, and studios.

**Taft Gymnasium**, named in honor of John H. Taft, the principal donor, is situated at the corner of Union Street and West University Avenue. It contains twenty-six rooms. In addition to the main basketball court with its galleries and bleachers, having a seating capacity of 1,800, there
are a volley ball court, two auxiliary playing courts, a fencing room with bleachers, examination rooms with first aid equipment, a running track, faculty club room, offices for coaches and members of the faculty of physical education, and the physical education classrooms. The cluster lights at the side entrances are the memorial gift of the Class of 1928. The building is erected on ground purchased in part as a memorial gift by the Classes of 1926 and 1927.

Three Trailer Camps with a total of 76 trailer-type housing units are located on the campus. These have been secured through the FPHA and are available to married veterans who are in attendance with their families. Sixty-six of these units are of standard size and ten are of the larger size and are designed for families with children. Each of the three camps has utility units including laundry.

Five Dormitory Units, furnished to accommodate 72 veterans are located near the Taft Gymnasium. These, too, have been secured through the FPHA to help house the veteran-student during the housing emergency of the immediate post-war period.

LABORATORIES

The various laboratories of the University and their equipment are located in the following buildings: Dukes Memorial, Hill Memorial, Lehr Memorial, Presser Hall, Brown Memorial, Biology Building and the Power Plant.

ATHLETIC FIELDS

Adjacent to the Taft Gymnasium is the Taft Athletic Field, containing a well-drained and heavily sodded football gridiron, encircled by a cinder running track with 120-yard straightaway. There are also two auxiliary gridirons, a baseball diamond and tennis courts.

The Memorial Park and Stadium, for which the University donated the site to the Ada community, is now under construction. The plans include a concrete stadium and floodlights. These will be available to the University.

RESIDENCES FOR WOMEN

All non-resident freshman women are required to live in Turner Hall or in one of the other approved residences for first-year women. (This regulation does not apply to a woman who is commuting or to one who is doing work in exchange for her room). The Terrace may be reserved for upper-class women. A list of other approved residences will be furnished
upon application to the Office of the Dean of Women. No agreement between student and housemother is recognized by the University until arrangements have been approved by the Dean of Women.

**TURNER HALL**

Turner Hall, a stately residence, rich in its university associations, is assigned to freshmen women. This home, which was built by Henry Solomon Lehr, recently came into the possession of the University from Mr. and Mrs. Perry W. Turner, in whose honor it is named. Throughout it has been furnished so as to make an attractive, comfortable home, all equipment being selected to meet the social and intellectual needs of the students.

**THE TERRACE**

The Terrace, built by S. M. Johnson, a pioneer resident of Ada, and acquired by the University in 1939, may be assigned to upper-class women. The second floor of this colonial residence accommodates sixteen girls and a house director. An attractive lounge completes the house plan.

The sororities for women rent their own residences and maintain them under the supervision of the Dean of Women and an approved housemother.

**RESIDENTS FOR MEN AND MARRIED COUPLES**

In addition to the trailer camps of the University and private trailers attached to these camps, a considerable number of apartments are available in the local community. In all, a total of 200 couples have been in attendance in a single quarter.

In addition to the FPHA dormitories there are six large fraternity houses with dormitory and rooming facilities, with rooms in private homes housing many of the men.

The Counselor for Men offers a directory service for the trailer camps, dormitories, apartments and approved rooms in private homes.

**GENERAL INFORMATION**

**Assemblies**

Convocations are held twice weekly, Tuesday and Thursday. The aim is not only to recognize the duty and privilege of regular devotions, but to foster a university spirit by bringing together in one assembly the students of the several departments to listen to practical addresses and talks from members of the faculty and others, and to be entertained by those connected with the Departments of Music and Speech. Attendance is compulsory.
CLASS PERIODS

<table>
<thead>
<tr>
<th>Period</th>
<th>Number</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Period</td>
<td>(1)</td>
<td>7:50 to 8:40</td>
</tr>
<tr>
<td>Second Period</td>
<td>(2)</td>
<td>8:45 to 9:35</td>
</tr>
<tr>
<td>Third Period</td>
<td>(3)</td>
<td>9:40 to 10:30</td>
</tr>
<tr>
<td>Fourth Period</td>
<td>(4)</td>
<td>10:35 to 11:25</td>
</tr>
</tbody>
</table>

Chapel ........................................... 11:30 to 12:00

Fifth Period (5) ......................... 1:30 to 2:20
Sixth Period (6) .................... 2:25 to 3:15
Seventh Period (7) ............... 3:20 to 4:10
Eighth Period (8) .................. 4:15 to 5:05

Following the description of each course offered in the University the days and periods of class assemblies are indicated.

MORAL AND RELIGIOUS CULTURE

Much attention is given to awakening and fostering an aspiration to attain the highest type of Christian manhood and womanhood.

Although the University is the property of the Ohio Conference of the Methodist church, it is in no sense sectarian. Students of all religious denominations are received on equal terms and treated with equal consideration. They are urged to identify themselves with the work and participate regularly in the services of the church of their choice. The six churches of the city cordially welcome students to their religious and social meetings and Bible classes. The following denominations are represented: Methodist, Presbyterian, Lutheran, Church of Christ, Baptist, Roman Catholic and a Grace Gospel Tabernacle.

The Department of Religion and Philosophy affords an opportunity to those who wish to take up the study of religious problems to fit themselves for life's work.

The Campus Pastor exists to make counsel readily available to those experiencing personal, moral or religious perplexities during their college years of rapid development. He seeks to serve in a special way which will not duplicate the services of the local churches.

The Ministerial Association, composed of young men studying for the ministry of various denominations, holds weekly meetings. Its purpose is to aid in developing a spiritual and practical outlook on the Christian ministry through contacts with men already in active service in the church.
Ohio Northern University

General Student Organizations

The Student Christian Association has been formed by merging the former student Y. M. C. A. and Y. W. C. A. The S. C. A. is open to any student of the University and purposes to develop and strengthen the spiritual life of its members and to wield a wholesome influence on the life and habits of the general student body.

The Student Council exists to provide self-government in many areas of student life, to develop the capacity of self-direction and to establish and defend growing ideals of student character and activity.

The Veterans Organizations, both the Student American Legion and the Amvets, exist to promote local acquaintance and fellowship and to develop an awareness of the responsibilities of an enlightened citizenship.

The Association of Women Students. Under a grant of powers from the University Administration, the Association of Women Students was organized to further social and intellectual cooperation among the women students. Each woman student is a member of the Association and is directly represented on the House Council and Legislative Board by the president of her residence unit. The Executive Board endeavors to co-ordinate the activities of all women’s groups on the campus and to plan a constructive social program. The Dean of Women is adviser for A. W. S.

The Women’s Athletic Association. For those women interested in constructive opportunity for organized sports, the Women’s Athletic Association offers a well-rounded and interesting program of intramural competition, sport clubs, and social affairs. The Director of Physical Education for Women is adviser to the group.

Omega Phi Kappa. This group is sponsored by the World Fellowship Group of the S. C. A. Its aim is “Every woman of the University world today a leader of the Church of Tomorrow.”

The Roundtable for Freshmen Women, held under the direction of the Dean of Women, exists as an aid in adjustment to campus life. At these meetings various speakers informally discuss those problems of orientation most frequently presented to first-year women students.

Musical Organizations

Choral Society. The Ohio Northern University Choral Society is made up of University students and people of the community, open to all singers who love and appreciate good music. Every December the Choral Society presents The Messiah.

Chorus-Choir. A chorus composed of about sixty-five carefully
selected students from all of the colleges singing the highest types of music, secular and sacred. Frequent appearances at the University as well as outside communities are made each year.

**University Orchestra.** The orchestra organized in the fall quarter, studies works of the great composers and appears with the Choral Society and in concert at the University.

**University Band.** One of the oldest musical organizations on the campus, the Band appears at football and basketball games, in concert, and at other school functions.

**Recitals.** Faculty and student recitals by members of the music department are presented frequently, and a series of concerts by well-known artists is presented each year. Guest soloists are invited to assist in the presentation of great works of the composers.

**Debating and Dramatics**

**The Ohio Northern Debating Association** is a member of the Ohio Intercollegiate Debate Conferences for both men and women. There are other intra- and inter-state forensic contests for either men’s or women’s teams. Membership is open to any student interested in the object of the association. Teams are selected and assisted in their training by a faculty committee.

**The Northern Players,** a dramatic club sponsored by the Department of Speech, present several plays each year. Enrollment in this club is open to all students of the University, except Freshmen, who pass the try-outs. Various types of dramatic productions are given public presentation.

**The Freshman Players** is an organization composed of Freshmen who secure a preliminary training and experience in public presentations.

**Radio Writing** and preparation of materials for radio presentation. A study in effective methods of presentation as well as script writing.

**Technical Organizations and Literary Clubs**

Among the technical organizations and literary clubs are the following:

*The American Institute of Electrical Engineers.*
*The American Society of Civil Engineers.*
*The American Society of Mechanical Engineers.*
*The Biology Club.*
*The Commercial Club.*
The Junior Bar Association.
The Pharmaceutical Association.
Student Affiliates of the American Chemical Society.
The Radio Club.
The Press Club.
The French Club.
The Toastmaster’s Club.
The Onesia Club.

HONORARY SOCIETIES

**Alpha Phi Gamma** for students who have shown ability in journalism as evidenced by meritorious work on the student publications.

**Theta Alpha Phi** for students showing promise of histrionic ability.

**Sigma Kappa Pi** for superior students from all language fields, who have done very good work in the language in which they major and hold an average of at least 1.75 quality points per hour.

**Phi Lambda Pi** whose purpose is to create greater interest in the study of biology and to promote high scholarship in this department.

**Nu Theta Kappa** for men in the College of Engineering and is open to junior and senior students who have made at least 1.7 quality points per hour and who stand well in general activities.

FRATERNITIES

This group comprises seven national social fraternities: Alpha Epsilon Pi, Alpha Kappa Pi, Delta Sigma Phi, Phi Mu Delta, Sigma Phi Epsilon, Sigma Pi, and Theta Kappa Phi, all members of the National Interfraternity Conference; three national professional fraternities, Kappa Psi (Pharmacy), Sigma Delta Kappa (Legal), and Delta Theta Phi (Legal). The Interfraternity Council is composed of representatives from each fraternity except the two legal fraternities.

There are also three local sororities for women, Representatives from each form the Panhellenic Association.

A certificate of eligibility must be obtained from the Dean’s office as a prerequisite to initiation into any fraternity. A minimum of one quarter in residence with a cumulative scholastic average of at least one quality point per credit hour is required of all candidates for initiation.

STUDENT PUBLICATIONS

The *Northern*, the annual yearbook published by the students of the University, contains a record of student activities for the year. Each student
receives a copy of the book at the close of the Spring quarter as a part of the University activity program.

The *Northern Review* is a bi-weekly newspaper published throughout the regular year by the students of the University. Positions on the staff of the newspaper are open to all students on a competitive basis. Scholarships are awarded annually to the editor-in-chief and business manager.

The *Northern Handbook* is published annually by a staff comprised of members of the S. C. A. and is the gift of this organization to the freshman class.

The chairman of the Faculty committee on Student Publications serves as adviser to these publications.

**Athletics**

Ohio Northern is a member of the Ohio Athletic Conference and is well represented in football, basketball, baseball, tennis and track. A well-rounded program of intramural sports is carried out and aims to provide some form of activity for each student.

**Health Service**

The University employs the services of a physician and two registered nurses for the purpose of providing efficient health service to the student body. It maintains its own infirmary and dispensary. Each student is entitled to this health service which includes a yearly medical examination, office consultation and treatment by a physician, medicines from the University dispensary and the use of the infirmary in case of illness. Each student is entitled to ten days treatment in the infirmary without charge except for meals, special medicines, and treatment. The Department of Health and Physical Education keeps an accurate record of the physical condition of each student and provides instruction in personal health care.

Health examinations are required upon admission to the University and, at the judgment of the Health Committee, may be required at any time the interests of the student or of the University may indicate.

**Endowed Scholarships**

1. The Mr. and Mrs. Serge F. Edwards Scholarship ($2,500.00). The beneficiary to be chosen by the donors from the graduates of the Leipsic High School.

2. The Mrs. J. H. Edwards Scholarship ($2,500.00). The beneficiary to be a student preparing for the ministry or some other special work of the church.
3. The George Franklin Getty Scholarship ($1,000.00).
4. The James E. and Caroline Purvis Scholarship ($1,000.00).
5. The Ralph Parlette Scholarship ($1,000.00).
6. The Pleasant Hill Society of the Roundhead Circuit of the Methodist Church Scholarship ($1,000.00).
7. The Justin Brewer Scholarship ($1,000.00).
8. The Rutter-Taggart Scholarship ($2,500.00). Students who are in need of financial assistance, and who have attained scholastic standing in the upper third of their college class are eligible for the income from this scholarship. Preference in awarding this scholarship will be given to students in the College of Law.
9. The Ralph Sealand Scholarship, established by Mrs. Arabella Canfield Sealand, in memory of her son, of $2,415.20, the income of which may be awarded by the president of the University to any undergraduate beyond the freshman year in any college of the University on the basis of need, character, ability, promise of usefulness, and scholastic attainment.
10. The David and Catherine Kegerreis Albright, Scholarship ($5,000.00).

LOAN FUND

A limited number of worthy students who are members of the Methodist Church may secure loans from the Student Loan Fund administered by the Board of Education of that Church. Christian character, satisfactory scholarship, promise of usefulness, financial responsibility, and the recommendation of the church to which the applicant belongs are essential to a loan. Each borrower must sign an interest-bearing promissory note.

ALUMNAE LOAN FUND FOR WOMEN

The National Alumnae Association in 1935 established a loan fund for women students. Senior women are given preference by the committee on awards. Details and blanks may be secured from the Dean of Women.

SELF-HELP

It is strongly recommended that every student entering the University should arrange to finance at least one quarter's expenses before entering. This will afford the student an opportunity to come in personal touch with the employers of Ada and provide ample time to begin his academic or pro-
fessional work. For information concerning scholarships, loans, employment, etc., make application at the offices of the Counselor of Men or the Dean of Women.

GENERAL AND DEPARTMENTAL HONORS FOR SCHOLARSHIPS

The names of recipients of general and departmental honors are announced publicly each year on University Recognition Day.

PRIZES

Lehn and Fink, Inc., New York, gives a gold medal to the pharmacy student accomplishing the most toward the advancement of pharmaceutical science.

Mrs. Avanell Stambaugh of Ada, Ohio, gives $20.00 a year for winners in the song contest.

An endowment for a Pharmacognosy prize provides a medal to be awarded annually to the senior in the College of Pharmacy having the highest number of quality points in pharmacognosy.

GOVERNMENT

Students of the University are expected to possess qualities of character and to maintain certain levels of scholarship. The rules and regulations of the University pertaining to conduct and scholarship are enforced. Students may be dismissed for moral delinquencies and for continued low scholarship. Students who obviously are at variance with the spirit and ideals of the institution may be dismissed for the good of the University, even though no specific offense be charged against them.

WARNING AND PROBATION

It should be the aim of each student to maintain a scholarship rating equivalent to at least one quality point for each credit hour for which he is registered. This is the minimum graduation standard throughout the University.

The average scholarship rating in terms of quality points is found by dividing the total number of scheduled hours for which the student has registered into the total number of quality points earned. For example, 50 scheduled hours and 75 quality points indicate a scholarship rating of 1.5; 16 scheduled hours and 8 quality points indicate a scholarship rating of 0.5.

Freshmen making a scholarship rating of less than 0.5 quality point per scheduled hour, sophomores and juniors making less than 0.7 quality points per scheduled hour, and seniors making less than 1.0 quality point
per scheduled hour during the quarter are sent a notice of warning from the office of the Dean. If the student should again fail to meet the standards in the quarter for which he is warned, he is placed on probation for the following quarter of residence, with the request that his scholarship be brought up to at least one quality point average for each hour scheduled. Failure to meet this academic requirement may subject the student to dismissal.

**Grade Marks and Quality Points**

The credit value of a course is expressed in hours, an hour of credit being given for the satisfactory completion of work requiring one class exercise a week for one quarter. It is equivalent to two-thirds of a semester hour.

The following grade and points system is in effect: Grade A, Excellent, 3 points; B, Good, 2 points; C, Average, 1 point; D, Passing, 0 points; F, Failed, 0 points; I, incomplete; X, absent from examination.

**Eligibility**

Students on probation for any cause shall not represent in a public manner, the University, their class, or any University organization, in any extra-curricular activity.

To be eligible for the office of president or vice president of the Sophomore, Junior or Senior class, editor or business manager of the *Northern Review*, editor or business manager of the *Northern* yearbook, president of the S. C. A., the candidate must have a scholarship rating of at least one and one-half (1 1/2) quality points per hour.

**Summary of Quarterly Tuition and Fees**

*Effective December 2, 1946*

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and General Fee in Liberal Arts (11-18 Hours)</td>
<td>$80.00</td>
</tr>
<tr>
<td>Tuition and General Fee in Engineering, Law and Pharmacy (11-18 Hours)</td>
<td>$85.00</td>
</tr>
<tr>
<td>Tuition for each credit hour below the minimum of 11 hours or above the maximum of 18 hours</td>
<td>5.00</td>
</tr>
<tr>
<td>Auditing (Per 3 credit hours)</td>
<td>5.00</td>
</tr>
<tr>
<td>Schedule change after first week of quarter</td>
<td>1.00</td>
</tr>
<tr>
<td>Graduation fee (including cap and gown)</td>
<td>12.00</td>
</tr>
<tr>
<td>Late Registration</td>
<td>3.00</td>
</tr>
<tr>
<td>Practice Teaching (6 credit hours)</td>
<td>25.00</td>
</tr>
<tr>
<td>Special Examinations (3 credit hours)</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**Laboratory Fees Per Quarter**

A laboratory fee of $1.00 per credit hour will be charged in all laboratory courses in the following departments: Biology, Chemistry, Industrial Arts, Pharmacognosy, Pharmacology, Pharmacy, Physics, and Typing.
GENERAL INFORMATION

MISCELLANEOUS FEES

<table>
<thead>
<tr>
<th>Service</th>
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<tbody>
<tr>
<td>Students</td>
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</tr>
<tr>
<td>Organ Rent</td>
<td>$12.00</td>
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<tr>
<td>Piano Practice Room</td>
<td>2.00</td>
</tr>
<tr>
<td>Private Lessons:</td>
<td></td>
</tr>
<tr>
<td>Voice, Piano, Organ, Violin, Reed or Brass</td>
<td></td>
</tr>
<tr>
<td>2 Lessons per week</td>
<td>35.00</td>
</tr>
<tr>
<td>1 Lesson per week</td>
<td>20.00</td>
</tr>
<tr>
<td>Single Lessons</td>
<td>2.00</td>
</tr>
<tr>
<td>Speech</td>
<td></td>
</tr>
<tr>
<td>1 Lesson per week</td>
<td>15.00</td>
</tr>
</tbody>
</table>

Note: The above fees do not include breakage which will be charged on a cost basis.

Refunds when allowed shall be made as follows: During the first week, 75 per cent; between one and two weeks, 50 per cent; between two and three weeks, 25 per cent. No refunds after three weeks. Written notice of withdrawal must be sent to the Treasurer's Office. Refunds are made as of date of receipt of notice.

ROOM AND BOARD

Room and board can be secured near the University at prices in line with the general price situation. Under a preceding section on Campus Buildings and Equipment there may be found detailed descriptions of accommodations for women, men and married students. The University operates no restaurant or dining hall but board is readily available on and near the campus in privately operated restaurants and in fraternity dining clubs.

ADMINISTRATION

Admission

Application for admission should be made on the blank which will be found at the back of this catalogue. This should be filled out in full and mailed to the office of the registrar.

All necessary information concerning admission not contained in this catalogue will be mailed to the prospective student.

Graduates of first grade high schools or preparatory schools who present fifteen certified and properly distributed units will be admitted to any of the colleges of the University except the College of Law. (See individual college section for proper distribution of units and other entrance requirements).

The credited statement of entrance units sent by the principal of the
school directly to the University must be in the office of the Registrar at least ten days prior to the opening of the quarter, to avoid delay in registration.

Students who are deficient in credits may take entrance examinations the first day of the quarter if they make application in advance.

Mature students not working for a degree may be admitted to the University provided they give satisfactory evidence that they are qualified to pursue the subjects in which they are interested. If such "special students" desire to become candidates for a degree they must qualify before entering upon the second year in residence.

Students asking admission with advanced standing are requested to have an official transcript sent directly to the Registrar at Ohio Northern University by the registrar of the college previously attended. Work from other schools is evaluated by the Committee on Admissions. Students transferring from other colleges will not be granted admission in the absence of an official transcript or certificate of honorable dismissal.

Admission of Veterans

Ohio Northern University has been approved by the U. S. Veterans Administration as an institution for training under Public Law 16 (Vocational Rehabilitation) and Public Law 346 (GI Bill of Rights). Admission requirements are essentially the same as those of other students. Evaluation of military experience is based upon "the Guide" published by the American Council on Education. The Certificate of Eligibility for training issued by the Veterans Administration should be presented at the time of registration.

Every effort is made to assist the veterans in his educational objectives. Admission officers welcome veterans to the campus for personal interviews prior to registration.

Student Counseling

In addition to counsel from the Committee on Admissions, each student upon admission to the University is assigned to a faculty adviser. The duty of this adviser is to help the student in regard to the planning of courses, the selection of studies and to aid him in the problems of his college life and work. After the student has selected the department in which
he desires to major, the professor in charge of that department becomes his adviser.

Intelligence tests, placement and vocational tests and physical examinations are used as part of the advisory program. It is expected, however, that the student show some initiative in working out his own program.

The Counselor for Men and Dean of Women offer counselling in the personal and social problems of the student.

PRE-REGISTRATION AND REGISTRATION

Pre-registration and registration days are indicated in the calendar. Pre-registration is devoted to conferences with advisers and making the student's schedule of classes for the following quarter. Registration day is given over to the payment of tuition. Failure to attend to these duties on the proper day will subject the student to an extra fee of $3.00 for late registration. This does not apply to new registrants. Students who register after registration day may find it necessary to reduce the number of credit hours. Reduction will be made in proportion to the time lost.

ATTENDANCE

Regular and prompt attendance at all classes and laboratory exercises is expected of every student. The student is responsible to the instructor for all work missed on account of absence. Instructors make report of absences to the Counselor of Men or the Dean of Women.

Requests for excuses must be presented in writing to the Counselor of Men or the Dean of Women within 24 hours after class or laboratory work is resumed. All excuses for absence due to illness must be obtained from the University physician. Instructors are not authorized to grant excuses for absences from their classes.

For each unexcused absence from class or laboratory appointments, the total number of quality points earned during the quarter is reduced by one-half point. Absences the day before or the day after a regular college holiday or recess involve the deduction of one quality point for each absence.

Chapel attendance is required except when excused by the Counselor of Men or Dean of Women. Three unexcused absences are allowed each quarter. One-fifth hour credit is deducted from the student's total credit for each convocation missed above three.
WITHDRAWING A COURSE

The student is held responsible for the work scheduled on the registration card. No course may be dropped or changed except by consent of the Dean and the student's adviser. Withdrawal from a course without proper procedure shall be checked as a failure in the course.

In case a student wishes to drop or change a course, it must be done within the first week of the quarter. A charge of $1.00 is made for each withdrawal or addition of a course after the first week.

Any student wishing to withdraw from the College in which he is registered must notify the Dean of his intentions. Failure to do this will jeopardize the standing of the student.

REGULATIONS

1. Mid-term examinations are held at the discretion of the instructor. Final examinations are held at the close of each quarter.

2. All students must be present at final examinations. Absence from any final examination, unless caused by sickness or other unavoidable conditions, will result in a failure in the course.

3. A student absent from examinations may on presenting a satisfactory excuse receive permission from the Dean to take the examination at a later time.

4. All "X" grades must be removed within the first eight weeks of the next quarter in attendance to obtain credit without repeating the work in class.

5. All required courses in which a grade of F is made must be taken again in class the first quarter in which the subject is given after the failure occurs.

6. All incompletes must be removed within eight weeks of the beginning of the next quarter in attendance in order to obtain credit without again taking the work in class. In case this matter is not attended to, the mark will lapse into a failure.

7. It is expected that each student assume responsibility for meeting any requirements in this catalog which may apply to him.

EXTENSION COURSES

In order to meet the needs of teachers in service and others the University maintains an Extension Department. Classes will be organized in centers where there is sufficient demand. Students enrolling in these courses are expected to do the regular college work. Not more than one-fourth of
any curriculum leading to a degree or diploma shall be taken in extension classes. No courses are offered by correspondence.

For information write the Director of Extension Courses.

**DEGREES**

The work of the University is entirely undergraduate.

In order to graduate in any course the student must have one quality point per scheduled hour.

No student who has not been in residence for at least three quarters may be a candidate for a degree.

Final credits offered toward graduation must be earned in residence, except for students completing arts-professional combination courses.

Application for senior rating and graduation must be made to the Registrar at the end of the junior year.

The appropriate bachelor's degree is given upon the completion of courses as outlined in the four colleges of the University.

A diploma is given in the three-year course in education.

As a condition for graduation the University insists upon a satisfactory use of English.

Degrees are conferred at the commencement exercises which are held at the close of the Spring Quarter. Seniors who have finished their work at the close of any previous quarter are expected to be present at the commencement exercises. Those whose work will be finished by the close of the Summer School are entitled to the privileges of the senior class, but their diplomas are not issued until the requirements for graduation are fully met.

**Graduation With Honors**

Two classes of senior honors are recognized and conferred at graduation: honors *with distinction* granted to those who have a quality point average of 2.3 with no grade below D; and honors *with high distinction* granted to those who have a quality point average of 2.6 with no grade below C. These honors in scholarship are recorded on the diplomas, recognition is given at commencement, and the names of the recipients are printed in the catalogue. To receive senior honors a student must be in residence at Ohio Northern at least six quarters.
ADMISSION

Graduates from first grade high schools or accredited academies whose credits show proper distribution of units are admitted, without examination, on presentation of properly signed entrance certificates. Blanks for this purpose may be had by addressing the Registrar. If the student presents fifteen acceptable units for entrance but is deficient in certain of the prescribed units, the deficiencies as far as possible shall be made up as part of the regular work of the freshman year. The quality of the high school record is an important index of probable success in doing college work.

An applicant from another college seeking advanced standing must present evidence of honorable dismissal and an official transcript of his college record.

Mature persons without special preparation not desiring to earn a degree may enter any department and pursue the studies they choose, if, on consultation, the head of the department is satisfied that they have sufficient preparation to pursue the work successfully. Such applicants are classified as special students.

DIVISIONS AND DEPARTMENTS

For purposes of administration and integration the departments of the college are organized into four divisions. The chairmen of the divisions and the Dean constitute the curriculum committee of the College of Liberal Arts.
DIVISION I—Language, Literature and Arts.
(a) English Language, Literature and Speech.
(b) Foreign Language and Literature.
(c) Music.

DIVISION II—Natural Sciences.
(a) Biology.
(b) Chemistry.
(c) Mathematics.
(d) Physics.

DIVISION III—Social Sciences.
(a) Economics and Business Administration; Secretarial.
(b) Health and Physical Education.
(c) History and Political Science.
(d) Psychology and Sociology.
(e) Religion and Philosophy.

DIVISION IV—Teacher Training.
(a) Elementary Education.
(b) Secondary Education.
(c) Business Administration.
(d) Health and Physical Education.
(e) Industrial Arts Education.
(f) Public School Music.

Under each division heading which appears later in the Liberal Arts section of this bulletin dealing with description of courses is found a general statement which is of great importance to the student. This statement calls attention to the courses that should be selected as a background preparation for advanced and intensive work in that particular division. Likewise, under the appropriate departmental heading there is a more detailed statement referring to the various courses that should be elected (some of them during freshman and sophomore years) to prepare the student for work in that department.

COURSES OF STUDY AND THE POST WAR PERIOD

From the numerous offerings of courses, for example, mathematics, natural sciences, health and physical education, accounting, economics, secretarial studies, business administration, education, history and government, speech, modern foreign languages, English, music, shop and drawing, stu-
Students may select special groups of studies or curricula which meet their needs, interests and abilities.

Students should also keep in mind that their adjustments to the changing conditions following the war will depend largely upon a broad liberal education with special emphasis on an understanding of the fundamental principles of government, sociology, economics, history, psychology, religion, science and English.

**Division Electives**

Freshmen and sophomores are given considerable freedom in the choice of courses. It is possible for the student to select such subjects for study as will serve his best interests and capacities.

In order that the curriculum may be interesting, broad, and cultural, yet flexible enough to allow preparation for the various professions and needs of life, the student during his first two years in college is required to select two complete year courses in each of the first three divisions outlined above, the remainder of the work in these years being elective from any course open to a student of this rank. Ordinarily the first year schedule will include at least one year course from each division plus one or more electives.

The group electives are to be made as follows:

**From Division I—Language, Literature and Arts**
Nine hours of English Composition must be scheduled during the freshman year. The remaining nine hours may be elected from English Literature or Speech.

**From Division II—Natural Sciences**
Two complete year courses must be selected from different fields, for example, Botany, Chemistry, Mathematics, Physics, or Zoology.

**From Division III—Social Sciences**
Two complete year courses must be elected. Six hours of Bible are required and should be scheduled during sophomore or junior year. Bible cannot be used toward satisfying the social science requirement unless nine hours are completed. Physical education is required of all students during the first six quarters in residence, with one hour of credit each quarter, but can not be used toward satisfying this division requirement.

**From Division IV—Teacher Training**
Students preparing to teach in the public schools are required to meet the professional requirements in Education as indicated under this division in a later section of this bulletin.

**Major and Minor**

At the beginning of the third year the student is ready to choose, if he has not already done so, one division and the department or departments within this division in which he desires to complete his major or minor, or
the field of concentration. For example, a prospective chemist would choose Division II—Natural Sciences, Department of Chemistry.

The candidate for a degree must complete in a logical sequence a major of not less than 36 quarter hours and a minor of not less than 24 quarter hours. The adviser will assist the student in planning the major and minor of the field of concentration. Candidates for the degree of Bachelor of Arts who expect to teach in the public schools must meet the requirements for the majors and minors as specified in the Division of Teacher Training.

More than one departmental major may be completed by the student in which case a minor is not required unless one major requires an additional minor.

Electives in Other Colleges of the University

In the College of Engineering, the College of Pharmacy, and the College of Law there are many courses described, a limited number of which may be elected by students registered in the College of Liberal Arts, thus enabling them more fully to prepare for specific vocational objectives. The student must have junior rank before electing courses in the College of Law.

Graduation

As a condition of graduation with the bachelor's degree, a student must complete 186 quarter hours (including six hours of physical education), this being the equivalent of fifteen or sixteen class exercises a week for twelve quarters. The student must have an average scholarship rating of at least one quality point for each scheduled hour, a C average.

A residence period of three quarters and the completion of 45 quarter hours, with at least 45 quality points, elected largely from "200" courses, in the College of Liberal Arts of this University are minimum requirements for a student admitted on advanced standing.

Students of unusual ability may, with the consent of the faculty of the College of Liberal Arts, complete their work in less than twelve quarters. Applicants for this privilege should have an average of 2.6 quality points per hour: honor student rank.

By continuing in residence during summers the entire college course may be completed in three years.

General Regulations

1. The student may not register for more than sixteen or seventeen hours of academic work unless he has received a rating of B or better in the
preceding quarter. If the previous record of the student shows that he is able, the Dean may grant extra hours.

2. Candidates for the degree of Bachelor of Arts must complete a minimum of six quarter hours of work in Bible.

3. The student must notify the Dean of his choice of a major before registering for the junior year. The Dean will then name an adviser for the student.

4. No course in which a student has received a grade of D is accepted toward a major.

5. Seniors taking certain freshman courses are not given full credit. Seniors electing freshman courses should consult the Dean.

6. Juniors and seniors are requested to schedule a majority of their courses from the “200” group: Upper Division Courses.

7. For purposes of classification the minimum requirements for sophomore standing are 38 credit hours and a point average of 0.5; for junior standing, 84 credit hours and a point average of 0.7; for senior standing, 130 credit hours and a point average of 0.9.

8. Not more than one-fourth of any curriculum leading to a degree or diploma shall be taken in extension classes.

9. Within certain limits credit may be obtained by passing proficiency examinations.

10. Application for senior rating and graduation must be made to the Registrar at the end of the junior year.

**Freshman Year**

The Freshman frequently asks, What courses shall I take when I go to college? Obviously in the Liberal Arts college class schedules will vary because students have different interests and objectives. In general the student will schedule Physical Education, English Composition, a course in one of the social sciences, a course in one of the natural sciences or mathematics, and one or two electives selected from the field of major interest, for example, music, commerce, physical education, elementary education, languages, pre-professional subjects, or academic fields. Most of the courses taken during freshman and sophomore years are designed to lay a broad foundation preparatory to work in a field of concentration or specialization. The objective at Ohio Northern is to build a curriculum to serve the best interest of the student.
Courses Open to Freshmen

Botany 107-109, 110
Business Organization 103-105
Chemistry 101a-103a; 101-103
English 101, 102, 102a
French 101-103 or 104a-106a
German 101-103 or 104a-106a
Health Education 117
History 104-106
History 110-112
Hygiene 115
Industrial Arts 101
Latin 107-109 or 110-112

Mathematics 100, 101, 101a, 103, 103b, 105
Mathematics of Finance 121
Mechanical Drawing 111-113
Music: Theoretical and Applied
Physical Education 101-103; 156
Physics 109-111, 109a-111a
Political Science 104-106
Spanish 101-103
Speech 101-103
Shorthand
Typewriting
Zoology 101-103

Combination Curricula

Combination curricula lead to the degree of Bachelor of Arts and to a professional degree, with a reduced period of time. They are designed for students who desire an academic background for their professional course.

Arts-Engineering Combination

During the first three years the student is registered in the College of Liberal Arts and must secure a minimum of 145 quarter hours of credit. Upon the successful completion of 50 quarter hours in the College of Engineering during his fourth year, with a quality point average of one or better, the degree of Bachelor of Arts is granted. Upon fulfilling the requirements as specified in his selected engineering curriculum, the student will be awarded the appropriate degree in engineering.

Students entering with advanced credits from another college must be in residence three quarters (the third year) and complete a minimum of 45 quarter hours in the College of Liberal Arts in this University.

Students entering the Arts-Engineering combination course must conform to the rules and regulations of the College of Liberal Arts. By complying with these regulations it will be possible for the student to secure both the degree of Bachelor of Arts and the appropriate engineering degree in five years.

First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 101</td>
<td>1 Physical Education 102</td>
<td>1 Physical Education 103</td>
</tr>
<tr>
<td>English 101</td>
<td>3 English 102</td>
<td>3 English 102a</td>
</tr>
<tr>
<td>Mathematics 101</td>
<td>5 Mathematics 103</td>
<td>5 Mathematics 105</td>
</tr>
<tr>
<td>Chemistry 101</td>
<td>5 Chemistry 102</td>
<td>5 Chemistry 103</td>
</tr>
<tr>
<td>History 110</td>
<td>3 History 111</td>
<td>3 History 112</td>
</tr>
</tbody>
</table>
Fourth and Fifth Years

Student is registered in College of Engineering.

* Year courses in Accounting, Psychology, or Business Law may be submitted for sociology or Political Science.

ARTS-MEDICINE COMBINATION

Upon the completion of nine quarters of work in the College of Liberal Arts, prospective medical students may be granted a leave of absence for the senior year, and receive the degree, Bachelor of Arts, upon the successful completion of the first year of work in the medical school. This means a saving of at least one year of time. Pre-medical students are urged to give favorable consideration to the combination curriculum and receive both the degree of Bachelor of Arts from this institution and the professional degree from the medical school.

At least 140 quarter hours, exclusive of physical education, are required, which must include the required and group elective courses for the degree of Bachelor of Arts. A scholarship average of at least 1.5 points per hour is desired for recommendation to a medical school. At least 90 quarter hours must be completed in this institution.

In case the student wishes to complete four years in college leading to the degree of Bachelor of Arts, it is strongly urged that additional courses in social studies, language and literature, logic, philosophy, and other non-sciences be scheduled.

A medical college Professional Aptitude Test is administered the year in which the student expects to apply for admission to medical school. It is also recommended that the student take the Graduate Record
Examination since many medical schools require the student to take this examination as a condition for admission.

### First Year

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
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<tr>
<td>English 101</td>
<td>English 102</td>
<td>English 102a</td>
</tr>
<tr>
<td>French or German</td>
<td>French or German</td>
<td>French or German</td>
</tr>
<tr>
<td>Chemistry 101</td>
<td>Chemistry 102</td>
<td>Chemistry 103</td>
</tr>
<tr>
<td>Biology 101</td>
<td>Biology 102</td>
<td>Biology 103</td>
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<tr>
<td>Social Science</td>
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<td>Social Science</td>
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</table>

### Second Year

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<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
<td>Physical Education 106</td>
</tr>
<tr>
<td>Chemistry 104</td>
<td>Chemistry 105</td>
<td>Chemistry 106</td>
</tr>
<tr>
<td>Psychology 101</td>
<td>Psychology 102</td>
<td>Psychology 104 or 210</td>
</tr>
<tr>
<td>Biology 206</td>
<td>Biology 213</td>
<td>English 108 or 122a</td>
</tr>
<tr>
<td>Elective</td>
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<td>Elective</td>
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<td>5</td>
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### Third Year

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<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>English or Speech</td>
<td>English 211</td>
<td>Embryology 218</td>
</tr>
<tr>
<td>Physics 109 or 109a</td>
<td>Physics 110 and 110a</td>
<td>Physics 111 and 111a</td>
</tr>
<tr>
<td>Chemistry 206</td>
<td>Chemistry 207</td>
<td>Ethics 203</td>
</tr>
<tr>
<td>Bible 151</td>
<td>Bible 152</td>
<td>Elective</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

It is highly desirable that a course in mathematics be scheduled in freshman or sophomore year since some medical schools require mathematics for admission.

### Arts-Dental Combination

Upon completion of nine quarters of work in the College of Liberal Arts, the student may be granted a leave of absence for the senior year, and receive the degree of Bachelor of Arts upon the successful completion of the first year of work in the dental school. These nine quarters of work must total 140 hours, including the required and group elective courses.

The general requirements are much the same as for the Arts-Medicine combination course.

### Arts-Nursing Combination

Arrangements have been made for a combined curriculum in Liberal Arts and Nursing with St. Luke’s Hospital School of Nursing, Cleveland, Ohio. The plan calls for five years of study and can be completed in five calendar years. During the academic program of three years spent at Ohio Northern University, the student completes the course as outlined below. The professional course requires thirty months in residence at St. Luke’s, consisting of twenty-seven and one-half months of instruction with ten
weeks of vacation. The student has her first professional experience during the three summer months following her sophomore year. After the completion of the junior year in college she again enters St. Luke’s for the summer and continues for the remainder of her professional work. The completion of the arts-nursing curriculum leads to the degree of Bachelor of Arts and a diploma in nursing. Students who elect this combination curriculum will be expected to do better than average quality work while in college and to have those personal and social qualities which are so essential to success in the field of nursing.

A somewhat similar relationship between Lima Memorial Hospital School of Nursing and Ohio Northern University has been completed, which should be of special interest to young women of northwestern Ohio. The curriculum varies somewhat from the one listed below.

### First Year

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
</tr>
<tr>
<td>English 101</td>
<td>English 102</td>
<td>English 102a</td>
</tr>
<tr>
<td>Biology 101</td>
<td>Biology 102</td>
<td>Biology 103</td>
</tr>
<tr>
<td>Political Science 104</td>
<td>Political Science 105</td>
<td>Hygiene 115</td>
</tr>
<tr>
<td>Chemistry 101a or 101</td>
<td>Chemistry 102a or 102</td>
<td>Chemistry 103a or 103</td>
</tr>
<tr>
<td>Elective (Foreign Language or Mathematics)</td>
<td>Elective (Foreign Language or Mathematics)</td>
<td>Elective (Foreign Language or Mathematics)</td>
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<tr>
<th>FALl QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
<td>Physical Education 106</td>
</tr>
<tr>
<td>Biology 206</td>
<td>Biology 213</td>
<td>Biology 218</td>
</tr>
<tr>
<td>Chemistry 206</td>
<td>Chemistry 207</td>
<td>Bible 153</td>
</tr>
<tr>
<td>Human Physiology 211</td>
<td>Bacteriology 222</td>
<td>Bacteriology and Health 223</td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Sociology 151</td>
<td>Sociology 152</td>
<td>Sociology 211 or 212</td>
</tr>
<tr>
<td>Psychology 101</td>
<td>Psychology 102</td>
<td>Psychology 210</td>
</tr>
<tr>
<td>Biochemistry 261</td>
<td>English 211</td>
<td>Biology 230</td>
</tr>
<tr>
<td>English 210</td>
<td>Biology 219</td>
<td>English 212</td>
</tr>
<tr>
<td>Bible 151</td>
<td>Foods and Nutrition 212</td>
<td>Ethics 203</td>
</tr>
</tbody>
</table>

### Third Year

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Sociology 151</td>
<td>Sociology 152</td>
<td>Sociology 211 or 212</td>
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<tr>
<td>Psychology 101</td>
<td>Psychology 102</td>
<td>Psychology 210</td>
</tr>
<tr>
<td>Biochemistry 261</td>
<td>English 211</td>
<td>Biology 230</td>
</tr>
<tr>
<td>English 210</td>
<td>Biology 219</td>
<td>English 212</td>
</tr>
<tr>
<td>Bible 151</td>
<td>Foods and Nutrition 212</td>
<td>Ethics 203</td>
</tr>
</tbody>
</table>

### Pre-Law

For admission to the Ohio Northern University College of Law at least 90 quarter hours (60 semester hours), exclusive of physical education are required.
First Year

FALL QUARTER
Physical Education 101 1
English 101 3
Mathematics 100 or 101 5
History 104 3
Electives 5

A year course in laboratory science (biology, chemistry or physics) may be elected.

WINTER QUARTER
Physical Education 102 1
English 102 3
Mathematics 103 or 103a 5
History 105 3
Electives 5

SPRING QUARTER
Physical Education 103 1
English 102a 3
Mathematics 112 5
History 106 3
Electives 5

Second Year

FALL QUARTER
Physical Education 104 1
Speech 110 or English 121 3
Political Science 101 3
Psychology 101 5
Economics 121 3
Elective 2-3

Alternates for Economics 121, 122, 123 are History 113, 114, 115, or History 110, 111, 112.

WINTER QUARTER
Physical Education 105 1
Speech 111 or English 122 3
Political Science 102 3
Psychology 102 3
Economics 122 3
Elective 3

SPRING QUARTER
Physical Education 106 1
History 3
Political Science 103 3
Psychology 104 or 210 3
Economics 123 3
Elective 3

Arts-Law Combination

Since many law school require a minimum of three years of college work, it is strongly recommended that the student plan to take at least nine quarters of work in the College of Liberal Arts, to complete a total of 140 quarter hours, exclusive of physical education, and to cover the prescribed and group elective courses as well as a number of "200" courses in the social sciences. A broad liberal education is the best foundation for the study of law. The fourth year is taken as the freshman year in law school. Upon the successful completion of the freshman year in law with a quality point average of 1.0 or better the degree of Bachelor of Arts is granted. After two more years of successful work in the law school the degree, Bachelor of Laws, is granted.

It should be noted that a student admitted upon advanced credit from another college must be in residence three quarters (the third year) and complete a minimum of 45 quarter hours in the College of Liberal Arts in this University.

Students entering upon the Arts-Law combination course must meet the regular entrance requirements and conform to the rules and regulations of the College of Liberal Arts.

COURSES PRELIMINARY TO PROFESSIONAL OR TECHNICAL CURRICULA

There are many fields or professions which require liberal arts courses as a foundation or include certain courses in the arts and sciences in their
curricula. Many of these basic courses are offered at Ohio Northern University. Students who desire the favorable advantages for study offered on this campus may plan to spend one or more years here, paralleling and completing some of the foundation courses, then transfer to a larger institution where the professional curriculum may be concluded.

Agriculture

The student who may ultimately look toward the completion of a curriculum in a College of Agriculture may do well to take one or two years of work in the College of Liberal Arts, scheduling the courses listed below.

**First Year**

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
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<tr>
<td>English 101</td>
<td>3 English 102</td>
<td>3 English 102a</td>
</tr>
<tr>
<td>Biology 107</td>
<td>3 Biology 108</td>
<td>3 Biology 109</td>
</tr>
<tr>
<td>Chemistry 101</td>
<td>5 Chemistry 102</td>
<td>5 Chemistry 103</td>
</tr>
<tr>
<td>Mechanical Drawing 111</td>
<td>4 Mechanical Drawing 112</td>
<td>4 Elective</td>
</tr>
</tbody>
</table>

**Second Year**

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<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
<td>Physical Education 106</td>
</tr>
<tr>
<td>Biology 101</td>
<td>3 Biology 102</td>
<td>3 Biology 103</td>
</tr>
<tr>
<td>Mathematics 101</td>
<td>5 Mathematics 103</td>
<td>3 Mathematics 105</td>
</tr>
<tr>
<td>Economics 121</td>
<td>3 Economics 122</td>
<td>3 Economics 123</td>
</tr>
<tr>
<td>Psychology 101</td>
<td>5 Psychology 102</td>
<td>3 Elective</td>
</tr>
</tbody>
</table>

Suggested electives are courses in literature, local flora, speech and business organization.

**Entomology**

Students who may later enter upon the study of entomology in another institution should give consideration to the schedule that follows:

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
</tr>
<tr>
<td>English 101</td>
<td>3 English 102</td>
<td>3 English 102a</td>
</tr>
<tr>
<td>Chemistry 101</td>
<td>5 Chemistry 102</td>
<td>5 Chemistry 103</td>
</tr>
<tr>
<td>Biology 101 or 107</td>
<td>3 Biology 102 or 108</td>
<td>3 Biology 103 or 109</td>
</tr>
<tr>
<td>Mathematics 100 or 101</td>
<td>5 Mathematics 103</td>
<td>5 Mathematics 105</td>
</tr>
</tbody>
</table>

**Forestry or Conservation**

The suggested one year program which follows is designed for students who expect to enter a College of Forestry or enter the field of Conservation.
## FALL QUARTER
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 101</td>
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</tr>
<tr>
<td>English 101</td>
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</tr>
<tr>
<td>Biology 107</td>
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<tr>
<td>Mathematics 101</td>
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<tr>
<td>Chemistry 101</td>
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## WINTER QUARTER
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<td>English 102</td>
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<tr>
<td>Biology 108</td>
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</tr>
<tr>
<td>Mathematics 103</td>
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</tr>
<tr>
<td>Chemistry 102</td>
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## SPRING QUARTER
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Physical Education 103</td>
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<tr>
<td>English 102a</td>
<td>3</td>
</tr>
<tr>
<td>Biology 109</td>
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</tr>
<tr>
<td>Mathematics 105</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry 103</td>
<td>5</td>
</tr>
</tbody>
</table>

If a second year is contemplated at this institution, the following courses are among those recommended: English literature, 9 hours; economics, 9 hours; zoology, 9 hours, physics, 15 hours; geography, 3 hours; psychology, 5 hours; American government, 9 hours; engineering drawing, 8 hours; local flora, 3 hours; and surveying, 5 hours. In some instances, depending upon the student’s objectives, calculus should be elected instead of some other courses.

## JOURNALISM
Students who have completed at least two years of study in the College of Liberal Arts and have satisfactorily met specific requirements may enter schools of journalism and complete work for the degree in journalism. The student should have a working knowledge of French or German and should also possess some skill in typewriting.

Professional courses in schools of journalism are offered on the assumption that the student has a broad foundation in the knowledge of liberal subjects calculated to enrich the mind. The courses outlined serve as foundational work for professional courses in journalism.

### First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 101</td>
<td>1</td>
</tr>
<tr>
<td>English 101</td>
<td>3</td>
</tr>
<tr>
<td>French, German or Spanish</td>
<td>3</td>
</tr>
<tr>
<td>Biology 101 or Chemistry 101</td>
<td>3-5</td>
</tr>
<tr>
<td>History 110 or 113</td>
<td>3</td>
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<tr>
<td>English 121 or Public Speaking 101</td>
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<table>
<thead>
<tr>
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<td>English 102</td>
<td>3</td>
</tr>
<tr>
<td>French, German or Spanish</td>
<td>3</td>
</tr>
<tr>
<td>Biology 102 or Chemistry 102</td>
<td>3-5</td>
</tr>
<tr>
<td>History 111 or 114</td>
<td>3</td>
</tr>
<tr>
<td>English 122 or Public Speaking 102</td>
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### Second Year

<table>
<thead>
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<td>Economics 121</td>
<td>3</td>
</tr>
<tr>
<td>American Government 101</td>
<td>3</td>
</tr>
<tr>
<td>French, German or Spanish</td>
<td>3</td>
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<tr>
<td>General Psychology 101</td>
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<table>
<thead>
<tr>
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<th>Credits</th>
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<tbody>
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<tr>
<td>English 104 or 107</td>
<td>3</td>
</tr>
<tr>
<td>Economics 122</td>
<td>3</td>
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<td>American Government 102</td>
<td>3</td>
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<tr>
<td>French, German or Spanish</td>
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<tr>
<td>Biology 109</td>
<td>3</td>
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<tr>
<td>Mathematics 105</td>
<td>5</td>
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<tr>
<td>Chemistry 103</td>
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</tbody>
</table>

## LABORATORY TECHNICIANS (MEDICAL)

The curriculum outlined below is designed to include the cultural and basic courses preliminary to admission to schools training laboratory technicians. An Arts-Technician combination course may be designed leading to the bachelor’s degree.
### First Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
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<tr>
<td>English 101</td>
<td>English 102</td>
<td>English 102a</td>
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<td>Biology 102</td>
<td>Biology 103</td>
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</tr>
<tr>
<td>Physics 109, 109a</td>
<td>Physics 110, 110a</td>
<td>Physics 111, 111a</td>
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### Second Year

<table>
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<th>Spring Quarter</th>
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<td>Bacteriology 222</td>
<td>Bacteriology 223</td>
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<tr>
<td>Sociology 151</td>
<td>Sociology 152</td>
<td>Sociology 153</td>
</tr>
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<td>Chemistry 105</td>
<td>Chemistry 105</td>
<td>English</td>
</tr>
<tr>
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<td>Psychology 102</td>
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### Third Year

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<th>Spring Quarter</th>
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<tbody>
<tr>
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<tr>
<td>Chemistry 206</td>
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<td>Biochemistry 261</td>
<td>Biology 219</td>
<td>Bible 153 or Ethics 203</td>
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<tr>
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</table>

Elective 2-3

It is highly desirable that the student have a reading knowledge of one modern foreign language, preferably German or French.

### Veterinary Medicine

Five years are required to complete a course in veterinary medicine, the first year of which consists of courses usually offered in the college of liberal arts. A first year suggested program follows:

### Other Suggested Curricula

#### Business Administration and Law

This program is planned for students who expect to enter businesses which require, in addition to a knowledge of the commercial world, some training in legal subjects. This curriculum is so designed that the major in business administration can be completed in three years and the senior year can be devoted full-time to selected courses in the college of law which will
be of great aid to the modern business man. This curriculum is open only to students above average ability.

Upon completion of this curriculum in a satisfactory manner the degree of Bachelor of Arts is awarded.

### First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
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<td>English 102a</td>
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<td>Mathematics 103 or 103b</td>
<td>Mathematics 121</td>
</tr>
<tr>
<td>Natural Science 3-5</td>
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</tr>
<tr>
<td>2-3</td>
<td>2-3</td>
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### Second Year

<table>
<thead>
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<th>SPRING QUARTER</th>
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<tbody>
<tr>
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<td>Psychology 102</td>
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<td>Accounting 131</td>
<td>Accounting 132</td>
<td>Accounting 133</td>
</tr>
<tr>
<td>English or Speech</td>
<td>English or Speech</td>
<td>Electives</td>
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### Third Year

<table>
<thead>
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<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>Accounting 231</td>
<td>Accounting 232 or 235</td>
<td>Accounting 233 or 236</td>
</tr>
<tr>
<td>Economics 204</td>
<td>Economics 207 or 247</td>
<td>Economics 208 or 251</td>
</tr>
<tr>
<td>Economics 214 or Business Administration 241</td>
<td>Economics 215 or Business Administration 245</td>
<td>Economics 217 or Business Administration 246</td>
</tr>
<tr>
<td>Bible 151</td>
<td>Bible 152</td>
<td>Mathematics 214</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
<td>3-5</td>
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*Fourth Year*

<table>
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<td>Agency</td>
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<td>Tort 1</td>
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<td>5</td>
</tr>
</tbody>
</table>

*Courses taken in College of Law.

### Chemistry

The teaching profession and the industries as well as the field of research offer many fine opportunities to persons who have good preparation in this and related divisions of learning. The curriculum herein recommended, which leads to the degree of Bachelor of Arts, is intended to prepare the student who is scientifically inclined to avail himself of these opportunities, and to create in his mind the desire to continue advanced study in the grad-
uate school or research laboratory. Adjustment of the curriculum, to accommodate the student who desires to qualify as a teacher of chemistry in the public schools, will be made, provided this desire is indicated prior to the beginning of the junior year.

**First Year**

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
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<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
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</tr>
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<td>Chemistry 103 or 103A</td>
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<td>English 102</td>
<td>English 102A</td>
</tr>
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<td>Mathematics 105</td>
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<tr>
<td>Mechanical Drawing 111</td>
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**Second Year**

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<th>SPRING QUARTER</th>
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<tbody>
<tr>
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<td>Chemistry 105</td>
<td>Chemistry 106</td>
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<td>Speech 101</td>
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**Third Year**

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<td>Economics 123</td>
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**Fourth Year**

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<tbody>
<tr>
<td>Bible 151</td>
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<td>Chemistry 214</td>
</tr>
<tr>
<td>Chemistry 215</td>
<td>Chemistry 216</td>
<td>Chemistry 217</td>
</tr>
<tr>
<td>Modern Language</td>
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<td>Modern Language</td>
</tr>
<tr>
<td>Physics 216-217</td>
<td>Physics 217-218</td>
<td>Physics 214</td>
</tr>
</tbody>
</table>

German is advised and will generally be required to fulfill the modern language schedule.

Students who are specially interested in physical chemistry and who plan to do graduate work in the field should in the junior year elect advanced courses in mathematics; those who plan later to do work in biochemistry or agricultural chemistry would do well to elect courses in biology; and those who are preparing to teach chemistry should elect courses in education and psychology. In the senior year candidates for the degree of Bachelor of Science in Education should omit Bible 151, 152, 153 and Physics 216, 217, 218, and 214 and elect appropriate courses in education instead. If a minor in physics is desired, Physics 220 should be elected.
ECONOMICS AND BUSINESS ADMINISTRATION

With the increasing complexity of industry and commerce, the system of apprenticeship as a method of business training has become less satisfactory. Greater opportunity in business is therefore open to the college man with business training.

The objective which the individual student seeks will determine electives chosen. For example, if accounting is the student’s objective, additional courses in this field will be elected. If the field is sales, then electives should include: marketing, retailing, salesmanship, and advertising. If general business training is desired, electives will be in the field of finance and management. In all cases electives chosen must have the approval of the adviser and Dean.

The following curriculum has been planned to meet the needs of students who expect to do graduate work in economics or business administration or who intend to enter industry. The curriculum leads to the degree of Bachelor of Arts.

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<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
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<td>Political Science 106</td>
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<td>WINTER QUARTER</td>
<td>SPRING QUARTER</td>
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<td>FALL QUARTER</td>
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Second Year

<table>
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<th>SPRING QUARTER</th>
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<tr>
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<td>English or Speech or</td>
<td>English 118 or</td>
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<td>Electives</td>
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<tr>
<td>FALL QUARTER</td>
<td>WINTER QUARTER</td>
<td>SPRING QUARTER</td>
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Third Year

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<tr>
<th>FALL QUARTER</th>
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<td>Economics 204</td>
<td>Economics 207 or 247</td>
<td>Economics 208 or 251</td>
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<tr>
<td>Economics 214 or</td>
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<td>Economics 217 or</td>
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<td>Business Administration 241</td>
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<td>Accounting 231</td>
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<td>Bible 151</td>
<td>Bible 152</td>
<td>Mathematics 214</td>
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<td>Electives</td>
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Fourth Year

Winter Quarter
Economics 215 or
Business Administration 245 3
Business Law 222 3
Electives 9-10

Spring Quarter
Economics 217 or
Business Administration 247 3
Business Law 223 3
Co-operative Marketing 242 3
Electives 6

Physics

The curriculum as given is suggested for those expecting to do graduate work in physics. For those wishing to teach the physical sciences in the public schools, the curriculum may readily be modified if psychology is taken in the second year, and the professional courses in education are scheduled during the junior and senior years. The degree of Bachelor of Arts is awarded upon completion of this curriculum.

First Year

Fall Quarter
Physical Education 101
English 101
Mathematics 100 or 101
Physics 109a
History 104 or 110
Political Science 104

Winter Quarter
Physical Education 102
English 102
Mathematics 103 or 103b
Physics 110a
History 105 or 111
Political Science 105

Spring Quarter
Physical Education 103 1
English 102a 3
Mathematics 105 5
Physics 111a 2
History 106 or 112 3
Political Science 106 2

Second Year

Fall Quarter
Physical Education 104 1
Physics 104 5
Mathematics 107 5
Modern Language 3 3
English 106 3

Winter Quarter
Physical Education 105 1
Physics 106 5
Mathematics 108 5
Modern Language 3 3
English 107 3

Spring Quarter
Physical Education 106 1
Physics 105 5
Mathematics 109 5
Modern Language 3 3
English 108 3

Third Year

Fall Quarter
Physics 216 4
Mathematics 216 4
Chemistry 101 or 101a 5 5
Modern Language 3 3

Winter Quarter
Physics 217 4
Mathematics 212 5 5
Chemistry 102 or 102a 3 3
Modern Language 3 3

Spring Quarter
Physics 218 4
Mathematics 215 3 3
Chemistry 103 or 103a 3 3
Modern Language 3 3

Fourth Year

Fall Quarter
Physics 213 5
Chemistry 206 5
Physics 216 2
Bible 232 3

Winter Quarter
Physics 220 5
Chemistry 207 5
Physics 217 2
Ethics 203 3

Spring Quarter
Physics 214 5
Chemistry 208 5
Physics 218 2
Elective 3

Secretarial

Professional achievement in secretarial work is more and more dependent upon a combination of academic education plus training in vocational
and technical subjects, such as typewriting, shorthand, accounting, business law, business writing, and office practice. The program herein offered has a good balance between the academic and the vocational requirements of business.

The purpose of this curriculum which leads to the bachelor’s degree, is to prepare men and women for the duties of private secretaries, office assistants, and other types of business positions. The program is arranged so that the student who finds it impossible to remain in continuous residence for four years, may withdraw at the close of the second or third year with sufficient training to meet the requirements of the ordinary business position, although it is obvious that the entire course should be completed to receive the maximum benefits. Graduates with the bachelor’s degree are usually given preference by employers.

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<td>Shorthand 110</td>
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<td>Business Organization 104</td>
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<td>Shorthand 111</td>
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<td>Psychology 101</td>
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<td>Stenography 115</td>
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<td><strong>Winter Quarter</strong></td>
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<td>Physical Education 105</td>
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<td>Office Practice 129</td>
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<td><strong>Spring Quarter</strong></td>
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<td>Physical Education 106</td>
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<td>Office Practice 130</td>
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<td>Business Writing 118</td>
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<tr>
<td><strong>Fall Quarter</strong></td>
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<td>Bible 232</td>
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<tr>
<td>Labor Problems 204</td>
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<td>Natural Science</td>
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<tr>
<td>Mathematics 100 or 101</td>
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<tr>
<td><strong>Winter Quarter</strong></td>
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<td>Bible 210</td>
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<td>Money and Banking 207</td>
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<tr>
<td>Natural Science</td>
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<tr>
<td>Mathematics of Finance 121</td>
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<tr>
<td>Electives</td>
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<tr>
<td><strong>Spring Quarter</strong></td>
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<td>Office Machines 210</td>
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<tr>
<td>Money and Banking 208</td>
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<td>Natural Science</td>
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<td>Mathematics of Finance 121</td>
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<td><strong>Fall Quarter</strong></td>
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<tr>
<td>Business Law 221</td>
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<td>Marketing 241</td>
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<td>Elective</td>
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<td><strong>Winter Quarter</strong></td>
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<td>Business Law 222</td>
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<td>Advertising 245</td>
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<td>Elective</td>
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<td><strong>Spring Quarter</strong></td>
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<td>Business Law 223</td>
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<tr>
<td>Salesmanship 246</td>
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<td>Elective</td>
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* Students who do not maintain a C average in the year’s work in English Composition must repeat the courses.
SECRETARIAL

This curriculum is designed for those who do not wish to complete the four year course for a degree in the College of Liberal Arts. The courses are so planned that the student can prepare for positions in business in the secretarial, clerical, and sales field. Upon satisfactory completion of this two-year course a certificate of secretarial science is granted.

**First Year**

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
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<td>English 102</td>
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<tr>
<td>Typing 101</td>
<td>Typing 102</td>
<td>Typing 103</td>
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<td>Stenography 110</td>
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<td>Stenography 112</td>
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<td>Business Organization 103</td>
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<td>Business Organization 105</td>
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<td>Public Speaking 101</td>
<td>Public Speaking 102</td>
<td>Political Science 106</td>
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<td>Political Science 104</td>
<td>Political Science 105</td>
<td>Office Machines</td>
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**Second Year**

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<td>Physical Education 104</td>
<td>Physical Education 105</td>
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<td>Shorthand Dictation</td>
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<td>Salesmanship 246</td>
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THEOLOGY

The suggested outline of studies which follows will be found to meet the pre-professional requirements of practically all theological schools. Many seminaries urge that the student have a thorough knowledge of the social sciences and include in their suggestions at least one natural science. This outline includes a broad and liberal course which will enable the student to appreciate his graduate studies to the fullest extent. The courses given plus the emphasis throughout upon Christian idealism will bring about a realization of the most important aim of this department which is to produce for the world well equipped, spiritually-minded young men who will minister to the needs of their communities in every possible way.

**First Year**

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<th>FALL QUARTER</th>
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<td>Physical Education 101</td>
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<td>Physical Education 104</td>
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<tr>
<td>Philosophy 201</td>
<td>Logic 202</td>
<td>Ethics 203</td>
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<td>Sociology 151</td>
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<td>Bible 232</td>
<td>Bible 210</td>
<td>Church History 201</td>
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<tr>
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<td>English 215</td>
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<td>Principles of Teaching 208</td>
<td>The Family 212</td>
<td>History of Education 238</td>
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<td>Criminology 211</td>
<td>Electives</td>
<td>History of Religion 210</td>
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<td>Social Control 213</td>
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DIVISIONS AND DEPARTMENTS
OF INSTRUCTION

Courses in the "100" group (Lower Division Courses) are primarily for freshmen and sophomores. Courses in the "200" group (Upper Division Courses) are primarily for juniors and seniors. Certain "100" courses in modern foreign language, chemistry, and mathematics may be counted as Upper Division Courses if taken during the junior or senior year. Courses may be withdrawn or other changes made at the discretion of the Board of Trustees and Faculty.

Division I. Language, Literature and Arts
Louis Rowell Herrick, Chairman

Students who expect to complete a major in any of the departments of this division other than English are advised to take a minimum of 18 hours in English or Speech, or both; to elect courses in history and philosophy; and to continue the study of foreign language as a preparation for advanced study.

ENGLISH LANGUAGE, LITERATURE
AND SPEECH
Professors Freeman and Deming, Mrs. Holmes,
Mrs. Noble, Miss Elliott

The work is arranged with three chief ends in view: first, to provide the student with such skill in writing and speaking that, regardless of what field of business or what profession he may later enter, he may express his ideas clearly and adequately; second, to give the student a knowledge of two great literatures, the English and the American, so that he may, after he has finished his college work, read with some critical ability, understanding, and appreciation of literature as an art and as an interpretation of life; and third, to offer advanced work to those who are planning to specialize in the field of English or American Literature as teachers.

Students majoring in English are advised to minor in French, Latin, or German, and to elect a year of English history. A minor may be completed in history.

A major in English consists of a minimum of 36 hours in addition to English 101, 102 and 102a. The department recommends the following sequence of courses: English 103, 104, and 105; English (American Lit-
erature) 121, 122, and 122a; English 210, 211, 212; English 214, 215, and 216; or English 217, 219, and 219a. English 201, 205, and 225 are required of all students majoring in English.

A minor in English consists of a minimum of 24 hours in addition to English 101 and 102. The department recommends that the student complete English 102a; English 103, 104, and 105; English (American Literature) 121, 122, and 122a, and English 201.

ENGLISH COMPOSITION

101. Composition Fall, Winter, 3 Hours
102. Composition Winter, 3 Hours
102a. Composition Spring, 3 Hours

These three courses constitute a year of work for freshmen. A thorough drill in the mechanics of written English, exposition and argumentation; description and narration. Considerable attention is given to the study of the structure of the short story. Daily themes. Students who show a high degree of proficiency in English, may elect English 122a or English 105 in the place of Composition 102a. Six sections. M. W. F., 1, 2, 4, 5, 6, and 7.

118. Business Communication Spring, 3 Hours
A study of written communication in business, emphasizing the use of effective English and the technique of forms of communication. Sales, credit, collection, adjustment letters, business reports. Prerequisite: English 101, 102, 102a. M. W. F., 7.

201. College Grammar Winter, 3 Hours

205. Expository Writing Fall, 2 Hours
225. Expository Writing Winter, 2 Hours

A study of the various types of the essay and the writing of short themes together with longer fortnightly themes. Considerable attention is given to the familiar essay. In order to receive credit both courses must be completed. Open to all juniors and seniors. Required of all students who major in English. T. Th., 3.

ENGLISH LITERATURE

103. From the Beginning of the Eighteenth Century Fall, 3 Hours
104. From the Eighteenth Century to the Victorian Era Winter, 3 Hours
105. From the Victorian Era to 1920 Spring, 3 Hours

With the exception of the novel these three courses constitute a survey of English Literature in which the works of the chief English writers are stressed. Attention is given to the political, social, and intellectual background of the various periods. Some emphasis is placed upon the types of poetry and prose and upon versification. M. W. F., 3.
106. **Eighteenth Century Prose**

Fall, 3 Hours

107. **Eighteenth Century Prose**

Winter, 3 Hours

In these courses a study is made of the prose of Defoe, Swift, Steele, Addison, Fielding, Burke, Gibbon, Johnson, Goldsmith, and Boswell. An attempt is made to interpret eighteenth century thought through the chief prose writers of the period. M. W. F., 2.

108. **Eighteenth Century Poetry**

Spring, 3 Hours

The poetry of the Restoration and the Eighteenth Century. A study of the poetry of Dryden, Pope, Collins, Burns, Cowper, Blake, and Crabbe, together with some of the minor writers of the period. English 106 and 107 together with this course constitute a year's work in sophomore English. M. W. F., 2.

112. **Modern British and American Poets**

Spring, 3 Hours

Open to sophomores. M. W. F., 6.

121. **American Poetry**

Fall, 3 Hours

A study chiefly of the nine great American poets of the nineteenth century, but attention is given to work of the recent and contemporary poets. An attempt is made to show what America has done in poetry, the greatest of the fine arts. M. W. F., 3.

122. **American Prose**

Winter, 3 Hours

Some attention is paid to the prose of the Colonial period, but the following writers are stressed: Edwards, Franklin, Irving, Hawthorne, Poe, Thoreau, Lowell, Emerson, Holmes, Calhoun, Webster, and Lincoln. M. W. F., 3.

122a. **American Prose**

Spring, 3 Hours

A continuation of English 122 with special emphasis on the development of the American novel. English 121, 122, and 122a constitute a year's work of sophomore rank. Prerequisite: English 101 and 102. M. W. F., 3.

210. **Shakespeare: Histories**

Fall, 3 Hours

211. **Shakespeare: Tragedies**

Winter, 3 Hours

212. **Shakespeare: Comedies**

Spring, 3 Hours

In these courses Shakespeare is studied as a dramatist, poet, interpreter of his age and of human life. Attention is given to the technique of the Elizabethan drama. Open to juniors and seniors. M. W. F., 4.

214. **Nineteenth Century Poetry**

Fall, 3 Hours


215. **Nineteenth Century Poetry**

Winter, 3 Hours

A study of the chief poems of Tennyson and Browning. Attention is given to the patriotic and social attitude of Tennyson and to Browning’s ability to portray and to interpret character. M. W. F., 7.

216. **Nineteenth Century Poetry**

Spring, 3 Hours


217. **Nineteenth Century Essayists**

Fall, 3 Hours

In English 217 the following essayists are studied: Coleridge, Lamb, Hazlitt, Landor, DeQuincey, Macaulay, Carlyle, Newman, Ruskin, Huxley, Pater, and Stevenson. M. W. F., 2.

219. **The Nineteenth Century English Novel**

Winter, 3 Hours

219a. **The Nineteenth Century English Novel**  
*Spring, 3 Hours*

Courses 219 and 219a continue a survey of the English novel of the century. The masterpieces of the major novelists from Scott to Conrad are read and studied. Attention is given to the technique of the novel. Courses 217, 219, and 219a constitute a year's work for juniors and seniors.

231. **English Problems**  
*Fall, Winter, Spring, 1-3 Hours*

Minor investigation for qualified seniors who are majoring in English. Consult head of department. Total credit may not exceed three hours.

**Speech**

Students who expect to major in speech will do well to observe the following sequence: First year, courses 101, 102, 103; 107. Second year, courses 110, 111, 112, 113. Third year, courses 220, 221, 222, 230. Fourth year, 231, 232.

101. **Public Speaking**  
*Fall, 3 Hours*

The technical side of speech is emphasized; the fundamentals of voice production, action and platform deportment; speech construction, principles and practice; selection and arrangement of material; and the development of self-confidence in thinking while before an audience. M. W. F., 1, 4, and 7.

102. **Public Speaking**  
*Winter, 3 Hours*


103. **Literary Interpretation**  
*Spring, 3 Hours*

The analysis of literary selections for thought and emotion content; practice in the use of the voice to interpret mental and emotional states. The work of the course deepens the student's own literary appreciation and helps him to awaken others to a fuller sense of the beautiful in literature. M. W. F., 1 and 7.

107. **Speech Improvement**  
*Winter, 3 Hours*

A course dealing with the use of the speaking voice in social and professional situations; the development of pleasing and well modulated voice, distinct and acceptable pronunciation; and elimination of speech defects. Selection of poetry and prose, brief talks, reports and other speech activities are practiced. No prerequisite. M. W. F., 3.

110. **Argumentation**  
*Fall, 3 Hours*

111. **Argumentation**  
*Winter, 3 Hours*

Two courses given to a detailed study of the principles of argumentation; practice in brief-making and debating. No credit is given unless both courses are completed. Prerequisite: English 101, 102. M. W. F., 6.

112. **Dramatic Technic**  
*Fall, 2 Hours*


113. **Acting**  
*Winter, 2 Hours*

A continuation of course 112, giving opportunity to put into practice in groups the principles studied. The students take part in scenes and short plays. T. Th., 7.
150. Private Speech 1 Hour
Individual demands for which classroom work is inadequate are met, including platform work and speech correction. Open to all students by arrangement.

220. Interpretative Reading Fall, 3 Hours
The art of effective oral reading. Analysis of forms of literature; technical and psychic exercises and problems; modulations of voice; speech correction; and presentation of the intellectual and emotional content of the printed page. Each student is assigned literary selections for vocal interpretation. This course is especially recommended for those who expect to teach English. M. W. F., 2.

221. Play Directing Winter, 3 Hours
A laboratory course dealing with the problems of the actor in amateur plays. Practice in organizing players and presenting plays. It is expected that those who desire membership in the Northern Players will register for this course. Prerequisite: Speech 103, 220. M. W. Th., 7.

222. Extempore Speaking Spring, 2 Hours
This course for advanced students aims at developing facility in organization and presentation of various kinds of speech material, for example: Expository, after-dinner, pulpit, campaign, and commemorative. Platform etiquette and practice in speech are stressed. Prerequisite: Speech 101, 102. T. Th., 6.

230. Intercollegiate Debate Fall, 2-3 Hours
Members of the debate teams are selected by competitive tryouts to which any student in good standing is eligible. Intensive study, investigation, and practice on intercollegiate questions. The work is carefully supervised and credited according to the quality and quantity of work done.

231. Shakespearean Reading Winter, 3 Hours
Plays are critically studied from standpoint of platform presentation; relation of personation and impersonation; plot, incident, and character analysis. Expressional reading of selected speeches and scenes from the platform. Prerequisite: Speech 103. M. W. F., 2.

232. High School Dramatics Spring, 2 Hours
A careful study of the problems of amateur dramatics relating to the technique of acting and stagecraft as they affect the teacher who is called upon to direct high school plays. The director’s responsibilities and opportunities in the public school and community. Prerequisite: Some training in the speech arts or by consent of the instructor. T. Th., 7.

250. Private Speech 1/2 Hour
Limited to speech majors.

FOREIGN LANGUAGE AND LITERATURE
Professor Herrick and Mr. Stager

The modern languages are designed to meet both cultural and practical needs. The advanced courses afford opportunity for students to major or minor in French. If a student expects to do graduate work or to specialize in science, he should have a working knowledge of French or German, or both.

For a major in French the requirements are three years of college French in addition to Elementary French or the equivalent and two quarters of French Phonetics, a total of 38 hours. Students majoring in this depart-
ment should elect courses in English literature, history, Latin, and Speech. For a minor in French, the requirement is two years in addition to Elementary French, a total of 24 hours.

Elementary and intermediate courses in French, German, and Spanish may be counted as Upper Division Courses if taken during the junior or senior year. Some additional work is required.

**FRENCH**

101. ELEMENTARY FRENCH  
102. ELEMENTARY FRENCH  
103. ELEMENTARY FRENCH  
   The elements of pronunciation and phonetics, essentials of grammar and easy reading. Conversation suited to the needs and abilities of the class. M. W. F., 2.

104a. INTERMEDIATE FRENCH  
105a. INTERMEDIATE FRENCH  
106a. INTERMEDIATE FRENCH  
   Further elements of grammar, practice in phonetics, pronunciation, dictation, conversation based on lantern slides and occasional illustrated lectures on salient points of French history, architecture, art, and civilization. Prerequisite: French 101-103. T. 6, 8; F., 6.

*223. MODERN LITERATURE  
*224. MODERN LITERATURE  
*225. MODERN LITERATURE  
   The study of typical and selected texts, illustrative of modern literary movements, such as Romanticism, Realism, Naturalism, accompanied by illustrated lectures on French life, customs, architecture, art, etc., intended as a background for assigned readings. Prerequisite: French 104-106a. In alternate years with French 231a-233a.

206a. GENERAL SURVEY OF FRENCH LITERATURE  
207a. GENERAL SURVEY OF FRENCH LITERATURE  
208a. GENERAL SURVEY OF FRENCH LITERATURE  
   A study of the main literary currents and characteristic monuments of the great periods of French literature. Lectures, class discussions, assigned readings. Prerequisite: French 104a-106a. Given in alternate years with French 223-225.

*225a. FRENCH PHONETICS  
*226a. FRENCH PHONETICS  

231a. ADVANCED GRAMMAR REVIEW, PROSE COMPOSITION, CONVERSATION  
   Fall, 3 Hours

* Not given in 1947-1948
232a. Advanced Grammar Review, Prose Composition, Conversation  
Winter, 3 Hours

233a. Advanced Grammar Review, Prose Composition, Conversation  
Spring, 3 Hours
A thorough review of grammar, phonetics, prose composition, together with conversation and lectures based on lantern slides illustrative of French life, customs, architecture, etc. Given in alternate years with French 223-225. M. W. F., Noon.

SPANISH

101. Elementary Spanish  
Fall, 3 Hours

102. Elementary Spanish  
Winter, 3 Hours

103. Elementary Spanish  
Spring, 3 Hours
The elements of pronunciation and phonetics, essentials of grammar and easy reading, with conversation adapted to the needs of the class. M. W. F., 5.

104a. Intermediate Spanish  
Fall, 3 Hours

105a. Intermediate Spanish  
Winter, 3 Hours

106a. Intermediate French  
Spring, 3 Hours
Further elements of grammar and grammar review practice in phonetics, pronunciation, dictation, conversation, based on abilities of the class and occasional lantern slide lectures on Spain. Prerequisite: Spanish 101-103. M. W., F., 3.

121. Commercial Spanish  
Fall, 3 Hours

122. Commercial Spanish  
Winter, 3 Hours

123. Commercial Spanish  
Spring, 3 Hours
The study of commercial texts with practice in pronunciation, reading, and writing business Spanish. Given on sufficient demand instead of Spanish 104a, 105a and 106a.

GERMAN

101. Elementary German  
Fall, 3 Hours

102. Elementary German  
Winter, 3 Hours

103. Elementary German  
Spring, 3 Hours
Essentials of pronunciation, grammar and composition, verb drill, and easy graded texts for reading. M. W. F., 1.

104a. Intermediate German  
Fall, 3 Hours

105a. Intermediate German  
Winter, 3 Hours

106a. Intermediate German  
Spring, 3 Hours
Grammar, pronunciation, and conversation with the reading of graded texts. Prerequisite: German 101-103, or the equivalent. T. W. Th., 2.

117. Scientific German  
Fall, 3 Hours

118. Scientific German  
Winter, 3 Hours
119. **Scientific German**  
*Spring, 3 Hours*  
The reading of scientific texts with particular emphasis on individual needs. Required of premedical students. Given on sufficient demand instead of 104a, 105a and 106a. Prerequisite: German 101-103. M, Noon; T. Th., 1.

**Latin**

The Latin program is designed to introduce the student to the masterpieces of Latin Literature in the Republican period, the Augustan age, and the Empire. The types of literature represented include comedy, the essay, history, lyric poetry, letters and the epigram. In addition, two courses add information on the social, historical, and literary background, and one course is devoted to the study of the linguistic relationship between Latin and English.

Students majoring in Latin are advised to minor in English. Other foreign languages are suggested as electives.

Students entering with two units of high school Latin take courses 107, 108, 109, and 210 through 218. Students entering with four units of high school Latin take 210 through 218. Courses 210, 211, 212, alternate with 213, 214, 215 and 216, 217, 218, one sequence being given each year.

107. **Cicero and Vergil**  
*Fall, 3 Hours*

108. **Cicero and Vergil**  
*Winter, 3 Hours*

109. **Cicero and Vergil**  
*Spring, 3 Hours*

Selections from Cicero's Orations and Vergil's Aeneid and a review of the principles of Latin grammar. Prerequisite: Two years of high school Latin. M. W. F., 3.

*210. Livy*  
Book XXI of Livy's History and supplementary reading on the period of the Punic wars. Prerequisite: Latin 109 or four years of high school Latin. M. W. F., 4.

*211. Horace*  

*212. Latin-English Etymology*  
Lectures and readings on elementary linguists and the relation of Latin to English. Open to students majoring in English. M. W. F., 4.

213. **Roman Private Life**  
*Fall, 3 Hours*  
Lectures and readings on Roman life and on the topography of Rome. Prerequisite: Latin 109 or four years of high school Latin. Open to social science students for history credit. M. W. F., 4.

214. **Pliny**  
*Winter, 3 Hours*  
An introduction to the prose of the Silver Age and to the life of the empire of the first century. M. W. F., 4.

* Not given in 1947-1948
215. **MARTIAL**  
An introduction to the poetry of the Silver Age and to the life of the empire of the first century. M. W. F., 4.  
*216. **PLAUTUS AND TERENCE**  
Reading of one play of each author. Prerequisite: Latin 109 or four years of high school Latin. M. W. F., 4.  
*217. **ROMAN HISTORY AND LITERATURE**  
A rapid survey of Roman history from legendary times to the fall of the empire and an outline of history of Latin literature. M. W. F., 4.  
*218. **CICERO’S ESSAYS**  
De Senectute and De Amicitia. M. W. F., 4.  
219. **THE TEACHING OF LATIN**  
An analysis of objectives, content, and methods in the teaching of Latin and a study of textbooks and other teaching materials.

**GREEK**

101. **GREEK**  
Fall, 3 Hours
102. **GREEK**  
Winter, 3 Hours
103. **GREEK**  
Spring, 3 Hours

Beginning Greek courses including work in New Testament. M. W. F. To be arranged.

**MUSIC**

**PROFESSORS ROIDER AND LAMALE AND INSTRUCTOR**

**AIMS**

Instruction is provided for those who desire to become teachers and supervisors of music, and an opportunity is afforded to those who wish to devote themselves to the literature of music, and those who desire a background in choosing music as a profession. Because training in music should be based upon a broad and thorough general education, the curricula have been so constructed as to secure a symmetrical balance between musical and academic subjects.

**PRESSER HALL**

Presser Hall, the home of the Department of Music, built in memory of Theodore Presser, an early faculty member, cost nearly $145,000. It contains the Willis Auditorium, with a seating capacity of 500, a large stage, studios, practice rooms, and classrooms.

**SPECIAL STUDENTS**

A student who desires to register for work in applied music or theo-

*Not given in 1947-1948*
retical subjects without having graduation in view, may register as a special student. There are no requirements for registration as a special student other than evidence of talent and the ability to pursue a selected course with success.

**Junior Department**

The applied Music Department is open to children of public school age without any restriction other than an interest and a willingness to study. In all teaching the ideal of musical feeling is sought together with beautiful tone and accurate intonation. Group playing is stressed as much as possible and students of orchestral instruments are encouraged to enter the local high school orchestra.

**Bachelor of Arts with Major in Music**

A major of 45 hours of music or a minor of 25 hours of music, is accepted toward the degree of Bachelor of Arts. The major consists of the following courses of Theoretical and Applied Music: Sight Singing and Ear Training, History of Music, Harmony, Musical Form, Applied Music and Ensemble participation. Theoretical Music should constitute about 30 hours of this major.

The courses listed above are not inflexible and may be changed to meet the requirements of the individual by consulting the Dean and the Head of the Department.

**Public School Music Course**

This course is approved by the State Department of Education for the training of teachers and supervisors of Public School Music. The degree of Bachelor of Science in Education is granted to students completing the Public School Music curriculum, and such persons are granted the state four-year provisional certificate.

See curriculum under Division of Teacher Training.

**Theoretical Music**

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>101</td>
<td>Elementary Sight Singing and Ear Training</td>
<td>Fall</td>
<td>2</td>
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<tr>
<td>102</td>
<td>Elementary Sight Singing and Ear Training,</td>
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<td>106</td>
<td>Advanced Sight Singing and Ear Training</td>
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A series of sequential courses. T. Th., 3.

A series of sequential courses for sophomores. T. Th., 4.
111. **Harmony**  
**Fall, 3 Hours**

112. **Harmony**  
**Winter, 3 Hours**

113. **Harmony**  
**Spring, 3 Hours**

First quarter includes study of scales, intervals, triads, use of triad in simple part-writing from melodies and basses. Second and third quarters continue with the primary and secondary seventh chords, modulation, easy suspensions and passing tones. Original work includes the hymn tune and simple two and three part song-forms. Prerequisite: The ability to play four part music at sight. An important part of this course is the Keyboard Harmony which comes once a week during the Winter and Spring quarters. M. W. F., 4.

114. **Advanced Harmony**  
**Fall, 3 Hours**


115. **Harmonic Analysis**  
**Winter, 3 Hours**


211. **Musical Form**  
**Spring, 3 Hours**

From the motive and song-forms to the sonata and contrapuntal forms. Materials to be analyzed. Mendelssohn, Songs without Words; Mozart, Sonatas; Beethoven, Sonatas; Bach, Preludes and Fugues. Prerequisite: Harmonic Analysis 115. M. W. F., 6.

140. **Conducting**  
**Fall, 2 Hours**

141. **Conducting**  
**Winter, 2 Hours**

142. **Conducting**  
**Spring, 2 Hours**

Courses in principles of conducting, concluding with conducting full band and orchestra scores. Prerequisite: Harmony 113. T. Th., 2.

153. **History and Appreciation**  
**Fall, 3 Hours**

154. **History and Appreciation**  
**Winter, 3 Hours**

155. **History and Appreciation**  
**Spring, 3 Hours**

These courses deal with the origin and development of music, studied from an appreciative basis. M. W. F., 3.

202. **Primary Music Methods and Observation**  
**Fall, 4 Hours**

Two observations each week are required. Prerequisite: Advanced Sight Singing 106; Harmony 114. M. W. F., 5.

203a. **Intermediate Music Methods and Observation**  
**Spring, 4 Hours**

Materials and methods in vocal music. Four observations each week are required. Prerequisite: Primary Music Methods 202. M. W. F., 5.

203b. **Intermediate Music Methods and Observation**  
**Spring, 4 Hours**

Organization and management of bands and orchestras in the elementary school and the high school. Instrumental classes, substitution of parts, repertoire, public performances. Observation of bands, orchestras, and instrumental classes in the public school. M. W. F., 4.

204. **Junior and Senior High School Methods and Observation**  
**Winter, 4 Hours**

The adolescent voice and its care. Two observations each week are required. Prerequisite: Intermediate Music Methods 203. M. W. F., 7.
*207. **Class Voice**  
Fall, 2 Hours

*208. **Class Voice**  
Winter, 2 Hours

*209. **Class Voice**  
Spring, 2 Hours

A course designed for prospective teachers of vocal music in the public school. T. Th., 6.

213. **Supervised Teaching in the Primary Grades**, Winter, 3 Hours  
Prerequisite: Primary Music Methods 202.

214. **Supervised Teaching in the Intermediate Grades**  
Fall, 3 Hours

(a) Practice teaching in vocal music. Prerequisite: Intermediate Music Methods 203a.  
(b) Practice teaching in instrumental music. Prerequisite: Intermediate Music Methods 203b.

215. **Supervised Teaching in Junior and Senior High School**  
Spring, 3 Hours

(a) Practice teaching in vocal music. Prerequisite: Methods and Observation 204.  
(b) Practice teaching in instrumental music. Prerequisite: Intermediate Music Methods 203b.

*217. **Instrumental Class**  
Fall, 2 Hours

*218. **Instrumental Class**  
Winter, 2 Hours

*219. **Instrumental Class**  
Spring, 2 Hours

Courses designed for prospective teachers of instrumental music in the public school.

220. **Band and Orchestral Instruments**  
Fall, 2 Hours

221. **Band and Orchestral Instruments**  
Winter, 2 Hours

222. **Band and Orchestral Instruments**  
Spring, 2 Hours

Courses designed to give the prospective teacher of vocal music a general knowledge of the playing technique of the instruments in the string choir, woodwind choir, and the brass choir. T. Th., 5.

251. **School Orchestration**  
Winter, 3 Hours  
Prerequisites: Harmony 115; Advanced Sight Singing 106. M. W. F., 6.

252. **Advanced Orchestration**  
Spring, 3 Hours  
A continuation of 251, with scoring for full band and orchestra. Prerequisite: School orchestration 251. M. W. F., 6.

**APPLIED MUSIC**

**Voice**

The courses in voice aim to establish correct physical and mental poise, the principles of breathing and breath control, proper diction and articulation using the best of various methods from the old Italian classic of the bel canto period to the modern scientific theories. Repertoire, interpretation, and presentation are stressed, and opportunities are afforded each student to present vocal works before an audience through recital and

* Not given in 1947-48
student assembly. Students are encouraged to study songs in the modern languages, Italian, French and German.

Piano

The special needs of each individual student guide the approach to instruction in piano playing. Technical studies and selections are carefully chosen to develop the student’s ability to recreate the desire of the composer. As music is a means of intellectual culture and artistic enjoyment, the works of the masters are stressed through all grades. Recitals and public appearances give the student an opportunity to gain poise and develop self-assurance.

Organ

No student will be accepted unless he has reached a grade in piano playing sufficient to warrant organ instruction. The course of study provides for thorough training in preparation for church and concert work including the best organ literature and the principles of modulation, accompaniment, and improvisation. The course has been arranged to give a knowledge of the French school of organ music through the study of the works of the best composers in this particular school.

Violin, Viola, and Violoncello

After a thorough preparation in the fundamentals, instruction in the stringed instruments includes not only the systematic development of adequate technical facility but also definite emphasis on such phases as intonation, tone production, and style, all necessary to artistic performance and interpretation. The course of study is flexible and depends upon the individual needs and qualifications of the student. Offered upon sufficient demand.

Woodwind and Brass Instruments

Special effort is made to develop the playing ability of the student through the stressing of good tone, phrasing, technique, and ensemble. Suitable material for the advancement of the student is used for the building of technique and repertoire, selected according to the needs of the individual. Participation in band, orchestra, and ensemble is encouraged. Offered upon sufficient demand.

Chorus-Choir

Students of any college of Ohio Northern University interested in singing in the Chorus-Choir have the opportunity to try out for this or-
ganization. Music of all types, accompanied and a cappella, are used throughout the year. Sacred and secular music for concerts at the University and outside the community are a part of the program including the presentation of "The Messiah" in December and a large choral work in the spring.

**Band**

All University students who play band instruments are given the opportunity to play in the University Band. A wide variety of material is used throughout the year. The band is used to augment athletic games, football and basketball, and appear in concert as well as appearing at many school and community functions.

**Orchestra**

An orchestra made up of students of any college of the University is used to augment choral productions and present concerts. Participation at school and local functions is encouraged. Participation in ensembles is expected of orchestral students.

**Division II. Natural Sciences**

**RAYMOND A. DOBBINS, Chairman**

A student who chooses one of the departments in this division for his major is advised to schedule two laboratory sciences during the freshman and sophomore years, and in most cases a course in mathematics, and to acquire a reading knowledge of a foreign language if advanced work is anticipated. Majors in Industrial Arts should follow curriculum under Division of Teacher Training.

**Biology**

**Professors Huber and Dobbins**

The aims of this department are to enable the student to understand better the life world in which he lives, to prepare for the teaching field, to obtain a biological foundation for the study of medicine, dentistry, and nursing, and to qualify for admission to graduate work.

A student who plans to complete a major in biology is advised to include a course in chemistry, one in physics, an introduction to statistical methods, courses in psychology and sociology, and have a reading knowl-
ledge of German and French if he intends to enter upon graduate work. A course in philosophy is strongly recommended.

101. Zoology
102. Zoology
103. Zoology
These courses are designed for students who desire a general acquaintance with some of the biological laws and theories evidenced by the animal world. A general survey of the animal kingdom based on classification, morphology, physiology, and ecology. Special attention is given to the problems of the organism, with emphasis on development, reproduction, genetics, and evolution. Daily, 3, 5 and 6.

107. Botany
108. Botany
109. Botany
These courses are presented largely as cultural courses with emphasis on careful observation and logical conclusion. The processes, structure, classification, environmental relations, distribution, genetics, and evolution of plants are considered. Daily, 4 and 7.

110. Local Flora
A systematic study of the vascular plants, both native and introduced. A field course supplemented by greenhouse and herbarium studies. S., 1, 2, 3, 4; T. Th., 1.

206. Comparative Vertebrate Anatomy
A comparative study of the anatomy of fishes and amphibians. Careful dissections are made of the different systems and the relationships noted. Recitations three hours; laboratory, six hours. M. W. F., 2; T. Th., 2, 3, 4.

210. Foods and Nutrition
A course dealing with the selection and preparation of foods, the general principles of nutrition, and metabolism. Two recitations, one three-hour laboratory. Instructor by arrangement.

211. Human Physiology
An elementary course dealing with digestion, respiration, excretion, metabolism, foods, endocrines, muscles, reproduction, and the nervous system. Four recitations, one laboratory period. Daily, 1.

213. Mammalian Anatomy and Physiology
A thorough dissection of a typical mammal with a careful correlation of structure and function. The course is designed especially for physical education and pre-medical students. Prerequisite: Comparative Vertebrate Anatomy. M. W. F., 2; T. Th., 2, 3, 4.

218. Vertebrate Embryology
This course is fundamentally important to students who expect to teach zoology, study medicine, or from a cultural standpoint who wish to know something of the origin and development of the human body. Laboratory work is confined largely to the chick, with occasional reference to the pig. Prerequisite: Zoology 101, 102, 103. M. W. F., 2; T. Th., 2, 3, 4.

219. Histology and Technique
Methods of collecting, killing, preserving and preparing materials for demonstration and laboratory purposes are considered. A detailed microscopic study of various plants or animal tissues is made. Lecture and class work one hour, laboratory, six to eight hours. Time schedule to be arranged. Open to seniors majoring in biology.

222. Plant Physiology
This course consists of a critical study of some of the physiological processes of plants. Prerequisite: Botany 107, 108, 109. M. W., 3, 4; F., 3.
230. **HEREDITY**  
Spring, 3 Hours  
A study of the principles of inheritance in plants and animals. The inheritance of human traits is given considerable emphasis, and the problems of eugenics are considered. Laboratory exercises with plant and animal materials are included. Prerequisite: Zoology 101, 102, 103 or Botany 107, 108, 109. M. W. F., 1.

*235. **EVOLUTION**  
Spring, 3 Hours  
A course dealing with the development of the organic world, and an examination of the evidences of evolution and of the theories attempting to explain the method of evolution. Prerequisite: A year course in biology. T. Th. F., 1.

Note: Courses in Bacteriology are listed in College of Pharmacy.

240. **BIOLOGICAL PROBLEMS**  
1-3 Hours  
Minor investigations for qualified seniors who are taking a major or minor in biology. By arrangement any quarter. Fee depends on nature of work done. May be repeated.

**CHEMISTRY**  
**Professor Smith and Mr. Accountius**

The aim is to lay the foundation for an understanding of this basic science. The four fundamental courses, general chemistry, quantitative analysis, organic chemistry, and physical chemistry studied in the order mentioned, together with allied courses in physical and social sciences, prepare the student for industrial work. In addition, by completing required courses in teacher training, preparation may be made for the teaching of chemistry in secondary schools. In anticipation of continued work in chemistry, courses in mathematics through calculus and a reading knowledge of German and French are required.

101A. **INTRODUCTORY CHEMISTRY**  
Fall, 5 Hours

102A. **INTRODUCTORY CHEMISTRY**  
Winter, 5 Hours

103A. **INTRODUCTORY QUALITATIVE ANALYSIS**  
Spring, 5 Hours  
A series of courses designed for students who do not present chemistry for entrance credit. Courses 101A and 102A consist of a careful study of the fundamental laws of chemistry and of the properties of common non-metallic elements and their compounds; course 103A is an introductory study in qualitative analysis of acids and metals, based upon the principles of ionization, mass action and chemical equilibrium. A brief study is made of the common metallic elements and their compounds. Lecture and quiz, M. W. F., 3; laboratory, T. Th., 2, 3, 4 or 6, 7, 8.

101. **GENERAL CHEMISTRY**  
Summer, Fall, 5 Hours

102. **GENERAL CHEMISTRY**  
Summer, Winter, 5 Hours

103. **QUALITATIVE ANALYSIS**  
Spring, 5 Hours  
Basic courses in general chemistry. Prerequisite: One unit of high school chemistry. Lecture and quiz, M. W. F., 2; laboratory, T. Th., 2, 3, 4 or 6, 7, 8.

* Not given in 1947-1948
104. Quantitative Analysis                      Fall, 5 Hours
105. Quantitative Analysis                      Winter, 5 Hours
106. Quantitative Analysis                      Spring, 5 Hours
These courses deal with the theory and practice of gravimetric and volumetric analysis. The use of the fundamental principles of modern theoretical chemistry, as well as the attainment of the ability to make quantitative separations and determinations, is emphasized. Prerequisite: Chemistry 103a or 103. Lecture, T. Th., 5; laboratory, M. W. F., 5, 6, 7.

206. Organic Chemistry                         Fall, 5 Hours
207. Organic Chemistry                         Winter, 5 Hours
208. Organic Chemistry                         Spring, 5 Hours
These courses consist of a fundamental study of the compounds of carbon. Careful attention is given to group structure, group relationship, group properties, isomerism and nomenclature. Prerequisite: Chemistry 103a or 103. Lecture and quiz, M. W. Th. F., 5; laboratory, T. or Th., 5, 6, 7.

209. Industrial Inorganic Chemistry           Fall, 5 Hours
210. Industrial Organic Chemistry              Winter, 5 Hours
211. Industrial Organic Chemistry              Spring, 5 Hours
These courses in industrial chemistry (formerly 209, 210a, 210b) are a descriptive survey of industrial chemical processes and their products. In addition to regular classwork, visits at appropriate periods are made to industrial plants in neighboring cities. Prerequisite: Quantitative Analysis and Organic Chemistry. Daily, 1.

212. Inorganic Chemistry                       Fall, 5 Hours
213. Inorganic Chemistry                       Winter, 5 Hours
214. Inorganic Chemistry                       Spring, 5 Hours
The primary purpose of these courses (formerly 211a, 211b, and 212) is to teach inorganic chemistry. Laboratory work in Courses 212 and 213 deals with advanced qualitative analysis on a semi-micro basis, and is more comprehensive than 103 in both theoretical consideration and number of elements studied. Course 214 consists of a preparation of pure inorganic compounds, and a study of the theoretical principles involved. In all these courses the Periodic Law is used as the basis for the classification of the elements and their compounds. Prerequisite: Chemistry 103 or 103a. Lecture, T, Th., 5; laboratory, M. W. F., 5, 6, 7.

215. Physical Chemistry                        Fall, 3 Hours
216. Physical Chemistry                        Winter, 3 Hours
217. Physical Chemistry                        Spring, 3 Hours
A series of courses designed to develop a comprehensive conception of chemical change and the structure of matter. Laboratory work designed for these courses is done in the department of Physics, courses 216, 217, 218. Prerequisite: Quantitative Analysis, Organic Chemistry, General Physics, and Mathematics 109. Lecture and quiz, M. W. F., 4.

231. Chemistry Problems                       Credit to be Arranged
Minor investigation in chemistry, may be elected any quarter in the senior year by any student who is qualified to carry it. Work may be started in the fall quarter and continued through the year. Credit will be valuated at the close of the course. This is an honor course. Consult head of department.
222. **Elementary Electricity**  
**Spring, 3 Hours**  
Study of the fundamental principles of electricity. The application of these principles in the laboratory construction of transformers, electric motors, and other similar projects. Readings and reports. T. Th. F., 7 and 8.

225. **Photography**  
**Winter, 2 Hours**  
Study of cameras, photographic materials, development and theory of development, printing processes and many other topics. One lecture and one two-hour laboratory period each week. Time to be arranged.

231. **Materials of Industry**  
**Fall, 2 Hours**  
A study of industrial materials, their characteristics, sources and uses. T. Th., 2.

235. **Crafts and Hobbies**  
**Fall, 3 Hours**  
Work in copper, brass, wood, plastics, leather, and other materials, in the construction of suitable projects. Readings and reports. M. W. F., 1 and 2.

240. **Ceramics**  
**Winter, 3 Hours**  
An introduction to pottery making, study of materials, forming and decorating processes, glazing and firing. Laboratory practice in building pottery by hand, slip casting and cement work. M. W. F., 7 and 8.

242. **Student Teaching in Industrial Arts Education**  
**Fall, Winter, Spring, 6 Hours**  
Prerequisite: Industrial Arts 250.

250. **Industrial Arts Organization and Methods**  
**Spring, 5 Hours**  
This is the methods course for industrial arts majors and minors. It covers the methods of instruction, the selection and evaluation of instructional materials and the planning and equipping of the modern school laboratory. Daily, 4.

260. **Special Problems in Industrial Arts**  
**1 to 4 Hours**  
Time to be arranged. Offered any quarter.

333. **Machine Shop**  
**Spring, 3 Hours**  
Course offered in College of Engineering. M. W. F., 6, 7, 8.

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**MATHEMATICS**

*Mr. Roberson, Mr. Walters, Mr. Kline, Mr. Madigan*

The aim is to offer courses primarily as part of a liberal education, as requirements for engineering students and for prospective graduate students in mathematics and physics. In all courses the theory developed is followed by application to exercises and practical problems when possible.

Students majoring in mathematics are advised to follow the sequence of courses. Courses in calculus may be counted as upper division courses. Those planning to do graduate work in this field should complete courses 212, 215, and 216. Physics is recommended as a minor. A reading knowledge of German or French is advised.

92. **Solid Geometry**  
**Spring, 3 Hours**  
This course is the equivalent of high school solid geometry. Not counted toward a major. Prerequisite: One unit of algebra and one unit of geometry. Daily, 1.
100. INTERMEDIATE ALGEBRA
Fall, 5 Hours
This course covers the material of advanced algebra in high school and college algebra through the solution of systems of linear equations by the method of determinants. Prerequisite: One unit of algebra and one unit of geometry. Daily, 3.

101. COLLEGE ALGEBRA
Fall, 5 Hours
This course covers much of the material of the traditional course in algebra with emphasis upon number theory, quadratic forms, functions and their graphs, and the theory of determinants as applied to the solution of simple sets of equations. Prerequisite: Mathematics 100 or plane geometry and one and one-half units of high school algebra. Daily, 4 or 5.

101A. FRESHMAN MATHEMATICS
Fall, 3 Hours

101B. FRESHMAN MATHEMATICS
Winter, 3 Hours

101C. FRESHMAN MATHEMATICS
Spring, 3 Hours
A survey course built around high school mathematics, acquainting the student with the meaning, practical uses and the possibilities in the general field of mathematics. Course continues through the year and may be elected as an alternative for science. Prerequisite: One unit of algebra. M. W. F., 8.

103. TRIGONOMETRY
Winter, 5 Hours
The fundamental principles of the subject are developed and applied to trigonometric reductions and to the solutions of triangles. Numerous exercises in the field of geometry, physics, and mechanics are studied. Prerequisite: Plane geometry and one and one-half units of high school algebra. Daily, 4 or 5.

105. ANALYTICAL GEOMETRY
Spring, 5 Hours
The purpose of this course is to acquaint the student with analytical methods of investigation and to make him more skillful in the use of algebraic processes as applied to geometric loci. Special attention is given to the equations of the right line, circle, conic sections, and the higher plane curves. Prerequisite: Mathematics 103 or 103b. Daily, 4 or 5.

107. CALCULUS: DIFFERENTIAL
Fall, 5 Hours
The fundamental theorems for the differentiation of algebraic, trigonometric, logarithmic, and exponential functions are taken up with numerous applications to problems in geometry, mechanics and physics. Prerequisite: Mathematics 105. Daily, 4 or 5.

108. CALCULUS: DIFFERENTIAL AND INTEGRAL
Winter, 5 Hours
This course is a continuation of Mathematics 107, but giving a more extended use of differentiation to analytical functions of two or more variables with an introduction to the indefinite integral. Prerequisite: Mathematics 107. Daily, 4 or 5.

109. CALCULUS: INTEGRAL
Winter, Spring, 5 Hours
This is a continuation of Mathematics 108, but giving a more detailed account of methods of integration by the aid of substitution, parts and reduction formulae. Integration as a summation and the definite integral with its application to problems in surfaces, volumes, moments of inertia, center of gravity and fluid pressure is studied. Required for majors. Prerequisite: Mathematics 108. Daily, 4 or 5.

111A. PRACTICAL ASTRONOMY
Spring, 3 Hours
This course covers spherical trigonometry with numerous applications to the fields of geodesy and astronomy. Prerequisite: College algebra and plane geometry. M. W. F., 6.

121. MATHEMATICS OF Finance
Spring, 5 Hours
This course is designed to meet the needs of students in economics and commerce. It treats of both simple and compound interest, and true and bank discount. Applications are made to annuities, amortization, sinking funds, depreciation, valuation of bonds, building and loan associations and insurance. Prerequisite: College algebra 100 or 101, Plane trigonometry 103. Daily, 4.
206. Analytical Geometry of Space Any Quarter, 3 Hours
This offering is planned to give the student a good working knowledge of coordinate geometry in three dimensional space. Equations of the first and second degree of two and three unknowns are stressed. A seminar course. Time to be arranged.

212. Differential Equations Winter, 5 Hours
This is a study of the more common types of ordinary differential equations, especially those of the first and second orders, with emphasis on geometrical interpretations and applications to geometry, elementary mechanics and physics. Required for majors. Prerequisite: Mathematics 109. Daily, 6.

213. College Geometry Winter, 5 Hours
This course is designed to meet the needs of those who expect to teach mathematics in the public schools. General methods leading to the solution and construction of geometric problems are studied. Open to juniors and seniors. Daily, by arrangement.

214. Statistics Spring, 5 Hours
This is an elementary survey of statistical methods designed to meet the needs of students in education, economics, sociology, and science. It includes sampling, tabulation, graphs, averages, probability and error, dispersion, trends, cycles, correlation, variance, and index numbers. Prerequisite: Mathematics 100 or 101. Daily, 6.

*215. Vector Analysis Fall, 3 Hours
This is an account of the methods of elementary vector analysis in two and three dimensional space, followed by simple applications to geometry and physics. Prerequisite: Mathematics 109. M. W. F., 6.

216. Calculus: Advanced Integral Fall, 4 Hours
This course takes up plane areas by means of double integration; volume by triple integration; moment of inertia; center of gravity; fluid pressure; centroid of solids and hyperbolic functions. Required for majors. Prerequisite: Mathematics 108, 109. M. T. W. Th., 6.

PHYSICS
Professor Berger and Assistants

The primary aim of this department is to train the student to reason from fundamental experimental facts in solving the problems of physics. In conjunction with this, the department aims to give a training sufficiently broad to enable the student to appreciate the physics of popular scientific articles, to teach physics in the public schools, to apply physics in engineering, medicine and other sciences, and to pursue graduate work to the best advantage.

The physics major must include courses 213, 214, and 220. For those contemplating graduate work in physics 45 hours each of physics and mathematics should be completed. An introductory course in philosophy and a reading knowledge of German are strongly recommended. A year of general chemistry should be completed. A year of economics is recommended.

104. **General Physics: Mechanics of Solids and Fluids**
   **Fall, 5 Hours**

106. **General Physics: Electricity and Magnetism**
   **Winter, 5 Hours**

105. **General Physics: Sound, Heat and Light**
   **Spring, 5 Hours**

For engineers and science majors. Prerequisite: High school physics and analytics. T. W. Th. F., 2. One two-hour laboratory period on M. T. W. Th., 5, 6, or 7, 8.

109. **General Physics: Mechanics of Solids and Fluids**
   **Fall, 3 Hours**

110. **General Physics: Sound, Heat and Light**
    **Winter, 3 Hours**

111. **General Physics: Electricity and Magnetism**
    **Spring, 3 Hours**

Open to freshmen. Prerequisites: One year each of high school algebra and plane geometry. M. W. F., 4.

109a. **General Physics**
   2 Hours

110a. **General Physics**
   2 Hours

111a. **General Physics**
   2 Hours

Laboratory to precede or accompany 109, 110, 111. Any quarter. Two 2-hour laboratory periods on T. or Th., at 5, 6, or 7, 8.

213. **Mechanics**
   **Fall, 5 Hours**

A course in mechanics problems in statics. Prerequisite: Physics 106 and calculus. Daily, 3.

214. **Mathematics of Physics**
   **Spring, 5 Hours**

A course dealing with the application of mathematics to physics and related sciences. Prerequisite: Physics 105 and calculus. Daily, 7.

216. **Advanced Laboratory: Mechanics**
   **1-6 Hours**

217. **Advanced Laboratory: Light, Heat, Sound**
   **1-6 Hours**

218. **Advanced Laboratory: Electricity**
   **1-6 Hours**

Credit is given in courses 216, 217, and 218 according to the amount of work done. A quiz is given on assigned readings for each experiment. Not more than six hours of credit may be earned in any one of the three quarters. Offered every quarter. Prerequisite: Physics 106 or 111 and Mathematics 109. Two three-hour laboratory periods and one class period each week for three hours credit.

220. **Modern Physics**
   **Winter, 3 Hours**

A lecture and quiz course involving fundamental questions on the nature of things, such as atomic structure, electron theory, quantum theory, and the theory of relativity. Prerequisite: General chemistry and general physics. M. W. F., 1.

221. **Advanced Light**
   **Winter, 5 Hours**

An honor course in physical optics and spectroscopy. There are no regular class recitations. Reports are made by the student in individual conferences. Only superior students may register for this course. Consent of the head of the department is necessary. Prerequisite: Physics 105 and Calculus 216.

222. **Advanced Electricity**
   **Winter, 5 Hours**

An honor course in the mathematical treatment of electricity and magnetism. Requirements are the same as for course 221.

Only one honor course open each year.
Division III. Social Sciences

Wilfred E. Binkley, Chairman

A student who plans to make his major elections from a department in this group should complete at least two courses in the social sciences during the freshman and sophomore years. Proficiency in English is indispensable. A course in statistical methods will prove useful, and a reading knowledge of French, German, or Spanish is essential if graduate work is anticipated.

Majors in Physical Education will follow curriculum as outlined under Division of Teacher Training.

ECONOMICS and BUSINESS ADMINISTRATION

Professor Waldron, Miss Lincoln, Mr. Stone

The aim is to acquaint the student with a general rather than a specialized training in economics and business administration. Emphasis is placed upon a comprehensive view of business as a whole rather than upon some one of the specialized functions in economics and business administration.

Secretarial courses are designed to serve those persons who plan to become secretaries and assistants to executives or who are looking toward administrative positions in keeping with their training and experience. Students preparing to teach business subjects will find these courses suited to their needs. Under the Division of Teacher Training, a four-year course in business education is outlined.

On preceding pages of this catalog will be found detailed curricula in Business Administration and Law, Economics and Business Administration, and Secretarial.

ECONOMICS

121. Principles of Economics
    Fall, 3 Hours
122. Principles of Economics
    Winter, 3 Hours
123. Principles of Economics
    Spring, 3 Hours
A survey course dealing with principles of law of supply and demand as applied to factors of production in our present-day society, where monopolistic competition is highly important due to patented machinery and trade-marked articles. Not open to freshmen. M, W, F, 2 and 5.

125. Economics for Engineers
    Winter, 5 Hours
A course in general economic theory and problems presented from the point of view of the engineer. Not open to freshmen. Daily, 2.
204. Labor Problems Fall, 3 Hours
Economic analysis of past and present-day problems of labor; history and development of labor unions in United States; parts played by business management and government, representing the public interest. Prerequisite: Economics 121, 122, 123, M. W. F., 6.

207. Money and Banking Winter, 3 Hours
208. Money and Banking Spring, 3 Hours
Historical development of our monetary system through various business cycles and political changes in federal government to the present day; social and economic effects of our monetary system and banking practices under our Federal Reserve System and state banking regulations. Prerequisite: Economics 121, 122, 123, M. W. F., 6.

*214. Corporation Finance (Business Finance) Fall, 3 Hours
*215. Corporation Finance (Business Finance) Winter, 3 Hours
Principles of modern corporation finance; problems covering financial organization and income policies of corporations are presented. Prerequisite: Economics 123; Business Organization and Management 103, 104, and 105; and Principles of Accounting 133. T. Th. F., 6.

*217. Public Finance Spring, 3 Hours
Principles involving fiscal problems of federal, state and intra-state governmental bodies. Special emphasis is placed on budgeting, revenues, public debts, governmental expenditures, fiscal policies, shifting incidence, and need for more efficiency in operation of all governmental bodies. Prerequisites: Economics 123, and Corporation Finance 215. T. Th. F., 6.

220. Economic Problems Credit Arranged
Minor investigations in economics and business open to qualified students. Courses may be elected any quarter with consent of head of department.

BUSINESS ADMINISTRATION

103. Business Organization Fall, 2 Hours
104. Business Organization Winter, 2 Hours
105. Business Organization Spring, 2 Hours
These courses introduce the student to the principles of organization, management, and control of business, by presenting types of problems with which the business executive must deal: an overall view of the field. Open to freshmen. T. Th., 4.

121. Mathematics of Finance Spring, 5 Hours
This course acquaints the student with the mathematical tools of business. It treats simple and compound interest; discounts; installment buying; depreciation; price of bonds; amortization; sinking fund and types of annuities. Required of Business Administration and Secretarial students. Prerequisite: College Algebra 100 or 101; and Trigonometry 103. Daily, 4.

131. Principles of Accounting Fall, 3 Hours
132. Principles of Accounting Winter, 3 Hours
133. Principles of Accounting Spring, 3 Hours
Fundamental process of accounting applied to service, trading, and manufacturing concerns; preparation of working papers and financial statements from properly arranged accounts in general ledger; practice sets for representative business concerns completed. Required for majors. Daily, 3.

* Not given in 1947-1948
221. BUSINESS LAW  
222. BUSINESS LAW  
223. BUSINESS LAW  
Legal divisions and terminology; contracts, agency, negotiable instruments; suretyship, bailments, insurance, transportation, partnerships and corporations; property deeds, mortgages, bankruptcy, tenancy, torts and crimes. Prerequisite: Junior standing. M. W. F., 7.

231. INTERMEDIATE ACCOUNTING  
Principles of intermediate accounting as applied to study of the balance sheet, and profit and loss accounts for partnerships and corporations. Prerequisite: Mathematics of Finance 121; and Accounting 133. Daily, 1, and T. Th., 2.

*232. ADVANCED ACCOUNTING  
Principles of advanced accounting as applied to special phases of accounting; partnerships, consignments, venture accounts, installment sales, insurance, correcting entries, statement of affairs and bankruptcy, home office and branch, consolidated statements, foreign exchange, estates and trusts, budgets, public accounts, bank accounting, and stock brokerage. Prerequisite: Accounting 231. Daily, 1.

*233. COST ACCOUNTING  
Basic principles of cost accounting; departmentalization and account classification, unit and standard costs, continuous process and specific job order costs, material and direct labor costs, and manufacturing expenses and methods of distributing such expenses. Prerequisite: Accounting 232. Daily, 1.

*235. FEDERAL INCOME TAX  
Study of federal income tax regulations to determine tax liability under current laws; preparation of individual, partnership, corporation, estate and trust tax returns. Prerequisite: Accounting 231. Daily, 1.

236. AUDITING  
Principles and accepted procedures of auditing accounting records and statements, with special emphasis given to making of working papers and the writing of audit papers for making a complete audit. Prerequisite: Accounting 231. Daily. By arrangement.

241. MARKETING  
Principles of marketing, including an analysis of marketing functions, distribution channels, consumers' buying motives and demand, cost and pricing policies, and recent trends in marketing of consumers' goods and industrial goods. Required for Business Administration majors. Prerequisite: Economics 121, 122, and 123. T. Th. F., 4.

242. COOPERATIVE MARKETING  
Special phase of general marketing covering producing side of marketing; history, special legislation by Congress, and growth of farm cooperatives; cases describing in detail marketing of farm products through cooperatives. Prerequisite: Marketing 241. T. Th. F., 4.

*245. ADVERTISING  
Principles and procedures in advertising used primarily to create a buying attitude by ultimate consumer; advertising stages and media are considered for both national advertiser as well as for local retailer. Prerequisite: Marketing 241; and Psychology 101. T. Th. F., 4.

*246. SALESMANSHIP  
Principles of selling, particularly as applied by salesmen in actual selling field, but has a general and practical application — selling oneself in every branch of human endeavor. Prerequisite: Marketing 241; and Psychology 101. T. Th. F., 4.

* Not given in 1947-48
Retailing
Underlying principles of successful retailing as applied in operation of retail stores—department stores, chain stores, and independent or locally owned stores. Prerequisite: Marketing 241; and Psychology 101. T. Th. F., 4.

Insurance
General non-technical course in insurance; considers generally accepted kinds of insurance, such as life, property, marine, casualty, and surety bonds; designed to develop a sound personal understanding of insurance as well as to furnish a working background for prospective insurance salesmen. Prerequisite: Economics 121, 122, and 123. T. Th. F., 4.

Typewriting
A series of courses designed to give the student a practical working knowledge of the typewriter combined with a study of the business letter, office forms, compositions, legal documents, and stencils. A high degree of accuracy and speed is required. M. T. W. Th., 5.

Typewriting
An advanced course in typewriting intended to develop high speed in production, with special emphasis on office problems. Prerequisite: Typewriting 103. M. T. W. Th., 6.

Shorthand
Basic courses in Gregg Shorthand, by the functional method, designed to give the student a thorough foundation in principles, and practice in reading and writing at a satisfactory rate. Daily, 3.

Shorthand Dictation and Transcription
Advanced courses with emphasis on speed and accuracy in production. High degree of efficiency is required. Prerequisite: Shorthand 112. Daily, 2.

Office Practice
Theory and actual practice in office work both in class, laboratory and in campus offices. By arrangement.

Office Machines
Study and use of such office machines as dictaphone, mimeograph, calculator, etc. By arrangement.

Methods in Teaching Business Subjects

Supervised Teaching in Business Education
(Given Each Quarter) 6 Hours

Problems in Business Education
Open to properly qualified seniors. By arrangement.

Prerequisite: Methods 230. Required for business teachers.

*Not given in 1947-48
HEALTH AND PHYSICAL EDUCATION
PROFESSOR LAMB, MR. MURPHY AND MRS. OMLER

Some form of physical activity is required of all students during their first two years in the University. The nature and amount of work to be taken depends upon physical condition as revealed by a careful examination and by efficiency tests given at the beginning of the school year. A varied program of elective and required activities is provided, which aims to secure and maintain the highest degree of individual and social efficiency both during and after college life.

The elective courses are both theoretical and practical. A strong intramural sports program is designed to provide some form of activity for nearly every student on the campus; while for those who wish to specialize in the physical education field, a four-year professional curriculum is offered, leading to the degree of Bachelor of Science in Education and to a special state four-year provisional certificate.

REQUIRED COURSES

Physical education two hours a week. One credit hour each quarter for the first six quarters.

First Year. This work is given both out-of-doors and in the gymnasium. It is systematically graded and arranged to fit the needs and interest of the individual. Corrective work, for those who need it, and the fundamentals of natural gymnastics and games are stressed.

Second Year. A continuation of the first year program, with greater emphasis on play activities.

ELECTIVE COURSES

Intramural Sports. Ample athletic fields and a splendid new gymnasium afford exceptional facilities for an intramural program that is sufficiently broad and varied to offer some form of activity for practically all University students. In their proper seasons, the following sports are offered: football, basketball, baseball, speedball, handball, playground ball, volleyball, tennis, wrestling, boxing, and track.

Intercollegiate Athletics. Ohio Northern University is a member of the Ohio Intercollegiate Athletic Conference and has gained an enviable reputation for the quality and character of her teams. In football, basketball, baseball, and track the University has consistently been rated among the stronger members of the conference.
FOUR-YEAR PROFESSIONAL CURRICULUM

The curriculum for the four-year professional course for teachers and supervisors of physical education will be found under the Division of Teacher Training.

101. PHYSICAL EDUCATION

102. PHYSICAL EDUCATION

FALL, 1 HOUR

103. PHYSICAL EDUCATION

WINTER, 1 HOUR

Men—Gymnasium and outdoor classes in season, natural gymnastics, informal play. Six sections. M. W., 1, 2, 3, 4, 5, or 6.

Women—A course in natural gymnastics including games and sports in season, dancing and tumbling. Four sections. T. Th., 1, 2, 3, 4.

SPRING, 1 HOUR

104. PHYSICAL EDUCATION

FALL, 1 HOUR

105. PHYSICAL EDUCATION

WINTER, 1 HOUR

106. PHYSICAL EDUCATION

SPRING, 1 HOUR

Men—Continuation of course 103 with team games and apparatus added. Six sections. M. W., 1, 2, 3, 4, 5, or 6.

Women—A continuation of course 103. Four sections. T. Th., 1, 2, 4, 6.

101a. PHYSICAL EDUCATION FOR MAJORS

102a. PHYSICAL EDUCATION FOR MAJORS

FALL, 1 HOUR

103a. PHYSICAL EDUCATION FOR MAJORS

WINTER, 1 HOUR

104a. PHYSICAL EDUCATION FOR MAJORS

SPRING, 1 HOUR

105a. PHYSICAL EDUCATION FOR MAJORS

FALL, 1 HOUR

106a. PHYSICAL EDUCATION FOR MAJORS

WINTER, 1 HOUR

Spring, 1 Hour

Courses 101a to 106a inclusive are required of all students majoring or minor ing in physical education in place of courses 101 to 106. These courses consist of natural activities in season, including games, stunts, tumbling, clog dancing, folk and characteristic dancing, natural dancing, pageantry for women and combat activities for men. These courses apply toward physical education major. Men, T. Th., 5. Women by arrangement.

115. PERSONAL AND GENERAL HYGIENE, FALL, WINTER, SPRING, 3 HOURS

A course designed to cover the various phases of personal hygiene and health from the individual aspect, with emphasis on preventive measures. Each quarter. T. Th. F., 2.

117. HEALTH EDUCATION

FALL, 3 HOURS

A course for the special teacher and supervisor of physical education, dealing with the sanitation of school buildings, surveys of various school systems, teachers' health, and other health problems arising in a school system. M. W. F., 3.

151. HEALTH EDUCATION

SPRING, 3 HOURS

This course deals with the health program of the public schools, and the teaching of habits, attitudes and knowledge conducive to good health. M. W. F., 3.

152. HEALTH EDUCATION

FALL, 3 HOURS

The relation of hygiene to home and community life, including a study of sewage disposal, refuse disposal, transmission and control of diseases. M. W. F., 3.
155. **Body Mechanics**  
Spring, 3 Hours  
This course deals with the general body mechanics of the human organism, furnishing the student an opportunity to study and analyze the activities of the physical education program in their relation to coordination and the proper body mechanics. Prerequisite: Comparative Anatomy 206 and Mammalian Anatomy and Physiology 213. T. Th. F., 4.

156. **Theory and Practice of Plays and Games**  
Spring, 3 Hours  
The need, purpose, and function of play in education are studied. Activities adaptable to various age levels of the elementary and secondary schools are studied. Two hours of theory and two hours of laboratory per week. M. W. F., 5.

158. **First Aid and Athletic Training**  
Spring, 2 Hours  
Lectures, discussion and practice in the giving of first aid in cases of emergency. Methods of scientific training and conditioning of athletic teams. The American Red Cross First Aid Certificate may be obtained by students who pass a satisfactory examination. T. Th., 3.

201. **Principles and Methods of Physical Education, Fall, 4 Hours**

202. **Principles and Methods of Physical Education, Winter, 4 Hours**

203. **Methods of Physical Education**  
Spring, 4 Hours  
Lectures, demonstrations, and practice. An examination of the principles underlying modern practices in physical education, from the standpoint of general education. The methods used in the natural program of physical education, such as the teaching of fundamental skills of tumbling and stunts, basketball, indoor baseball, speedball, volleyball, handball. Class, M. W., 4; practice T. Th., 5.

221a. **Methods in Coaching Football**  
Fall, 3 Hours  
A course covering in detail, equipment, fundamentals of the game, kicking, passing, handling the ball, tackling, blocking, etc.; individual position play; discussion of various types of offensive and defensive formations now in use, and the merits of each; strategy and generalship. T. Th. F., 4.

221b. **Methods in Coaching for Women**  
Fall, 3 Hours  
This course is to prepare major and minor students in physical education to coach athletics in secondary schools. The course covers presentation of technique, basic principles, team play and methods for instruction of hockey, soccer, and speedball. M. W. F., 6.

222. **Methods in Coaching Basketball**  
Winter, 3 Hours  
Men—Special emphasis is given to the fundamentals, passing, shooting, dribbling, feinting, and pivoting; to the various styles of offense and defense used by leading coaches; to equipment; to the conditioning of a team; and to the handling of a team in games. Lectures, reports, demonstration and practice. T. Th. F., 4.  

223. **Methods in Coaching Baseball and Track**  
Spring, 3 Hours  
This course covers pitching, catching, batting, fielding, baserunning, individual position and team play in baseball. It takes up the best methods and forms for all of the events in track and field. Lectures, reports, demonstration, and practice. T. Th. F., 4.  
Women—Baseball, tennis, track, and field sports. M. W. F., 7.

252. **Normal Diagnosis**  
Winter, 2 Hours  
This course includes recording of personal and family history, methods of making general health examinations, including special methods of examining the eyes, ears, nose, throat, spine, feet; weighing and measuring, and a limited study of corrective exercises for various postural defects. M., 5-6.
254. Organization and Administration of Physical Education—Men and Women  
FALL, 2 Hours
A course dealing with the objectives, principles, and methods of organization and administration of physical education in elementary and secondary schools and colleges. It includes management of athletic sports, games, and contests, and intramural athletics. T. Th., 4.

260. History of Physical Education  
SPRING, 2 Hours
This course traces the evolution and development of physical education through ancient and modern times. It demonstrates the close relationship existing between certain elements in civilization and the status of physical education in that civilization. T. Th., 1.

265. Problems in Physical Education  
SPRING, 1 to 3 Hours
This course deals with specific problems in physical and health education and is open to properly qualified students. Time to be arranged.

263. Student Teaching—Physical Education  
FALL, WINTER, SPRING, 6 Hours
Students taking the four year course for the training of physical education supervisors and teachers are required to prepare a syllabus of the work covered, write lesson plans, hold conferences with the professor in charge and teach in the University, junior and senior high schools and elementary schools.

271. Advanced Coaching Practice  
FALL, 1 Hour

272. Advanced Coaching Practice  
WINTER, 1 Hour

273. Advanced Coaching Practice  
SPRING, 1 Hour
These courses are designed to give students who have had courses 221, 222 and 223 an opportunity to do actual coaching under supervision, in all sports in season. Hours arranged.

HISTORY AND POLITICAL SCIENCE

Professor Binkley and Dr. Hilliard

The history courses stress the evolution of human institutions with a view to developing an understanding of our present civilization. Students majoring in history must take courses in both American and European history and electives in the allied social sciences, particularly political science, sociology, psychology and economics. It is the policy of the department to recommend no graduate for the teaching of history who has not taken nine hours in American government.

The most appropriate sequence of courses for a major in history would be History of Western Europe 110, 111, 112; History of the United States 113, 114, 115; History of England 104, 105, 106; Recent American History 216, 217, 218; or Constitutional History of the United States 224, 225, 226; and Recent European History 251, 252, 253 or Bourbon France 235, 236, 237. In addition to the 36 hours required for the major in history the student must complete nine hours in American government.

The courses in political science are designed to prepare the student for the intelligent performance of the functions of citizenship, for entrance into
public service, for the study of law, and for graduate study in this field. Those majoring in political science are advised also to pursue courses in sociology, psychology, history and economics.

**HISTORY**

104. **English History to 1603**
   **Fall, 3 Hours**
105. **English History: 1603-1815**
   **Winter, 3 Hours**
106. **English History: 1815 to the Present Time**
   **Spring, 3 Hours**
   A general introductory study of the English people in their political, social and institutional development, followed by a survey of the growth of the British Empire and evolution of the British Commonwealth of Nations. M. W. F., 3 and 6.
110. **History of Western Europe A. D. 1 to 1517**
   **Fall, 3 Hours**
111. **History of Western Europe 1517 to 1815**
   **Fall, 3 Hours**
112. **History of Western Europe 1815 to Present Time**
   **Spring, 3 Hours**
   An introductory survey of European history. The Mediaeval background, the Renaissance, the rise of international rivalry, the World War and its aftermath. Open to freshmen. M. W. F., 7.
113. **History of the United States to 1829**
   **Fall, 3 Hours**
114. **History of the United States: 1829 to 1876**
   **Winter, 3 Hours**
115. **History of the United States: 1876 to the Present Time**
   **Spring, 3 Hours**
   A study of the political, social and economic development of the United States from the colonial period to the present time. Not open to freshmen. T. Th. F., 4.
216. **Recent American History**
   **Fall, 2 Hours**
217. **Recent American History**
   **Winter, 2 Hours**
218. **Recent American History**
   **Spring, 2 Hours**
   An investigation and intensive study of some of the major movements of the United States since the Civil War. Prerequisite: History 113, 114, 115. T. Th., 5.
224. **Constitutional History of the United States**
   **Fall, 2 Hours**
225. **Constitutional History of the United States**
   **Winter, 2 Hours**
226. **Constitutional History of the United States**
   **Spring, 2 Hours**
   A survey of the constitutional development of the United States from the colonial period to the present time. Prerequisite: Political Science 101, 102, 103, and History 113, 114, 115. T. Th., 5.
235. **Bourbon France and the Revolutionary Era**
   **Fall, 2 Hours**
236. **Bourbon France and the Revolutionary Era**
   **Winter, 2 Hours**
237. **Bourbon France and the Revolutionary Era**
   **Spring, 2 Hours**
   Three courses presenting in detail the history of Europe during the period of the absolute monarchy, the ancient regime, the revolutionary era and Napoleon. Prerequisite: History 110, 111, 112. T. Th., 6.
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<tr>
<td>*251.</td>
<td>Recent European History</td>
<td>Fall, 2</td>
<td>Hours</td>
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<tr>
<td>*252.</td>
<td>Recent European History</td>
<td>Winter, 2</td>
<td>Hours</td>
</tr>
<tr>
<td>*253.</td>
<td>Recent European History</td>
<td>Spring, 2</td>
<td>Hours</td>
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<tr>
<td>212.</td>
<td>History of Ohio</td>
<td>Fall, 3</td>
<td>Hours</td>
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<tr>
<td>254.</td>
<td>History Problems</td>
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<tr>
<td>100.</td>
<td>Development of Human Freedom</td>
<td>Winter, 2</td>
<td>Hours</td>
</tr>
<tr>
<td>101.</td>
<td>American Government</td>
<td>Fall, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>102.</td>
<td>American Government</td>
<td>Winter, 3</td>
<td>Hours</td>
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<tr>
<td>103.</td>
<td>American Government</td>
<td>Spring, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>104.</td>
<td>Introduction to Political Science</td>
<td>Fall, 2</td>
<td>Hours</td>
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<tr>
<td>105.</td>
<td>Introduction to Political Science</td>
<td>Winter, 2</td>
<td>Hours</td>
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<tr>
<td>106.</td>
<td>Introduction to Political Science</td>
<td>Spring, 2</td>
<td>Hours</td>
</tr>
<tr>
<td>204.</td>
<td>Municipal Government</td>
<td>Winter, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>208.</td>
<td>Comparative Government</td>
<td>Fall, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>209.</td>
<td>Comparative Government</td>
<td>Winter, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>210.</td>
<td>American Political Parties</td>
<td>Fall, 3</td>
<td>Hours</td>
</tr>
<tr>
<td>211.</td>
<td>Political Science Problems</td>
<td></td>
<td>3 Hours</td>
</tr>
</tbody>
</table>

*Not given in 1947-48*
PSYCHOLOGY AND SOCIOLOGY

PROFESSORS VANNORSDALL AND TNSLER

The purpose of this department is to acquaint the student with a study of the traits of human nature and the problems of social organization in order that he may become a better citizen, a more efficient teacher, and be better able to further his interests and studies either in private life or in institutions of learning.

An interdepartmental major of 47 hours is offered as follows: Psychology 101, 102, 104, 135, 210; Sociology 151, 152, 153, 211, 212, 213; and Philosophy 201, 202, 203, 207.

A minor in psychology consists of 24 hours in psychology. A minor in sociology consists of 18 hours in sociology and psychology 101 and 104.

PSYCHOLOGY

FALL, 5 Hours

101. General Psychology
A general survey of psychological facts and principles stressing human experience and behavior. Prerequisite: One year of Biology. Daily, Noon.

WINTER, 3 Hours

102. Applied Psychology
The application of psychological principles to problems of modern life; clinical practice; personal work; home life; education; industry; business law and criminology; medicine; social reform. Prerequisite: Psychology 101. M. W. F., Noon.

SPRING, 3 Hours

104. Social Psychology
A study of social behavior and social adjustment. The effect of the social environment upon the development of personality. The relation of social and psychological laws to problems of the community. Prerequisite: Psychology 101. M. W. F., Noon.

WINTER, 3 Hours

135. Educational Psychology
(See Division of Teacher Training.)

SPRING, 3 Hours

136. Educational Psychology
(See Division of Teacher Training.)

SPRING, 3 Hours

*210. Abnormal Psychology
This course is an introduction to the study of the problems of mental health and is designed to meet the needs of students of education and pre-professional courses. Prerequisite: Psychology 101. M. W. F., Noon.

SPRING, 3 Hours

212. Psychological Problems
Minor investigation. Open only to qualified seniors. By arrangement.

1-4 Hours

* Not given in 1947-48
SOCIOLOGY

151. General Sociology
152. General Sociology
A study of the phenomena of human relations, including the nature and import of sociology, social evolution, socialization, social ideals, and social control. Serious consideration is given to the question, "How does human life in general become what it is, what values does it actually contain, and under what conditions can those values be more completely realized?" Not open to freshmen. Courses 151 and 152 are prerequisite to other courses in sociology. M. W. F., 2.

153. Social Pathology
Spring, 3 Hours
Social pathology as it concerns our own society including the study of such problems as child labor, poverty, crime, the family, public health, etc. Prerequisite: Sociology 151 and 152. M. W. F., 2.

211. Criminology
Fall, 3 Hours
A consideration of the problems of crimes and criminals. Special attention is given to the factors conducive to the making of criminals, together with a suggested program of treatment and prevention. The work also includes some study of the history of punishment and penal institutions. Prerequisite: Sociology 151 and 152. M. W. F., 2.

212. The Family
Winter, 3 Hours
A discussion course on the history of marriage and the family. A detailed study of the normal family, the conditions which interfere with the normal functioning of the family, and the means of social control. Prerequisite: Sociology 151 and 152 or consent of the instructor. M. W. F., 2.

213. Social Organization and Social Control
Spring, 3 Hours
Social organization as it influences and is influenced by social control. Propaganda, minority groups, co-operation, competition, and social legislation. M. W. F., 2.

RELIGION AND PHILOSOPHY
Professors Potter and Tinsler

These studies are intended to prepare students for graduate work, and enable them to understand more effectively the spiritual needs of their home communities and also aid them to reconstruct, constantly, their own concepts in the light of the high religious and ethical idealism of the prophets and Jesus.

An interdepartmental major of 47 hours in this field is offered with the following courses: Biblical Literature and Religion 151, 152, 153; 201, 210, 232; Philosophy 201, 202, 203, 207; Psychology 101, 102; and Sociology 151, 152, 211, or 213. A minor in this department consists of 24 hours in Biblical Literature, Religion and Philosophy.

BIBLICAL LITERATURE AND RELIGION

151. Old Testament
Fall, 3 Hours
The cultural history of the Hebrew people from early times to the division of the Hebrew Kingdom. M. W. F., 1.
152. **Old Testament**  
Winter, 3 Hours  
From the Division of the Hebrew Kingdom to the Death of Herod the Great with special emphasis on the teachings of the prophets. M. W. F., 1.

153. **The Life and Teaching of Jesus**  
Spring, 3 Hours  
A study of the life and teaching of Jesus together with some consideration of the social and political setting into which He was born and its relation to the success of His message. M. W. F., 1.

201. **Church History**  
Spring, 3 Hours  
A consideration of the significant individuals, movements and events in the Christian Church from the Apostolic Age to the present day and their relation to the course of general history. M. W. F., 5.

210. **Comparative Religion**  
Winter, 3 Hours  
The fundamental religious beliefs, customs and institutions of the major living religions. A knowledge of the general aim and nature of religion is sought. M. W. F., 5.

232. **The Life and Teaching of Paul**  
Fall, 3 Hours  

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**Philosophy**

201. **Introduction to Philosophy**  
Fall, 3 Hours  
A survey of the workings of the mind. A study is made of the characteristics of effective thinking and the various methods involved. Resourcefulness in thinking, classifications of knowledge, and how conclusions are reached are studied. A desirable course to parallel a study of the sciences. M. W. F., 6.

202. **Logic**  
Winter, 3 Hours  
A constructive study of mental processes, the laws of learning, mental fallacies, methods of proof, the proper organization and presentation of ideas, and the limitation and expression of knowledge. M. W. F., 6.

203. **Ethics**  
Spring, 3 Hours  
A study of morality and the problems of conduct, their historical development and social and political relationships. Especially designed for teachers and students in professional schools. M. W. F., 6.

207. **Modern Philosophic Problems**  
Spring, 3 Hours  
A study of current philosophies together with the analysis of the problem of constructing a satisfactory personal philosophy. By arrangement.

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**Division IV. Teacher Training**

**Harry H. Vannorsdall**  
Chairman and Director of Teacher Training

The Teacher Training work at Ohio Northern University, organized within the College of Liberal Arts, is designed to aid its students in forming clear conceptions of the dignity and importance of the teacher's work; to trace in the history of education the origin and development of modern principles of teaching; to present in theory and practice approved and ration-
al methods of instruction; to create and maintain high professional standards among present and prospective teachers; and to offer such courses for the professional training of teachers as will broaden their horizon and advance them to higher planes of usefulness, ability and service.

For many years this institution has been a popular place for teachers to attend for professional study. Here for more than three-quarters of a century teachers from many sections of the country have come to acquire information and knowledge essential to success, and to gain inspiration for future service. To catch the spirit that prevails here and share in the enthusiasm that has always characterized the class recitations, the chapel services, the social gatherings, and the public lectures will prove an inspiring influence in the life of any student.

The Ohio Northern University is accredited by the State Department of Education to train teachers in the following fields: Elementary, High School, Industrial Arts, Health and Physical Education, Public School Music, and Business Education.

Students who are planning to teach should consult with the director of teacher training as early in their college course as possible.

**Appointment Bureau**

This bureau assists Ohio Northern students in securing teaching positions. In the past year many graduates and former students were brought in direct communication with school officials in search of superior teachers. A number of superintendents and principals owe their present positions to direct calls to this bureau.

No charge is made for the service of this bureau, but only teachers of merit will be registered. Address The Appointment Bureau.

**National Teachers Examinations**

The National Teachers Examinations are conducted yearly at Ohio Northern University, for teachers in service or in training. Teachers who are interested in professional advancement should take advantage of this opportunity.

**Graduate Record Examinations**

Teachers who are planning to enter Graduate Schools are advised to take the Graduate Record Examination administered at Ohio Northern University. Since many Graduate Schools require this examination, students will find it profitable to take the examination before applying for admission.
ELEMENTARY EDUCATION
Miss Mullins

TWO-YEAR CADET CURRICULUM

An extreme emergency at the present time permits cadet certification with two years preparation. To be eligible for such a certificate the student must have completed 95 quarter hours selected from the three-year diploma curriculum outlined below. He must complete the subjects which are starred and enough others from the outline to make 95 quarter hours. The state cadet four-year provisional certificate will be issued upon the completion of the required studies.

THREE-YEAR DIPLOMA CURRICULUM

This curriculum requires the completion of 138 quarter hours with a scholastic point hour ratio of at least 1.00. The state elementary four-year provisional certificate will be issued upon the completion of the required studies.

FOUR-YEAR DEGREE CURRICULUM

Students may obtain the degree, Bachelor of Science in Elementary Education by completing the following requirements:

1. Complete all requirements for the Three-Year Diploma Curriculum.

2. Complete additional academic and professional subjects from the "200" courses to make 186 quarter hours with scholastic point hour ratio of at least 1.00.

The Ada public schools together with other school systems within this region comprise our training facilities for observation and student teaching.

THREE-YEAR DIPLOMA CURRICULUM

First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>*Physical Education 101</td>
<td>*Physical Education 102</td>
<td>*Physical Education 103</td>
</tr>
<tr>
<td>*Introduction to Teaching 101</td>
<td>*Children’s Literature 138</td>
<td>*Art (Drawing) 115</td>
</tr>
<tr>
<td>*Biology 101</td>
<td>*Biology 102</td>
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<td>*English 101</td>
<td>*English 102</td>
<td>*English 102a</td>
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<td>*Hygiene 115</td>
<td>*Health Education 117</td>
<td>*Health Education 151</td>
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<tr>
<td>*Music Literature 108</td>
<td>*Introduction to Music 109</td>
<td>*Music Education 110</td>
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### Second Year

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<tr>
<td><em>Physical Education 104</em></td>
<td><em>Physical Education 105</em></td>
<td><em>Physical Education 106</em></td>
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<td>General Psychology 101</td>
<td>Educational Psychology 135</td>
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<tr>
<td>American History 113</td>
<td>American History 114</td>
<td>American History 115</td>
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<tr>
<td>English (Elective)</td>
<td>English (Elective)</td>
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<tr>
<td>*Teaching of Reading 240</td>
<td>*Teaching of Reading 241</td>
<td>*Principles and Practices of Plays and Games 156</td>
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<tr>
<td>Language-Arts 239</td>
<td><em>Art (Applied Design) 127</em></td>
<td><em>Art (Materials and Methods) 128</em></td>
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### Third Year

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<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Principles of Elementary Teaching 206</td>
<td>School Administration 252</td>
<td>Local Flora 110</td>
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<tr>
<td>Art (Crafts and Hobbies) 235</td>
<td>Teaching of Elementary Social Science 243</td>
<td>Teaching of Geography 222</td>
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<tr>
<td>Sociology 151</td>
<td>Sociology 152</td>
<td>Sociology 153</td>
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<td><em>Teaching of Arithmetic 236</em></td>
<td><em>Teaching of Arithmetic 237</em></td>
<td>Electives, Social Science</td>
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<tr>
<td><em>Student Teaching</em></td>
<td>Social Science Elective, or Student Teaching</td>
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</table>

### SECONDARY EDUCATION

**Requirements for the degree, Bachelor of Science in Education**

A. Curriculum requirements: The curriculum outlined below contains the professional and academic subjects required for the degree, Bachelor of Science in Education and the state secondary four-year provisional certificate.

### Four-Year Curriculum for High School Teachers

#### First Year

<table>
<thead>
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<th>FALL QUARTER</th>
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<th>SPRING QUARTER</th>
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<td>Physical Education 101</td>
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<tr>
<td><em>Major and Minor</em></td>
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#### Second Year

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<tr>
<td>American History 113</td>
<td>American History 114</td>
<td>American History 115</td>
</tr>
<tr>
<td>English (Elective)</td>
<td>English (Elective)</td>
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</tr>
<tr>
<td>General Psychology 101</td>
<td>Educational Psychology 135</td>
<td>Educational Psychology 136</td>
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<td>Electives</td>
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<td>Electives</td>
</tr>
<tr>
<td><em>Major and Minor</em></td>
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Third Year

FALL QUARTER
Principles of High School Teaching 208 5
Electives
Major and Minor 11

WINTER QUARTER
School Administration 252 5
Electives
Major and Minor 11

SPRING QUARTER
History and Philosophy of Education 238 5
Electives
Major and Minor 11

Fourth Year

FALL QUARTER
Special Methods 250 3
**Student Teaching 270 6
Electives
Major and Minor 7

WINTER QUARTER
Electives
Major and Minor 11

SPRING QUARTER
Electives
Major and Minor 16

*Major and minors are selected under the guidance of the student's adviser.
**Student teaching and special methods offered during Fall, Winter and Spring Quarters.

B. Graduation requirements. The student must complete:
1. The curriculum as outlined above.
2. Complete major and minor subjects as outlined in section C below.
3. Complete 186 quarter hours including 6 quarter hours of Physical Education with an average scholarship rating of at least one quality point for each scheduled hour.

C. Major and Minor Subjects

All candidates for the degree of Bachelor of Science in Education or Bachelor of Arts who expect to teach must have a teaching major of 36 quarter hours and one or more minors of 24 quarter hours each. Students should confer with their advisers before electing their major and minor subjects.

The Division of Certification of the State Department of Education specifies the following minimum requirements in the various teaching fields for the provisional high school certificate.

A. Biological Science (Prerequisite
1. High school unit) 15 sem. hrs.
1. Zoology 3 sem. hrs.
2. Botany 3 sem. hrs.
(Or General Biology, 6 sem. hrs.)
3. Pertinent electives 9 sem. hrs.
B. Bookkeeping 9 sem. hrs.
(Bookkeeping, accounting and methods)
C. Bookkeeping—Social Business 20 sem. hrs.
1. Bookkeeping and Accounting 9 sem. hrs.

2. Business Law
3. Economic Geography
4. Economics
5. Business Organization
6. Excess in above or pertinent electives 11 sem. hrs.

D. Earth Science (Prerequisite
1. High school unit) 15 sem. hrs.
1. Geology 3 sem. hrs.
2. Geography 3 sem. hrs.
3. Pertinent electives or
excess in above 9 sem. hrs.

E. English (Prerequisite
3 high school units) . 15 sem. hrs.
1. English Composition . 6 sem. hrs.
2. English and American Poetry . 3 sem. hrs.
3. English and American Prose . 3 sem. hrs.
4. Pertinent electives or excess in above . 3 sem. hrs.

F. General Science . 15 sem. hrs.
1. Physics . 3 sem. hrs.
2. Chemistry . 3 sem. hrs.
3. Biology . 3 sem. hrs.
4. Other science electives or excess in above . 6 sem. hrs.
(General science will also be added to a certificate on the basis of an integrated base course and pertinent electives totaling 15 sem. hrs.)

G. History (prerequisite 2 high school units) . 15 sem. hrs.
1. World History . 3 sem. hrs.
2. American History . 3 sem. hrs.
3. Political Science . 3 sem. hrs.
4. Pertinent electives or excess in above . 6 sem. hrs.

H. Industrial Arts . 24 sem. hrs.
Well distributed over following areas:
1. Graphic Arts
   (Including drawing, planning, printing, photography, and duplicating).
2. Woods
   (Including furniture construction, carpentry and wood finishing).
3. Metals
   (Including sheet metal, art metal, foundry and machine metal work).
4. Applied Electricity
   (Communication, transportation and power).
5. Ceramics
   (Clay and concrete).
6. Methods and Organization

I. Language (Prerequisite 2 high school units) . 15 sem. hrs.
(15 semester hours in the language in which certification is desired).

J. Mathematics (Prerequisite 2 high school units) . 15 sem. hrs.
1. College Algebra . 3 sem. hrs.
2. College Geometry . 3 sem. hrs.
3. Trigonometry . 3 sem. hrs.
4. Pertinent electives or excess in above . 6 sem. hrs.

K. Music—Instrumental . 24 sem. hrs.
(Valid in both elementary and high school).
1. Harmony (Written, oral and keyboard, sight singing and ear training) . 10 sem. hrs.
2. History and Appreciation . 4 sem. hrs.
3. Applied music (Orchestral instruments) . 4 sem. hrs.
4. Music education, including instrumental methods and conducting . 6 sem. hrs.
5. Membership in band or orchestra

L. Music—Vocal . 24 sem. hrs.
(Valid in both elementary and high school).
1. Harmony (written, oral and keyboard, sight singing and ear training) . 10 sem. hrs.
2. History and Appreciation . 4 sem. hrs.
3. Applied music—piano or singing or both . 4 sem. hrs.
4. Music education, including methods for elementary and high school observation, participation and conducting . 6 sem. hrs.
5. Membership in some choral group

M. Physical Education . 16 sem. hrs.
1. Principles, organization and administration of health and physical education . 4 sem. hrs.
2. Theory and practice, including stunts, apparatus, tumbling, swimming, dancing, etc. . 4 sem. hrs.
3. Theory and practice, including athletic coaching in intramural and interscholastic athletics . 4 sem. hrs.
4. Health education, including teaching of health and school health problems . 4 sem. hrs.

N. Physical Science (Prerequisite 1 high school unit) . 15 sem. hrs.
1. Physics . 6 sem. hrs.
2. Chemistry . 6 sem. hrs.
3. Pertinent electives or excess in above . 3 sem. hrs.

O. Salesmanship — Merchandising . 20 sem. hrs.
1. Marketing Principles . 3 sem. hrs.
2. Salesmanship . 3 sem. hrs.
3. Advertising
4. Retailing
5. Merchandising
6. Economic Geography
7. Excess in above or pertinent electives ... 14 sem. hrs.

P. Science (Comprehensive
Major) ............... 40 sem. hrs.
Integrated base course plus pertinent electives of forty semester hours well distributed over the following areas:
1. Physics
2. Chemistry
3. Zoology
4. Botany
5. Geology
6. Astronomy

Q. Social Science ........... 15 sem. hrs.
(Prerequisite one high school unit)
1. Economics ............ 3 sem. hrs.
2. Sociology ........... 3 sem. hrs.
3. Industrial Geography .. 3 sem. hrs.
4. Pertinent electives or excess in above ...... 6 sem. hrs.

R. Social Studies (Comprehensive
Major) ............... 40 sem. hrs.
Integrated base course plus pertinent electives or forty semester hours well distributed over following areas:
1. Economics
2. Sociology
3. Modern European History
4. American History
5. Principles of Geography
6. Political Science

S. Speech .................. 15 sem. hrs.
Distributed over the following areas:
1. Speech fundamentals
2. Interpretative reading
3. Speech correction and voice
4. Dramatic production
5. Public address and discussion
6. Excess in above or pertinent electives ........ 5 sem. hrs.

T. Stenography—Typing ....... 20 sem. hrs.
1. Shorthand ............ 9 sem. hrs.
2. Typing ............. 3 sem. hrs.
4. Office practice
5. Business English
6. Excess in above or pertinent electives ...... 6 sem. hrs.

V. Typing .................. 5 sem. hrs.
(Typing and Methods)
Any of the above subjects appearing on a certificate issued by the State of Ohio shall be valid for teaching that subject or any subject listed as a required course in the above schedule.

After September 1, 1939, teaching subjects will not be designated as majors or minors. The certificate will, however, indicate the number of hours of preparation in each subject listed thereon.

The Division of Certification of the State Department of Education specifies the following minimum requirements for the provisional special certificate.

A. Business Education ...... 45 sem. hrs.
Distributed over the following areas:
1. Stenographic-Typing
   Shorthand, Typing, Office Practice, Business English and Correspondence, Methods in Shorthand and Typing
2. Bookkeeping—Social Business
   Business Law, Accounting, Economic Geography, Economics, Business Organization
3. Salesmanship—Merchandising
   Marketing Principles, Salesmanship, Advertising, Retailing, Merchandising,
   Minima—Typing 3 sem. hrs.; Shorthand, 6 sem. hrs.; Bookkeeping and Accounting, 6 sem. hrs.; Methods, 2 sem. hrs.

B. Industrial Arts ........... 45 sem. hrs.
Well distributed over the following areas:
1. Graphic Arts
   (Including Drawing, Planning, Printing, Photography and Duplicating).
2. Woods
   (Including Furniture Construction, Carpentry and Wood Finishing).
3. Metals
   (Including Sheet Metal, Art Metal,
Colleges of Liberal Arts

4. Applied Electricity
   (Communication, Transportation and Power).
5. Ceramics
   (Clay and Concrete)
6. Methods and Organization

C. Music
1. Instrumental .......... 53 sem. hrs.
   a. Methods, Materials and Observation .............. 4 sem. hrs.
   b. Student Teaching . 3 sem. hrs.
      (Elementary and Secondary levels).
   c. Conducting .......... 2 sem. hrs.
   d. Instrumental Classes
      .............................................. 4 sem. hrs.
   e. Theory (Ear Training, Sight Singing, Dictation, Harmony, etc.) .......... 16 sem. hrs.
   f. Applied Music .... 16 sem. hrs.
   g. History, Appreciation and Literature .... 4 sem. hrs.
   h. Ensemble .......... 4 sem. hrs.
2. Vocal ............ 53 sem. hrs.
   a. Methods, Materials and Observation .... 6 sem. hrs.
   b. Student Teaching . 3 sem. hrs.
      (Elementary and Secondary levels).
   c. Conducting .......... 2 sem. hrs.
   d. Class Voice .......... 2 sem. hrs.
   e. Theory (Ear Training, Sight Singing, Dictation, Harmony, etc.) .......... 16 sem. hrs.

BUSINESS EDUCATION

This curriculum designed for students who wish to prepare themselves for teaching business education leads, upon completion, to the degree of Bachelor of Science in Education and the state high school provisional certificate.

First Year

FALL QUARTER
Physical Education 101  1
Biology 101  3
Business Organization 103  2
English Composition 101  3
Shorthand 110 or 111  3
Typewriting 101 or 102  2
Political Science or Speech 3

WINTER QUARTER
Physical Education 102
Biology 102
Business Organization 104
English Composition 102
Shorthand 111 or 112
Typewriting 102 or 103
Political Science or Speech

SPRING QUARTER
Physical Education 103  1
Biology 103  3
Business Organization 105  2
English Composition 102a  3
Shorthand 112 or 115  3
Typewriting 103 or 107  2
Political Science or Speech 3
Ohio Northern University

### Second Year

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<thead>
<tr>
<th>FALL QUARTER</th>
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<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
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<tr>
<td>Psychology 101</td>
<td>Educational Psychology 135</td>
<td>Educational Psychology 136</td>
</tr>
<tr>
<td>Accounting 131</td>
<td>Accounting 133</td>
<td>Accounting 133</td>
</tr>
<tr>
<td>Typewriting 107*</td>
<td>Office Practice 129</td>
<td>Office Practice 130</td>
</tr>
<tr>
<td>Shorthand, Dictation and Transcription 115*</td>
<td>English Elective</td>
<td>English Elective</td>
</tr>
<tr>
<td>History 113</td>
<td>History 114</td>
<td>History 115</td>
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</table>

### Third Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 121</td>
<td>Economics 122</td>
<td>Economics 123</td>
</tr>
<tr>
<td>Marketing 241</td>
<td>Advertising 245</td>
<td>Salesmanship 246</td>
</tr>
<tr>
<td>Principles of High School</td>
<td>School Administration 252</td>
<td>History and Philosophy of Education 238</td>
</tr>
<tr>
<td>Teaching 208</td>
<td>Elective</td>
<td>Business Writing 118</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>Elective</td>
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<tr>
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</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Law 221</td>
<td>Business Law 222</td>
<td>Business Law 223</td>
</tr>
<tr>
<td>Methods in Teaching</td>
<td>Student Teaching **</td>
<td>Elective</td>
</tr>
<tr>
<td>Business Subjects 230</td>
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<td></td>
</tr>
<tr>
<td>Retailing 247</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Students not meeting accepted standards of efficiency in typewriting and shorthand, or lacking required number of hours for special certificate will register for additional courses in these fields.

**Student Teaching offered each quarter of senior year, six hours required.

### OPTIONS IN BUSINESS EDUCATION

Students who do not fulfill the comprehensive major in Business Education (45 semester hours or 68 quarter hours) have five other options. See Sections B, C, O, T, and V, under Major and Minor Subjects under Four-Year Curriculum for High School Teachers.

### HEALTH AND PHYSICAL EDUCATION

Students who complete this curriculum are eligible to receive the state high school provisional certificate for the teaching and supervision of physical education.

### First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education 101a</td>
<td>Physical Education 102a</td>
<td>Physical Education 103a</td>
</tr>
<tr>
<td>Biology 101</td>
<td>Biology 102</td>
<td>Biology 103</td>
</tr>
<tr>
<td>English 101</td>
<td>English 102</td>
<td>English 102a</td>
</tr>
<tr>
<td>Mathematics, Foreign Language or Social Science 7</td>
<td>Mathematics, Foreign Language or Social Science 9</td>
<td>Theory and Practice of Plays and Games 156</td>
</tr>
<tr>
<td>Hygiene 115</td>
<td></td>
<td>Mathematics, Foreign Language or Social Science 6</td>
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### Second Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>Physical Education 104a</td>
<td>Physical Education 105a</td>
<td>Physical Education 106a</td>
</tr>
<tr>
<td>Comparative Anatomy 206</td>
<td>Anatomy and Physiology 213</td>
<td>Local Flora or Heredity or Evolution</td>
</tr>
<tr>
<td>Health Education 152</td>
<td>Health Education 117</td>
<td>Health Education 151</td>
</tr>
<tr>
<td>General Psychology 101</td>
<td>Educational Psychology 135</td>
<td>Educational Psychology 136</td>
</tr>
<tr>
<td>English</td>
<td>English</td>
<td>Body Mechanics 155</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>First Aid 158</td>
</tr>
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<td></td>
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</table>

### Third Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles and Methods of</td>
<td>Principles and Methods of</td>
<td>Methods of Physical Education</td>
</tr>
<tr>
<td>Physical Education 201</td>
<td>Physical Education 202</td>
<td>203</td>
</tr>
<tr>
<td>Football Coaching 221a or</td>
<td>Basketball Coaching 222 or</td>
<td>Baseball and Track Coaching</td>
</tr>
<tr>
<td>Coaching (Women) 221b</td>
<td>Coaching (Women) 222</td>
<td>223 or Coaching (Women) 223</td>
</tr>
<tr>
<td>Sociology 151</td>
<td>Educational Methods 250</td>
<td>Sociology 153</td>
</tr>
<tr>
<td>Principles of High School</td>
<td>Sociology 152</td>
<td>History and Philosophy of</td>
</tr>
<tr>
<td>Teaching 208</td>
<td>School Administration 252</td>
<td>Education 238</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organ. and Admin. of</td>
<td>Normal Diagnosis 252</td>
<td>History of Physical Education</td>
</tr>
<tr>
<td>Physical Education 254</td>
<td>Advanced Coaching 272</td>
<td>260</td>
</tr>
<tr>
<td>Advanced Coaching 271</td>
<td>Student Teaching 263b</td>
<td>Advanced Coaching 273</td>
</tr>
<tr>
<td>Student Teaching 263a</td>
<td>Elective</td>
<td>Student Teaching 263c</td>
</tr>
<tr>
<td>Electives</td>
<td>10-11</td>
<td>Electives</td>
</tr>
</tbody>
</table>

Students offering less than one unit of chemistry for entrance must schedule Chemistry 101a, 102a, and 103a, not later than the sophomore year.

### INDUSTRIAL ARTS

The industrial arts curriculum has been established to meet the need of those desiring to teach industrial arts in the junior and senior high schools of Ohio.

### First Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
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<tr>
<td>English 101</td>
<td>English 102</td>
<td>English 102a</td>
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<tr>
<td>Chemistry 101 or 101a</td>
<td>Chemistry 102 or 102a</td>
<td>Chemistry 103 or 103a</td>
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<tr>
<td>Drawing 111</td>
<td>Drawing 112</td>
<td>Drawing 115</td>
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<tr>
<td>Speech 101</td>
<td>Speech 102</td>
<td>Industrial Arts Orientation</td>
</tr>
<tr>
<td></td>
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<td>Laboratory 101</td>
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</table>
PUBLIC SCHOOL MUSIC

These courses are designed for students who wish to prepare themselves for the teaching and supervision of music in public schools. Applicants for admission are expected to possess a reasonable amount of musical training. Students completing these courses will receive the degree of Bachelor of Science in Education and the state four-year provisional certificate.
### College of Liberal Arts

#### Second Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
<td>Physical Education 106</td>
</tr>
<tr>
<td>General Psychology 101</td>
<td>Educational Psychology 135</td>
<td>Educational Psychology 136</td>
</tr>
<tr>
<td>Sight Singing and Ear Training 104</td>
<td>Sight Singing and Ear Training 105</td>
<td>or Elective</td>
</tr>
<tr>
<td>History and Appreciation 153</td>
<td>History and Appreciation 154</td>
<td>Sight Singing and Ear Training 106</td>
</tr>
<tr>
<td>Harmony 114</td>
<td>Harmonic Analysis 115</td>
<td>History and Appreciation 155</td>
</tr>
<tr>
<td>Conducting 140</td>
<td>Conducting 141</td>
<td>Musical Form 211</td>
</tr>
<tr>
<td>Applied Music</td>
<td>Applied Music</td>
<td>Applied Music</td>
</tr>
<tr>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
</tr>
<tr>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
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</table>

#### Third Year

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Methods 202</td>
<td>Student Teaching 213</td>
<td>Intermediate Methods</td>
</tr>
<tr>
<td>Principles of Teaching 208</td>
<td>School Administration 252</td>
<td>(a) or (b) 203</td>
</tr>
<tr>
<td>Band and Orchestral Instruments 220</td>
<td>Band and Orchestral Instruments 221</td>
<td>Band and Orchestral Instruments 238</td>
</tr>
<tr>
<td>English Literature or Elective 3</td>
<td>English Literature or Elective</td>
<td>Band and Orchestral Instruments 222</td>
</tr>
<tr>
<td>Applied Music</td>
<td>Applied Music</td>
<td>Applied Music</td>
</tr>
<tr>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
</tr>
<tr>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
</tr>
</tbody>
</table>

#### Fourth Year

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<thead>
<tr>
<th>Fall Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teaching 214</td>
<td>Junior and Senior High School Methods and Materials (a) or (b)</td>
<td>Student Teaching 215</td>
</tr>
<tr>
<td>(a) or (b) 3</td>
<td>History or Political Science 3</td>
<td>(a) or (b) 209</td>
</tr>
<tr>
<td>History or Political Science 3</td>
<td>Advanced Orchestration 252 &amp; 217</td>
<td>History or Political Science</td>
</tr>
<tr>
<td>Orchestration 251</td>
<td>Advanced Orchestration 252 &amp; 217</td>
<td>Elective</td>
</tr>
<tr>
<td>(a) Class Voice 207</td>
<td>(a) Class Voice 208 &amp; 218</td>
<td>(a) Class Voice 209 &amp; 219</td>
</tr>
<tr>
<td>(b) Instrumental Class</td>
<td>(b) Instrumental Class</td>
<td>Elective</td>
</tr>
<tr>
<td>Electro 3</td>
<td>Elective 3</td>
<td>Electro 3</td>
</tr>
<tr>
<td>Applied Music</td>
<td>Elective 3</td>
<td>Applied Music</td>
</tr>
<tr>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
<td>(a) Chorus</td>
</tr>
<tr>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
<td>(b) Band or Orchestra</td>
</tr>
</tbody>
</table>

(a) Required of all Vocal Majors.
(b) Required of all Instrumental Majors.

Attendance at all recitals is required of all music majors.
DESCRIPTION OF PROFESSIONAL COURSES
IN EDUCATION

101. INTRODUCTION TO TEACHING
FALL, 3 Hours
A guidance course for prospective teachers; interpretation of the professional problems of the active teacher; the teacher's work; extrinsic rewards of teaching; factors in supply and demand; preparation for teaching; ethical obligations; development of professional attitudes. M. W. F., 1.

135. EDUCATIONAL PSYCHOLOGY
WINTER, 3 Hours
Interpretation of the fundamental psychological facts, principles, and theories applying to education; pupil growth, development and adjustment; problems of learning; relative influence of nature and nurture; statistical procedures. Prerequisite: Psychology 101. M. W. F., 5.

136. EDUCATIONAL PSYCHOLOGY
SPRING, 3 Hours
Characteristics of the child at different levels of maturity; physical, mental, and emotional growth; growth and organization of meanings; control of social and ethical behavior; development of personality. Prerequisite: Psychology 101. M. W. F., 5.

201. GUIDANCE
SUMMER, 3 Hours
This course is organized with particular reference to the needs of school advisers. Basic concepts and aims in guidance; principles in counseling; records in guidance; planning and administering the guidance program. Daily.

ELEMENTARY EDUCATION

108. MUSIC LITERATURE AND APPRECIATION
FALL, 3 Hours
A general course for deeper understanding and more intelligent discrimination of music through analysis and active listening to representative works of the music masters. The correlation of music with everyday living. M. W. F., 4.

109. INTRODUCTION TO MUSIC
WINTER, 3 Hours
Development of the skills of ear training and sight singing, and voice culture through the use of songs suitable for the school music program. M. W. F., 4.

110. MUSIC EDUCATION
SPRING, 3 Hours
Music activities, music materials and literature, unit planning and teaching methods and skills for the different age groups from kindergarten to junior high school. This includes singing, rhythmic, creative, and listening experiences. M. W. F., 4.

115. ART—DRAWING
SPRING, 4 Hours
See Industrial Arts

127. ART—APPLIED DESIGN
WINTER, 3 Hours
See Industrial Arts

128. ART MATERIALS AND METHODS
SPRING, 4 Hours
The art needs and characteristics of elementary school children at different age levels; philosophy and function of art in an elementary school; suggestion for the creation of simple and inexpensive equipment and media needed for child art work; evaluation, methods, and observation of children adventuring in art. M. W. F., 3.
138. **Children's Literature**  
Winter, 3 Hours  
A study from the literary and educational point of view of the best of literature for the elementary school children; the place of literature in the education of the child; principles involved in the teaching of literature with stress on its integration with other school activities. M. W. F., 5.

206. **Principles of Teaching in the Elementary School**  
FALL, 3 Hours  
Fundamental principles of teaching and learning with special reference to their application in the elementary grades. Attention is given to current trends in elementary education; developing units of work; utilizing children's latent creative abilities; meeting individual needs; managing the daily program. M. W. F., 5.

222. **Teaching of Geography**  
SPRING, 3 Hours  
A survey of techniques based on the principle units of elementary geography. Home geography; regional; visual; travel; integrated units; place; problems; principles. M. W. F., 6.

235. **Art—Crafts and Hobbies**  
Fall, 3 Hours  
See Industrial Arts.

236. **Teaching of Arithmetic**  
Fall, 3 Hours  
Content, methods and principles underlying the teaching of arithmetic in the first, second and third grades; diagnostic and remedial work; preparation and evaluation of materials of instruction. M. W. F., 4.

237. **Teaching of Arithmetic**  
Winter, 3 Hours  
A study of the content, methods and principles underlying the teaching of arithmetic in grades 4, 5, 6, 7, and 8; diagnostic and remedial work; preparation and evaluation of materials in instruction. M. W. F., 4.

239. **Teaching of the Language Arts**  
Fall, 3 Hours  
Problems and methods of teaching oral and written expression, handwriting and spelling and their relation to other subjects in the curriculum. Attention is given to the organization and administration of a functional language arts program; diagnostic and remedial measure; preparation and evaluation of materials of instruction. M. W. F., 3.

240. **Teaching of Reading**  
Fall, 3 Hours  
Principles and techniques of teaching reading in first, second and third grades. Attention will be given to reading readiness, phonics, oral and silent reading, diagnostic and remedial measures, evaluation of textbooks and tests. M. W. F., 2.

241. **Teaching of Reading**  
Winter, 3 Hours  

242. **Remedial Reading**  
Summer, 3 Hours  
Causes of reading difficulties; the diagnosis and remedial treatment of each type of disability; a study of diagnostic tests. Daily.
243. **Teaching of the Social Studies in the Elementary Schools**  
**Winter, 3 Hours**  
Objectives, methods, modern tendencies and evaluation in history, geography, civics, and related fields, planning of experience units and materials of instruction. M. W. F., 3.

268. **Student Teaching in the Elementary Schools**  
**Fall, Winter, Spring, 4-8 Hours**  
Eight hours student teaching is required of all candidates for the State Elementary Four-Year Provisional Certificate. The work consists of planning and teaching under supervision in the elementary grades. The following prerequisites are required. 1. Have a minimum scholarship rating of 1.25 quality points per scheduled hour. 2. Approved by Director of Teacher Training.

**SECONDARY EDUCATION**

208. **Principles of High School Teaching**  
**Fall, 5 Hours**  
A presentation of objectives, methods, and the techniques of teaching procedures in the high school; objectives in secondary education; individual differences; stimulating high school pupils to wholesome activities; procedures involving the unit idea; planning learning activities; principles and instruments of measurement; guidance and counseling; observation of secondary school teaching. Prerequisite: Psychology 135. Daily, 3.

238. **History and Philosophy of Education**  
**Spring, 5 Hours**  
A survey of ancient, mediaeval, and modern education with the object of developing an appreciation and understanding of modern educational theories and practices. Daily, 3.

250. **Teaching of Secondary School Subjects**  
**Fall, Winter, Spring, 3 Hours**  
Senior standing. By arrangement.

**Teaching of English**

Effective devices and methods employed in teaching English in the high school; methods of teaching literature, grammar, oral English, and composition; evaluation and selection of textbooks, visual materials and library references; extra-curricular programs; objective tests.

**Teaching of History and Social Sciences**

Purposes and aims in the teaching of history and the social sciences; evaluation of integrated courses in the social sciences; selecting and organizing materials; methods of procedure; objective tests.

**Teaching of Mathematics**

Reorganization of mathematics in secondary schools; evaluation of arithmetic, algebra, geometry and unified mathematics; selecting and organizing materials; objective tests.

**Teaching of Languages**

Work is adapted to meet the needs of students majoring in the different languages. Aims and methods of teaching languages; study of direct and indirect methods, recent trends; evaluation of textbooks; suggestions for projects; organizing language clubs; objective tests.
Teaching of the Natural Sciences

Designed for students who are preparing to teach one or more of the Natural Sciences. The work is adapted to meet the needs of the individual student. Selection and organization of subject matter; planning of laboratories; choice of equipment and textbooks; improvised equipment; selected projects in the different sciences; objective tests.

252. School Administration and Organization Winter, 5 Hours
Designed to give an introductory overview of the administration and organization of education in the United States; federal, state and local administration; financing public education; the teaching staff; pupil personnel; administration and organization of the elementary, junior, and senior high schools; Ohio school laws; buildings and equipment.

270. Student Teaching—Junior and Senior High Schools Fall, Winter, Spring, 6 Hours

263. Student Teaching—Physical Education Fall, Winter, Spring, 6 Hours

213, 214, 215. Student Teaching—Music Fall, Winter, Spring, 6 Hours

242. Student Teaching—Industrial Arts Fall, Winter, Spring, 6 Hours

240. Student Teaching—Business Education Fall, Winter, Spring, 6 Hours

Student teaching is required of all candidates for the state secondary four-year provisional certificate. The following prerequisites are required: 1. Have a senior rank. 2. Have a minimum scholarship rating of 1.25 quality points per scheduled hour. 3. Have completed courses in Educational Psychology, Principles, and Special Methods. 4. Teach either major or minor subjects. 5. Approved by the Director of Teacher Training.

The work consists of planning and teaching under supervision either in the Junior or Senior high school, at least one hour a day or the equivalent of six hours a week for one quarter. Six hours credit is given for approximately 72 hours of teaching and two one-hour conference periods per week throughout the quarter. Student teaching is offered during the Fall, Winter, and Spring Quarters. By arrangement.
COLLEGE OF ENGINEERING

ALEXANDER RAFFEN WEBB
Dean

HISTORY AND PURPOSE

The first catalogue of the University included a course in surveying. In 1880, a department of Civil Engineering was organized. Later, departments in Mechanical and Electrical Engineering were established. All the courses of the various curricula have been revised and greatly strengthened.

The purpose of the College of Engineering is to furnish the student the knowledge necessary for a thorough training in the principles of Engineering, and to give him such special and technical information as is required in his own particular field of engineering.

ADMISSION

Candidates of good moral character may apply for admission upon the following plans:

1. CERTIFICATE. Graduates from first grade high schools or accredited academies whose credits show proper distribution of units are admitted without examination upon presentation of properly signed entrance certificates. Distribution of fifteen units must be as follows:

   English ......................................................... 3
   Mathematics, including solid geometry .................. 3
   Physics ......................................................... 1
   Electives ..................................................... 6
   Two units to be chosen from the following list: Chemistry, Biology, Language, History.

Applicants deficient in advanced algebra, solid geometry, or physics are required to make up deficiencies.

2. EXAMINATION. Candidates who are not graduates of first grade
high schools or academies and are therefore deficient in some of the units for admission may be admitted upon examination.

3. **Advanced Standing.** An applicant from another college seeking advanced standing must present evidence of honorable dismissal and an official transcript of his college record. Some credit may be allowed for practical experience in drafting, surveying, and shop work. Applicants for such credit must submit a satisfactory statement from their employer, giving time of service, nature of work, name and address of employer.

Advance credit will not be given for more than 162 quarter hours (108 semester hours).

4. **Special Student.** Mature persons not candidates for a degree may be admitted, if on consultation the Dean is satisfied that they have sufficient preparation to pursue the work successfully. Such applicants are classified as Special Students. Upon completion of their work, a certificate showing the course of study pursued and the amount of work covered is presented to them.

The standard load in the College of Engineering is 18 hours. Extra hours based upon scholarship attainments may be granted by the Dean.

**Classification**

The minimum requirements for sophomore standing are 46 credit hours and a point average of 0.5; for junior standing, 97 credit hours and a point average of 0.7; for senior standing, 150 credit hours and a point average of 0.9.

**Graduation and Degrees**

Two hundred and sixteen hours including physical education are required for graduation. The student must have a scholarship rating of at least one quality point for each credit hour. A student cannot be a candidate for more than one degree at any one time.

Final credits toward graduation must be earned in residence.

The university is empowered to grant the customary academic degrees, which in the College of Engineering are Bachelor of Science in Civil Engineering, Bachelor of Science in Mechanical Engineering, and Bachelor of Science in Electrical Engineering. The University may confer the professional degree upon a candidate who at least five years after graduation has a record of at least three years in a responsible position, has submitted an approved thesis and has successfully completed a comprehensive examination.
CHEMICAL ENGINEERING

Fundamental chemistry has in recent years become a vital factor in the industrial world, and its application to the process of manufacturing is indispensable. In addition to a four-year course for students majoring in chemistry, the University offers a two-year course in chemical engineering which may admit the student to an approved university where he may complete the professional requirements in chemical engineering.

First Year

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
<td>Physical Education 102</td>
<td>Physical Education 103</td>
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<td>Mathematics 103</td>
<td>Mathematics 105</td>
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<td>Physical Education 115</td>
<td>Chemistry 102a or 102</td>
<td>Chemistry 103a or 103</td>
</tr>
<tr>
<td>Chemistry 101a or 101</td>
<td>English 102</td>
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<td>English 101</td>
<td>Mechanical Engineering 112</td>
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<tr>
<td>Mechanical Engineering 114</td>
<td>Geology 112</td>
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Second Year

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>Physical Education 104</td>
<td>Physical Education 105</td>
<td>Physical Education 106</td>
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<tr>
<td>Mathematics 107</td>
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<td>Chemistry 104</td>
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<td>Chemistry 106</td>
</tr>
<tr>
<td>Economics 121</td>
<td>Geology 332</td>
<td>Mechanical Engineering 114</td>
</tr>
</tbody>
</table>

AERONAUTICAL ENGINEERING

An ever increasing emphasis has been placed upon the study of aeronautics and airplane design in particular. Both in time of war and peace, the study is not only interesting but practical since it assists in transportation, the enriching of commerce, and in time of war, the defense of the country.

The primary objective of this course is to provide the student with a sound basic training in order that he may complete the course in an approved school of aeronautical engineering.

First Year

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## CIVIL ENGINEERING

Although many of the former divisions have grown into separate departments, civil engineering offers greater opportunities than ever before. No sharp line of distinction can be drawn in the fundamental training of civil, mechanical, electrical, and chemical engineering for the reason that the sciences basic to engineering—mathematics, physics, chemistry, and some applied science—are essential in all departments of engineering.

The department is supplied with high grade instruments and appliances necessary for first class instruction and practice. The laboratories are well equipped, the drafting room large and modern, the scientific library excellent. A fully equipped senior design room is also in use.

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Ohio Northern University

Fourth Year

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Total number of hours required for graduation 216.
Attendance at Engineering Lectures is required.
Attendance on Inspection Trip is required during third year.

ELECTRICAL ENGINEERING

The courses offered in electrical engineering require a thorough study of theoretical and applied electricity. The first half of the course of study consists of basic engineering subjects. In the second half an intensive study is made of direct current circuits and machinery, alternating current circuits and machinery, electrical power transmission, electrical machine design, electronics, and high-frequency currents. Carefully chosen laboratory experiments supplement class instruction in theory.

The curriculum stresses fundamentals rather than specialized skills. Ample opportunity is provided by campus activities and elective courses for the engineer to develop his cultural as well as his technical training.

The University power plant supplies both direct and alternating currents for laboratory test purposes. The laboratory equipment includes direct current and alternating current motor-generator sets, compound and series direct current motors, rotary converters, squirrel-cage and wound-rotor induction motors, transformers, vacuum tube oscillators, capacity bridges, teletypewriters, an artificial communication line, an oscillograph, and the necessary auxiliary equipment and instruments for thorough laboratory instruction.

First Year

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Fourth Year

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Total number of hours required for graduation 216.
Attendance at Engineering Lectures is required.
Attendance on Inspection Trip is required during third year.

MECHANICAL ENGINEERING

Mechanical Engineering deals with the transformation and transmission of energy and with the theory and construction of mechanism and machinery.

The first half of the curriculum consists of basic engineering subjects. In the latter half an exhaustive study is made of heat engineering, together with the design, erection, and maintenance of power plant apparatus. Thorough training is given in machine drafting, machine design, thermodynamics, steam engines, steam boilers, gas engines, electrical machinery, and steam power plants.

The University has its own steam and gas-engine driven lighting plant and a central steam heating plant, lighting and heating all the University buildings. The equipment is installed with special conveniences for making laboratory tests on boilers, heating and power apparatus under operating conditions.
A machine shop supplements the laboratory equipment, giving opportunity for training in the use of tools and general machine shop practice.

### First Year

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Total number of hours required for graduation 216.

Attendance at Engineering Lectures is required.

Attendance on Inspection Trip is required during third year.
Technical Organizations

The Ohio Northern Student Chapter of the American Society of Civil Engineers holds semi-monthly meetings. All civil engineering students are eligible for membership.

The American Institute of Electrical Engineers student branch holds semi-monthly meetings. At these meetings original papers and papers printed in the Proceedings of the American Institute of Electrical Engineers are read and discussed. All students interested in electrical engineering are eligible for membership.

The American Society of Mechanical Engineers holds semi-monthly meetings at which original papers in this field of engineering are read and discussed by members of the society. Students enrolled in the department of mechanical engineering are eligible for membership.

The student affiliate branch of the National Society of Professional Engineers embraces all departments of the College of Engineering.

The University Radio Club maintains a short-wave station, W8AOT, gives code practice and short-wave operating experience and holds semi-monthly meetings at which papers and talks on radio subjects are presented.

The Ohio Northern Chapter of Student Affiliates of the American Chemical Society holds semi-monthly meetings. Scientific men of national and often international renown appear before this group from time to time.

The Annual Inspection Trip

The Junior class may devote one week to an extended visit to some large commercial center. The class spends its time profitably in the study of various phases of engineering and industrial activity in Chicago, Milwaukee, South Bend, Detroit, Pittsburgh, or the Cleveland areas.

Positions

Past experience shows that the demand for graduates of the College of Engineering exceeds the supply. Often representatives of leading utilities and industries visit the University to interview seniors relative to employing them upon graduation. The University does not guarantee positions to its graduates but does everything within its power to assist them in obtaining employment after graduation.
101. **A. S. C. E. Student Branch Meetings** 

Fall, Winter and Spring Quarters. Professional seminar meetings of the Student Branch of the American Society of Civil Engineers to hear lectures by prominent engineers, to read and discuss papers presented by members of the Branch, and to gain some experience in the conduct of such meetings.

1/2 Hour

221. **Surveying** 

Fall, 5 Hours

Use of chain, level, and transit. Land surveying, topographic surveying by stadia and transit, city surveying and measurements of volumes. Prerequisite: Trigonometry 103. Recitations, M. W. F., 1; Laboratory, T. Th., 5, 6, 7, or M. W., 6, 7, 8.

223. **Surveying** 

Spring, 5 Hours

Precise surveying, advanced topographic surveying, hydrographic surveying. Prerequisite: Surveying 221. Recitations, M. W. F., 1; laboratory, T. Th., 6, 7, 8.

311. **Railroad Engineering** 

Fall, 5 Hours

Simple curves, compound curves, reverse curves, spirals, switches, and turnouts. Prerequisite: Surveying 213. Recitations, M. T. W. Th., 4; laboratory, F., 5, 6, 7.

312. **Mechanics of Materials** 

Winter, 5 Hours

General principles of stresses, elastic limit, shear, riveted joints, torsion, beams, stresses in beams, deflection in beams. Prerequisite: Calculus 109 and Mechanics 213. Daily, 2.

313. **Mechanics of Materials** 

Spring, 5 Hours

Beams with more than two supports, shear in beams, special beams, bending combined with tension or compression, column theory, column formulas used by engineers, resilience in bending or shear, combined stresses, theory of elastic limit or failure, curved beams and hooks. Prerequisite: Mechanics of Materials 312. Daily, 2.

321. **Testing Materials** 

Fall, 2 Hours

Testing cement mortars, tests of small wooden beams and columns with deflection instrument, tension test of steel and iron with extensometer, tests for impurities in concrete aggregates, sieve analysis of concrete aggregates, test of weir. Prerequisite: Mechanics of Materials 313. Laboratory, T. Th., 5, 6.

322. **Hydraulics** 

Winter, 5 Hours

Static water pressure, flotation, buoyancy, laws of falling bodies applied to hydraulics, measurements of flow. Prerequisite: Physics, Calculus 109 and Mechanics 213. Daily, 3.

323. **Highway Engineering** 

Spring, 3 Hours

Design, construction and maintenance of earth roads, paved roads, and streets. Prerequisite: Geology and Surveying 223. Recitations, M. W. F., 4.

332. **Geology** 

Winter, 3 Hours

411. STRUCTURAL ENGINEERING
Fall, 6 Hours
An introductory course covering by analytical and graphical methods the determinations of reactions, moment, shears and stresses in simple trussed structures for fixed and moving loads. Design steel and wood beams, and design and make detail drawings of simple roof truss. Prerequisite: Mechanics of Materials 313. M. W. F., 5, 6, 7.

412. STRUCTURAL ENGINEERING
Winter, 6 Hours

413. STRUCTURAL ENGINEERING
Spring, 6 Hours

421. REINFORCED CONCRETE
Fall, 4 Hours

422. REINFORCED CONCRETE
Winter, 4 Hours
Design of buildings. Prerequisite: Reinforced Concrete 421. Recitation, 2 hours; drafting room, 4 hours. T. Th., 5, 6, 7.

423. REINFORCED CONCRETE
Spring, 4 Hours
Design of retaining walls and tanks. Prerequisite: Reinforced Concrete 422. Recitation, 2 hours; drafting room, 4 hours. T. Th., 5, 6, 7.

431. SEWERAGE
Fall, 5 Hours
General course on sewerage system and disposal of sewerage. Prerequisite: Hydraulics 322. Daily, 2.

432. WATER SUPPLY
Winter, 5 Hours
Requisites of a water supply, quality of water, collecting and distributing works, studies of rainfall and runoff, works for treating water. Theory of dams. Prerequisite: Hydraulics 322 and Sewerage 431. Daily, 2.

433. HYDRAULIC MACHINERY
Spring, 5 Hours
Theory and design of reciprocating pumps, centrifugal pumps and hydraulic turbines. Prerequisite: Hydraulics 322. Daily, 3.

441. FINANCIAL ENGINEERING
Fall, 3 Hours

442. FOUNDATIONS
Winter, 3 Hours
A descriptive course dealing with pile foundations, pile driving, pile sheeting, cofferdams, open and pneumatic caissons, open wells, types of piers and abutments and underpinning. Prerequisite: Reinforced Concrete 421. M. W. F., 4.

443. ENGINEERING LAW
Spring, 3 Hours
A general course dealing with contracts, agency, mechanic's liens, negotiable instruments, and workmen's compensation.
ELECTRICAL ENGINEERING

101. A. I. E. E. Student Branch Meetings
Fall, Winter and Spring Quarters. Presentation of talks and papers by student members. Participation in conducting the Ohio Northern Student Branch of the American Institute of Electrical Engineers.

123. Elementary Electric Machines
Spring, 5 Hours
Introductory or survey course for all engineering students. The electric and magnetic circuit, D. C. and A. C. generators and motors as well as transformers, storage batteries and illumination will be treated. Prerequisite: Physics 106. Daily, 3.

301. Elementary Alternating Currents
Fall, 5 Hours
A comprehensive survey of the generation, transmission, distribution, and use of alternating current power. The theory and characteristics of alternating current circuits, machines and protective apparatus are studied. Prerequisite: Elementary Electric Machines 213. M. W. F., 5.

311. Alternating Current Circuits
Fall, 5 Hours
A fundamental course in alternating current circuit theory. Vector representation, the calculation of impedance in series and parallel circuits, polyphase circuits, and elementary transients are studied. Prerequisite: Elementary Electric Machines 213. M. T. W. Th., 1; laboratory, T. Th., 6.

312. Alternating Current Machines
Winter, 5 Hours
The theory, characteristics and control of transformers; induction motors, synchronous motors, converters, and alternating current generators. Prerequisite: Elementary Electric Machines 213. M. T. W. Th., 4; laboratory, T. Th., 6.

313. Electrical Transmission
Spring, 5 Hours
This is a course in the electrical transmission of energy. Overhead and underground systems and high voltage phenomena. Prerequisite: Alternating Current Circuits. M. T. W. Th., 4; laboratory, T. Th., 6.

321, 322, 323. Shop Projects
Fall, Winter, Spring, 1 Hour
Required for graduation. Practical projects involving calculation, drafting, engineering judgment and skill in construction or repair work. These projects may vary from armature winding and motor repairing to the design and construction of laboratory apparatus. This course involves no class room or text book work and the course is usually covered in one hour per quarter for three quarters. Individual assignments are made to each student. M. T. W. Th., 6-8.

411. Direct Currents
Fall, 5 Hours
This is a thorough course in the theory, characteristics, application and control of direct current circuits and machinery. Prerequisite: Elementary Electric Machines 213. M. T. W. Th., 1; laboratory, T. Th., 6.

412. High Frequency Currents
Winter, 5 Hours
This is a course in the theory and calculation of circuits and apparatus performance at communication frequencies. Prerequisite: Electrical Transmission 313. M. T. W. Th., 4; laboratory, T. Th., 6.

413. High Frequency Currents
Spring, 5 Hours
This is a continuation of the above course involving the mathematical and experimental analysis of equipment characteristics and circuit performance at radio frequencies. Prerequisite: High Frequency Currents 412. M. T. W. Th., 4; laboratory, T. Th., 6.
421. ILLUMINATION  

422. ELECTRICAL MACHINE DESIGN  
A course in the detailed electrical calculation of direct current generators and controllers. Prerequisite: Direct Currents 411. Recitations, M. T. W. Th., 5.

423. ELECTRICAL MACHINE DESIGN  
The electrical design of alternating current generators, motors and transformers. Prerequisite: Alternating Current Machines 312. M. W. F., 4.

431. ELECTRONICS  
This is a course in the theory of electronic flow in vacuum tubes. Characteristics and application of newer types of tubes. Amplifiers, modulators, oscillators and detectors. Prerequisite: Elementary Alternating Currents 301. M. W. F., 5.

432. ELECTRONIC CIRCUITS  
A continuation of Electronics 431 with the application of vacuum tubes to more involved circuits. It will include the further study of Amplifiers, Modulators, Oscillators, Detectors, and their use in Audio and Radio Frequency Circuits. Also various Industrial Control Circuits will be studied.

441, 442. ADVANCED ELECTRICAL LABORATORY  
Fall, Winter, 3 Hours  
Elective in the senior year. Special laboratory problems and investigations more intricate and advanced than included in the required courses. Minor research projects may be undertaken. Hours to be arranged to suit balance of schedule.

451. RADIO FUNDAMENTALS  
Fall, 5 Hours  
Fundamentals of circuits and phenomena in radio communication apparatus. Audio and radio-frequency amplification, transmitting and receiving circuits.

452. TRANSIENT CIRCUITS  
Winter, 5 Hours  
Circuits involving capacity, resistance and inductances in various combinations, and their relationship to complex wave forms.

MECHANICAL ENGINEERING

101. A. S. M. E. STUDENT BRANCH MEETING  
1/2 Hour  
Fall, Winter and Spring Quarters. Professional seminar meetings of the Student Branch of the American Society of Mechanical Engineers to hear lectures by prominent engineers, to read and discuss papers presented by members of the Branch and to gain some experience in conducting such meetings.

111. ENGINEERING DRAWING  
Fall, Winter, 4 Hours  
Use of instruments, applied geometry, lettering, orthographic projection and pictorial drawing. Ten hours drafting work each week. Daily, 1, 2; Daily, 3, 4; M. W. F., 6, 7, 8.

112. ENGINEERING DRAWING  
Winter, 4 Hours  
Developments, intersections, perspective and working drawings. Prerequisite: Engineering Drawing 111. Ten hours work in drafting room each week. Daily, 1, 2; Daily, 3, 4; M. W. F., 6, 7, 8.
113. Engineering Drawing  
Descriptive geometry, advanced orthographic projections, problems of point, line, plane, and curved surfaces. Shades and shadows. Prerequisite: Engineering Drawing 112. Recitations, 3 hours. Six hours drafting room work each week. Daily, 1, 2; Daily, 3, 4; M. W. F., 6, 7, 8.

114. Engineering Drawing  
A course in technical drawing designed for chemical engineering students. One recitation and three two-hour laboratory periods each week. Prerequisite: Engineering Drawing 113. Time to be arranged.

115. Engineering Drawing  
Primarily intended for students majoring in Industrial Arts. Additional work in isometric, oblique, perspective drawings, charts, graphs, and other figures. Time to be arranged.

311. Thermodynamics  

312. Steam Power Plants  
A study of the combustion, handling and storage of fuel, and of steam generating machinery, including boilers, stokers, steam engines, and condensers. Prerequisite: Physics 105 and Thermodynamics 311. M. T. W. Th., 3.

313. Steam Power Plants  
A continuation of Steam Power Plants 312 with consideration given to complete installations, the cost of power, typical specifications and the power test codes. M. T. W. Th., 2.

321. Mechanical Laboratory  
Calibration of instruments, use of planimeter, study of engine indicators and their use, determination of steam quality, approximate coal analysis, heating value of coal by use of bomb calorimeter, flue gas analysis, testing of lubricating oils for flash point, fire point, and viscosity. Prerequisite: Thermodynamics 311. T. Th., 5, 6.

322. Mechanical Laboratory  
Boiler evaporative test, engine indicator and brake horsepower tests, indicator card analysis, efficiency tests of injector, electric motor, ventilating fan, centrifugal pump and automobile motor. Prerequisite: Mechanical Laboratory 321. T. Th., 6, 7.

323. Machine Design  

332. Mechanism  
Mechanisms, motion and velocity, kinematic chains, instantaneous centers, velocity diagrams, parallel and straight line motion, cams, gearing, bevel gears, gear trains, belting and intermittent motions. Daily, 5.

333. Machine Shop  
Bench work in filing, chipping, and fitting. Machine work in threading, turning, boring, drilling, shaping, tool grinding. M. W. F., 6, 7, 8.

334. Advanced Machine Shop  
Elective in the senior year. Special type of machine work more intricate and advanced than included in the required course. Minor problems in machine design may be worked out in this course. Laboratory hours to be arranged to suit balance of schedule. Prerequisite: Machine Shop 333.
324. **Dynamics**  
Winter, 3 Hours  
Friction, rectilinear and rotary motion, kinetics of bodies under uniform and variable rectilinear acceleration, uniform and non-uniform rotation of bodies, work, energy, power, momentum, impulse, impact. Prerequisite: Physics 213.

411. **Metallurgy**  
Fall, 4 Hours  
The manufacture of pig iron, wrought iron, and steel, mechanical treatment of steel, iron and steel founding, physical and chemical constitution of iron and steel, alloy metals and metallography. Prerequisite: Chemistry 103. M. T. W. Th., 4.

412. **Machine Design**  
Winter, 4 Hours  
Complete design and detail of machine units. M. T. W. Th., 4.

421. **Gas and Oil Engines**  
Winter, 5 Hours  
Liberation of heat energy, combustion, engine burning gas, kerosene and gasoline, semi-Diesel and Diesel engines, automobile engines, carburetion, ignition and testing. Prerequisites: Thermodynamics 311. Daily, 3.

422. **Steam Turbines**  
Fall, 4 Hours  
Nozzle and blade design, mechanical losses, impulse turbine, reaction turbine, impulse reaction turbine, governing economics of turbine operation, and the gas turbine. Prerequisite: Thermodynamics 311. M. T. W. Th., 2.

423. **Gas Engine Design**  
Spring, 5 Hours  
Design of gas or oil engine. Complete calculations and detail drawings required of each member of the class. Prerequisite: Gas and Oil Engines 421, and Machine Design 323. Daily, 4.

431. **Shop Projects**  
Fall, 1 Hour  
Practical projects involving calculation, design, drafting, engineering judgment and skill in construction or repair work. The course involves no classroom or textbook work and is covered in one hour per week in the Fall quarter.

432. **Power Plant Operation**  
Winter, Spring, 1-5 Hours  
Practical work in the operation and maintenance of the University Power Plant. Prerequisite: Steam Power Plants 312 and 313. Daily 7:00 a. m. to 5:00 p. m.

442. **Electric Welding**  
Winter, 1-5 Hours  
The uses and principles of construction of arc welding equipment. Actual operation of arc welding and spot welding machines, including a study of lap, butt and perpendicular welding. Hours to be arranged.

443. **Heating, Ventilating and Air Conditioning**  
Spring, 5 Hours  
Heating and ventilation. Heat losses from buildings, methods of heating, boilers, radiators, and accessories, steam systems, hot water systems, automatic temperature control, hot air furnace heating, fan systems, air washers, and air conditioning. Prerequisite: Thermodynamics 311. Daily, 6.

501. **Engineering Practice Work**  
Summer, 5 Hours  
This summer practice work is required of all students in the course of Chemical Engineering. It is elective in other courses. The purpose of the course is to acquire the point of view of labor by personal contact. The student must keep notes and pass a creditable examination some time during the following Fall quarter. Work will be acceptable providing it is shop or factory experience and is of ten weeks' duration.

*It is our hope that satisfactory arrangements may be completed with the Veterans' Administration and the Ada Air Service, Inc., whereby instruction may be offered to students who desire this service and who are entitled to same under the G. I. Bill of Rights.*
COLLEGE OF PHARMACY

Rudolph Henry Raabe
Dean

History

The College of Pharmacy of Ohio Northern University had its beginning in the departments of Science and Medicine. Following a passage of law in Ohio in 1884, which required registration with the Ohio Board of Pharmacy of all who wished to engage in the practice of the profession, Pharmacy was changed from a sub-department to a separate and distinct division of the university.

In 1885 the courses of study covered a period of thirty weeks, three terms of ten weeks each. From time to time the requirements for admission, the courses of study and facilities for instruction have been increased. These changes are concurrent with the progress in medical, chemical, pharmaceutical, health, and the allied sciences.

Graduates of the College of Pharmacy enjoy broad and liberal recognition.

Purpose

This College of Pharmacy aims to prepare men and women to meet not only the legal requirements of the profession but also the increasing public demand for educated and trained pharmacists.

Through organized courses of study, instruction is given in the sciences pertaining to the selection, standardization, preservation, and dispensing of drugs, medicines, and chemicals used in the promotion of personal and public health, and in the service of the pharmacist to the public,
to the medical practitioners, and to the profession. Majors are offered in biology, chemistry, pharmacology, and pharmacy.

A knowledge of the business methods involved in the successful distribution of medicinal materials is essential to the successful pursuit of the profession. Through a series of courses in business administration and drug store business methods, the student is given excellent opportunity to elect courses suited to his particular needs in this field.

LABORATORIES AND EQUIPMENT

In addition to the general biological, chemical, and physical laboratories of the University, the College of Pharmacy has three pharmaceutical and dispensing laboratories. The desk arrangement is such as to afford the student every facility for complete and thorough work, and the tables are supplied with an entire outfit of apparatus, including storing closet.

Each individual locker in the pharmaceutical laboratories is equipped with apparatus and accessories necessary to do practice and experimental work in the courses offered, covering the entire range from the introductory courses for freshmen to the advanced courses in drug assay and the compounding of medicines. The practice dispensary laboratory is equipped with tables made by one of the leading drug store fixture manufacturers, and each table is equipped with a complete set of such apparatus as is needed in extemporaneous compounding and dispensing.

There are three chemical laboratories: General Inorganic, Organic, and Analytical. Each laboratory is equipped with individual lockers and with the necessary apparatus and supplies to do modern work in the courses offered. Chainomatic balances are the predominating type of analytical balances used.

The pharmacognosy laboratory is equipped with tables, compound microscopes, microtome, projection lantern, and accessories.

The Student Health Service Dispensary is administered by the registered pharmacist on the staff of the College of Pharmacy. Qualified junior and senior pharmacy students may be assigned to the pharmacists in charge for instructions and actual dispensary practice.

LIBRARY

Reference books and periodicals on pharmacy are located in the departmental library in the Dukes Memorial Building. The facilities of the general library are also at the disposal of pharmacy students.
Admission

Candidates who are at least seventeen years of age and of good moral character may apply for admission upon the following plans:

1. Certificate. Evidence of the satisfactory completion of four years of high school work or its equivalent and a certificate of preliminary education issued by the Entrance Examiner of the Ohio Board of Pharmacy. Blanks for these purposes may be had by addressing the Ohio Northern University Entrance Examiner.

2. Advanced Standing. A student desiring to transfer from another college must present a transcript of record and a certificate of honorable dismissal from the college he is leaving. He should submit a catalogue of his college. Full credit will be given for work satisfactorily completed in recognized institutions of higher learning, provided such work is parallel to the requirements for graduation in this institution.

Advanced credit is given for not more than 135 quarter hours (90 semester hours) exclusive of physical education.

Persons who meet the requirements for admission as indicated in the preceding paragraphs are issued a Permit to Enter the College of Pharmacy. To enter any of the regular courses of study the candidate, after being granted a Permit to Enter, must prepare a schedule of studies with the aid of an adviser and approval of the Dean, and pay tuition and fees as stated elsewhere in this catalogue.

To be eligible for admission to the Ohio examination for registered pharmacist, the candidate must be a graduate of a recognized College of Pharmacy, have at least one year of drug store experience under the direction of a registered pharmacist after registration with the State Board of Pharmacy as an apprentice, a citizen of the United States of America or possess his first papers toward citizenship, and at least twenty-one years of age. Citizenship is not a prerequisite to admission to a College of Pharmacy.

Students who are entitled to advanced standing may enter at the time approved by the Dean. Write for further information.

Classification

The minimum requirements for sophomore standing are 42 credit hours and a point average of 0.5; for junior standing, 93 credit hours and a point average of 0.7; for senior standing, 144 credit hours and a point average of 0.9.
Requirements for Graduation

Every person upon whom a degree is conferred must be of good moral character; satisfactorily complete all prescribed work; spend the last year in resident study in this college; have as many quality points as scheduled hours, and be present at the commencement exercises unless officially excused. One hundred and ninety-six hours including physical education, are required for graduation.

The Four-Year Curriculum

The curriculum is flexible enough to allow preparation in specialized activities of the profession. In addition to a group of courses which are constants for all candidates for the degree of Bachelor of Science in Pharmacy, several groups of electives are offered. Courses designated as constants are required. A sufficient number of credit hours must be chosen from the elective group to bring the total number of credit hours up to the requirement for graduation. All subjects are assigned in logical sequence.

Students who choose to major in the natural sciences may be assigned to courses in German or French, or both, in order to acquire ability to read scientific texts and periodicals published in these languages. Those who elect courses in economics and business administration may choose the language which best serves their needs. All elections are subject to the approval of the Dean.

All colleges holding membership in the American Association of Colleges of Pharmacy require for graduation the satisfactory completion of not less than four full college years or twelve quarters.

Not less than one hundred ninety-six credit hours, including physical education, are to be selected from the schedule below for graduation.

Required Basic Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 101, 102, 103, 206, 207, 208, or the equivalent</td>
<td>30 Hours</td>
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<tr>
<td>English 101, 102, 102A or the equivalent</td>
<td>9 Hours</td>
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<tr>
<td>Mathematics</td>
<td>9 Hours</td>
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<tr>
<td>Physics</td>
<td>9 Hours</td>
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Required Professional Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Pharmaceutical Chemistry 201, 202, 203, 251, 252, 253</td>
<td>24 Hours</td>
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<tr>
<td>Pharmacy 101, 103, 104, 105, 151, 152, 153, 203, 251, 252, 253, 254, 299 and Electives</td>
<td>45 Hours</td>
</tr>
<tr>
<td>Pharmacognosy 101, 102, or 103, or the equivalent</td>
<td>6 Hours</td>
</tr>
<tr>
<td>Pharmacognosy 151, 152, 153</td>
<td>15 Hours</td>
</tr>
<tr>
<td>Pharmacology 201, 202, 203, 211, 222, 223</td>
<td>26 Hours</td>
</tr>
<tr>
<td>Zoology 103 or the equivalent</td>
<td>3 Hours</td>
</tr>
</tbody>
</table>
Ohio Northern University

Electives in the Basic Subjects

French or German ......................................................... 9 Hours
Economics ................................................................. 9 Hours
Biology ................................................................. 9 Hours
Botany ................................................................. 9 Hours
Zoology ................................................................. 9 Hours

Electives in the Professional and Applied Subjects

Accounting ............................................................. 6 Hours
Biological Assaying .................................................. 3 Hours
Business Methods .................................................... 9 Hours
Chemistry .............................................................. 20 Hours
Pharmacy ............................................................... 10 Hours
Pharmacognosy ....................................................... 5 Hours
Pharmacology ......................................................... 5 Hours

Four-Year Course in Pharmacy
(Effective July 1, 1940)

Degree: Bachelor of Science in Pharmacy

First Year

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
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<tbody>
<tr>
<td>Physical Education 101</td>
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<td>Mathematics 103a</td>
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<td>or Biology 103 or 109</td>
</tr>
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<td>Pharmacy 101</td>
<td>Pharmacy 103</td>
<td>Pharmacy 104</td>
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Second Year

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<thead>
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<th>FALL QUARTER</th>
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<tr>
<td>Physical Education 104</td>
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<td>Physical Education 106</td>
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<tr>
<td>Chemistry 206</td>
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<tr>
<td>Pharmacognosy 151</td>
<td>Pharmacognosy</td>
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<tr>
<td>Physics 109</td>
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Third Year

<table>
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<tbody>
<tr>
<td>Pharmaceutical Chemistry 201</td>
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<td>Pharmaceutical Chemistry 203</td>
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<tr>
<td>Pharmacology</td>
<td>Pharmacology</td>
<td>Pharmacology (Bacteriology and Health) 223</td>
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<tr>
<td>(Physiology) 211</td>
<td>(Bacteriology) 222</td>
<td>Pharmacy (Law) 254</td>
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<tr>
<td>Pharmacy (Business) 203</td>
<td>Pharmacy (History) 105</td>
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<tr>
<td>Pharmacology 201</td>
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FALL QUARTER
Pharmaceutical Chemistry
251
Pharmacy (Dispensing)
251
Electives
3 to 8

WINTER QUARTER
Pharmaceutical Chemistry
252
Pharmacy (Dispensing)
252
Electives
3 to 8

SPRING QUARTER
Pharmaceutical Chemistry
253
Pharmacy (Dispensing)
253
Pharmacy (Survey)
299
Electives
3 to 5

Additional credit hours may be selected each quarter of the Senior year from the following subjects:

FALL QUARTER
Pharmaceutical Chemistry
(Biochemistry) 261
Pharmacy (Manufacturing)
204
Pharmacy (NNR) 261
Pharmaceutical Chemistry
(Urinalysis) 271

WINTER QUARTER
Pharmaceutical Chemistry
(Biochemistry) 262
Pharmacy (Manufacturing)
205
Pharmacy (NNR) 262
Pharmaceutical Chemistry
(Urinalysis) 271

SPRING QUARTER
Pharmaceutical Chemistry
(Biochemistry) 263
Pharmacy (Manufacturing)
206
Pharmaceutical Chemistry
(Urinalysis) 271
Physical Education
(First Aid) 158

A Course in Pharmacy for Students Who Have Completed Their Pre-Professional Studies

The professional courses in pharmacy are based upon satisfactory accomplishments in certain basic subjects. The prospective pharmacy student who has completed one or more years of work in a recognized College of Liberal Arts must submit a transcript of his credits before he can be admitted to advanced standing.

The required basic subjects which have been recommended by the American Association of Colleges of Pharmacy as being most advantageous to the successful pursuit of the professional and applied courses of study are botany, chemistry, economics, English, mathematics, physics, physiology, and zoology. Certain basic courses in bacteriology, business, chemistry, foreign language, public health studies, and zoology are listed as optional and will be given careful consideration in the evaluation of credits for advanced standing. The minimum length of time required to complete the professional and applied courses is three years.

Persons who are admitted to advanced standing on pre-professional credits will pursue the program as outlined. Full credit will be given for the courses which are parallel with the established requirements.

Degree: Bachelor of Science in Pharmacy

To be admitted to this schedule of courses, the candidate must have completed at least thirty-six semester hours or forty-eight quarter hours in the prescribed pre-pharmacy subjects.
**Sophomore Year**

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<th>FALL QUARTER</th>
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<th>SPRING QUARTER</th>
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<td>Pharmacy 151</td>
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**Junior Year**

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<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Pharmaceutical Chemistry 201</td>
<td>Pharmaceutical Chemistry 202</td>
<td>Pharmaceutical Chemistry 203</td>
</tr>
<tr>
<td>Pharmacology 211</td>
<td>Pharmacology 222</td>
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<td>Pharmacy 203</td>
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<td>Pharmacy 254</td>
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<tr>
<td>Pharmacology 201</td>
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**Senior Year**

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<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Pharmacy 251</td>
<td>Pharmacy 252</td>
<td>Pharmacy 253</td>
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<td>Pharmaceutical Chemistry 251</td>
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<td>Pharmacology (Urinalysis) 271</td>
<td>Pharmacology 299</td>
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</table>

Additional credit hours may be selected each quarter of the Senior year from the following subjects:

<table>
<thead>
<tr>
<th>FALL QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<tbody>
<tr>
<td>Pharmaceutical Chemistry Bio-) 261</td>
<td>Pharmaceutical Chemistry (Bio-) 262</td>
<td>Pharmaceutical Chemistry (Bio-) 263</td>
</tr>
<tr>
<td>Pharmacy (Manufacturing) 204</td>
<td>Pharmacy (Manufacturing) 205</td>
<td>Pharmacy (Manufacturing) 206</td>
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<tr>
<td>Pharmaceutical Chemistry (Urinalysis) 271</td>
<td>Pharmaceutical Chemistry (Urinalysis) 271</td>
<td>First Aid</td>
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<td>3 to 5</td>
<td>3 to 5</td>
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</tbody>
</table>

**Description of Courses**

For detailed description of the basic pre-professional courses such as Freshman English, Biology, Chemistry, and Mathematics see these departments as listed elsewhere in this catalogue.

**BIOLOGY**

One of the specific aims of this department is to prepare students for the study of medical sciences, and to give them foundation courses to qualify them for entrance into clinical and research laboratories.
CHEMISTRY

All students who are candidates for graduation from the College of Pharmacy will be required to complete Chemistry 101, 102, 103, 206, 207, and 208, or the equivalent. Those wishing to work in chemistry beyond the constants as listed for all pharmacy students should see their adviser.

Additional courses in chemistry may be elected, subject to the recommendation of the student’s adviser and approval of the Dean. For descript- mendation of the student’s adviser and approval of the Dean.

PHARMACEUTICAL CHEMISTRY

201. Drug Assay


Mr. Smith

202. Drug Assay

A continuation of Pharmaceutical Chemistry 201. In addition some attention is directed to the physical methods employed in the testing of certain classes of drugs. Lectures and recitations, T. Th., 4, 24 hours; Laboratory, M. W. F., 2, 3, 4. 108 hours.

Mr. Smith

203. Drug Assay

A study of official methods of assay of crude drugs and preparations of crude drugs. Appropriate laboratory work is carried out to illustrate the various methods employed. Lectures and recitations, T. Th., 4, 24 hours; Laboratory, M. W. F., 2, 3, 4. 108 hours.

Mr. Smith

251. Inorganic Pharmaceutical Chemistry

A study of the preparation, reactions, solubility, identity and purity of the inorganic substances of the United States Pharmacopoeia and National Formulary. The laboratory work consists of preparation of a variety of substances and the application of the various official tests for purity and identity. Lectures and recitations, M. W. F., 1, 36 hours; Laboratory, T. Th., 1, 2, 3, 72 hours.

Mr. Smith

252. Organic Pharmaceutical Chemistry

A study of the preparation, reactions, solubility, identity and purity of the synthetic organic substances of the United States Pharmacopoeia and National Formulary. Laboratory work is carried out to illustrate the various topics mentioned, stress being placed on the processes involved in the manufacture of synthetic drugs. Lectures and recitations, M. W. F., 1, 36 hours; Laboratory, T. Th., 1, 2, 3, 72 hours.

Mr. Smith
253. **Natural Drug Principles**
Spring, 3 to 5 Hours
A study of the alkaloids, glucosides, saponins and allied substances occurring in crude drugs. Emphasis is placed on the relationship of chemical structure and pharmacological action. The laboratory work includes separation and identity of representative examples of the various principles. Lectures and recitations, M. W. F., 1, 36 hours; Laboratory, T. Th., 1, 2, 3, 72 hours.

Mr. Smith

261. **Biochemistry**
Fall, 3 Hours
An introductory course on the chemistry of fats, proteins, and carbohydrates. Prerequisite: Organic chemistry and quantitative chemistry or its equivalent. Lectures and recitations. M. W. F., 5, 36 hours.

Mr. Smith

262. **Biochemistry**
Winter, 3 Hours
A course in the chemistry of digestion and metabolism. Prerequisite: Biochemistry 261. Lectures and recitations. M. W. F., 5, 36 hours.

Mr. Smith

263. **Biochemistry**
Spring, 3 Hours
The chemistry of vitamins, sterols, hormones, and enzymes. Prerequisite: Biochemistry 262. Lectures and recitations, M. W. F., 5, 36 hours.

Mr. Smith

271. **Urinalysis**
Any Quarter, 2 or 3 Hours
The principles and applications of urinalysis. The laboratory work includes the analysis of samples for the Health Service of the University. Laboratory, T. Th., 5, 6, 7, 36 hours.

275. **Title Will Depend Upon the Problem**

Staff

**Economics and Business Administration**

Ability to buy, sell and organize business efficiently is one of the essentials of the profession of pharmacy. General courses in the principles of accounting, economics, and business organization may be elected by those who wish to acquire a broader knowledge of sound business procedure.

Pharmacy 203 is a course in commercial pharmacy dealing specifically with drug store business methods and is required.

**English**

The pharmacist must use both oral and written English. In order to communicate clearly and adequately with the wholesaler, manufacturer, medical practitioner, layman, state boards, the government, and to prepare

*Not given in 1947-48*
papers for clubs, articles for magazines and local newspapers, or advertising, the ability to speak and write English is essential.

For detailed description of the basic pre-professional courses such as Freshman English, Biology, Chemistry, and Mathematics see these departments as listed elsewhere in this catalogue.

HEALTH AND PHYSICAL EDUCATION

Some form of physical activity is required of all students during the first two years of residence in the University. The nature of the work will depend upon the needs of the individual as revealed by a careful examination.

The pharmacist should learn the fundamentals of personal and general hygiene that he may be able to maintain a high degree of efficiency during and after college life and to assist in the promotion of public health as outlined by the United States Public Health Service.

Courses 101, 102, 103, 104, 105, 106, 115, 152, and 258 as given in the department of Health and Physical Education and Bacteriology 222 and Health 223 as given in the Department of Pharmacology are of special interest to the pharmacy student.

MATHEMATICS

Inaccurate computations in pharmacy may lead to serious results. A course in mathematics especially designed for the student of pharmacy is required of all candidates for graduation. It includes the mathematical processes involved in operative pharmacy and in the compounding of prescriptions. A limited amount of the mathematics involved in commercial pharmacy is included. This course is listed and described in the Department of Pharmacy, course 104. In addition to Pharmacy 104 at least nine credit hours in college mathematics or its equivalent are required.

Those students who desire courses in chemistry beyond the prescribed constants may take additional courses in mathematics, subject to the recommendation of the student’s adviser and approval of the Dean.
151. **Crude Drugs**

A study of crude botanical drugs official in the latest revisions of the United States Pharmacopoeia and the National Formulary. The subjects of study are drugs obtained from plants of the lower groups up to and including drugs from several of the dicotyledonous families. Nomenclature, definitions, history, sources, commercial collection and preparation, geographical distribution, physical and chemical characteristics and constituents, properties, adulteration, preservation, and identification are the chief topics of discussion. Macroscopic study is supplemented in the case of important drugs by microscopic examination of the powdered or thinly sectioned drug. Prerequisite: College Botany or Pharmacognosy 102. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours. **Mr. Dobbins**

152. **Crude Drugs**

In this course, study of the official crude drugs of the dicotyledons is continued. Prerequisite: College Botany or Pharmacognosy 102. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours. **Mr. Dobbins**

153. **Crude Drugs**

In this course the study of dicotyledonous crude drugs is concluded. The remainder of the time is devoted to the study of the animals drugs of the United State Pharmacopoeia and the National Formulary. Prerequisite: College Botany or Pharmacognosy 103. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours. **Mr. Dobbins**

201. **Histology of Crude Drugs**

A study of the histology of the crude botanical drugs, including microscopic identification and detection of adulterants. Prerequisite: College Botany or Pharmacognosy 101, 102, 103. Lectures. Credit and hours to be arranged. **Staff**

275. **Pharmacognosy Problems**

A course of special problems along advanced lines in the field, open to juniors and seniors who have shown ability to carry them to a satisfactory completion. Hours and time of work to be arranged. **Staff**

**PHARMACOLOGY**

In order that the pharmacist may be better prepared to discuss certain phases of the dynamics of drugs with members of the various professional groups engaged in health service and to have a better background for the critical examinations of prescriptions, a knowledge of pharmacology and its allied branches is a prime essential. The following courses of study are designed to meet these fundamental requirements.

201. **Pharmacology**  
Fall, 5 Hours

202. **Pharmacology**  
Winter, 3 to 5 Hours

203. **Pharmacology**  
Spring, 3 to 5 Hours

The study of the physiological action, therapeutics, toxicology, and dosage of accepted medicinal agents, based upon a therapeutic classification. Laboratory work is performed by students in groups of fours or sixes. Lectures M. W. F., 6, 36 hours; laboratory, demonstrations and recitations, T. Th., 5, 6, 48 hours (for 5 hour course). **Mr. Raabe**
151. **Crude Drugs**  
**Fall, 5 Hours**  
A study of crude botanical drugs official in the latest revisions of the United States Pharmacopoeia and the National Formulary. The subjects of study are drugs obtained from plants of the lower groups up to and including drugs from several of the dicotyledonous families. Nomenclature, definitions, history, sources, commercial collection and preparation, geographical distribution, physical and chemical characteristics and constituents, properties, adulteration, preservation, and identification are the chief topics of discussion. Macroscopic study is supplemented in the case of important drugs by microscopic examination of the powdered or thinly sectioned drug. Prerequisite: College Botany or Pharmacognosy 102. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours.  
Mr. Dobbins.

152. **Crude Drugs**  
**Winter, 5 Hours**  
In this course, study of the official crude drugs of the dicotyledons is continued. Prerequisite: College Botany or Pharmacognosy 102. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours.  
Mr. Dobbins.

153. **Crude Drugs**  
**Spring, 5 Hours**  
In this course the study of dicotyledonous crude drugs is concluded. The remainder of the time is devoted to the study of the animals drugs of the United State Pharmacopoeia and the National Formulary. Prerequisite: College Botany or Pharmacognosy 103. Lectures and recitations, M. W. F., 2, 36 hours; Laboratory, M. W., 7, 8, 48 hours.  
Mr. Dobbins.

201. **Histology of Crude Drugs**  
**Any Quarter, 3 to 5 Hours**  
A study of the histology of the crude botanical drugs, including microscopic identification and detection of adulterants. Prerequisite: College Botany or Pharmacognosy 101, 102, 103. Lectures. Credit and hours to be arranged.  
Staff.

275. **Pharmacognosy Problems**  
**Any Quarter, 1 to 5 Hours**  
A course of special problems along advanced lines in the field, open to juniors and seniors who have shown ability to carry them to a satisfactory completion. Hours and time of work to be arranged.  
Staff.

**PHARMACOLOGY**

In order that the pharmacist may be better prepared to discuss certain phases of the dynamics of drugs with members of the various professional groups engaged in health service and to have a better background for the critical examinations of prescriptions, a knowledge of pharmacology and its allied branches is a prime essential. The following courses of study are designed to meet these fundamental requirements.

201. **Pharmacology**  
**Fall, 5 Hours**

202. **Pharmacology**  
**Winter, 3 to 5 Hours**

203. **Pharmacology**  
**Spring, 3 to 5 Hours**

The study of the physiological action, therapeutics, toxicology, and dosage of accepted medicinal agents, based upon a therapeutic classification. Laboratory work is performed by students in groups of fours or sixes. Lectures M. W. F., 6, 36 hours; laboratory, demonstrations and recitations, T. Th., 5, 6, 48 hours (for 5 hour course).  
Mr. Raabe
211. **Physiology**  
Fall, 5 Hours  
A brief course in human physiology preparatory to the study of the action of drugs. The digestive, circulatory, respiratory, and nervous systems are the chief subjects considered. Lectures and recitation, M. W. F., 1, 36 hours; laboratory, T. Th., 1 and 2, 48 hours.  
Mr. Hanna

222. **Bacteriology**  
Winter, 5 Hours  
A course in the fundamentals of bacteriology. The basic facts are studied and the essential technique practiced. To illustrate and give point to the general principles of the subject, particular attention is devoted to bacteria of economic importance, and especially to those causing disease. The value and use of antiseptics, germicides and disinfectants are studied in some detail. Lectures and recitations, M. W. F., 1, 36 hours; laboratory and demonstrations, T, Th., 1, 2, 48 hours.  
Mr. Dobbins, Mr. Smith or Mr. Hanna

223. **Bacteriology and Health**  
Spring, 5 Hours  
The outstanding human diseases are discussed in this course, together with modern biological methods of combating them. Toxins, anti-toxins, toxins, bacterins, vaccines, and other products of bacterial origin are studied. Prerequisite: Pharmacology 222, or a course in general bacteriology. Lectures and recitations, Daily 1, 60 hours.  
Mr. Hanna.

*251. Biological Assaying*  
3 to 5 Hours  
Attention is given to biological assay methods and standardization of the U. S. P. drugs that are most satisfactorily valued by this method. Lectures and recitations, 12 hours; laboratory, 96 hours. Time schedule to be arranged.  
Staff

275. **Pharmacology Problems**  
Any Quarter, 1 to 5 Hours  
A course of special problems open to students of advanced standing who have shown the ability to carry them to completion. Hours and time of work to be arranged.  
Staff

**PHARMACY**

101. **Fundamentals**  
Fall, 3 to 5 Hours  
This course is designed to give the student a good foundation for the further study of pharmacy. The aim is to acquaint the student with the reference books and literature used in pharmacy and to present the principles upon which pharmaceutical operations are based. Lectures and recitations, M. W., 1, 24 hours; laboratory, W. or F., 6, 7, 24 hours.  
Mr. Raabe

103. **Pharmaceutical Latin**  
Winter, 3 Hours  
A course covering such essentials of inflection and syntax as to familiarize the student with the etymology and construction of the nomenclature used in the United States Pharmacopoeia and National Formulary and to enable him to interpret prescriptions. Lectures and recitations,  
M. W. F., 1, 36 hours.  
Mrs. Accountius

104. **Pharmaceutical Calculations**  
Spring, 3 Hours  
A course in calculations pertaining to pharmacy. The student is taught current weights and measures, applications of proportion, allegation, specific gravity, specific volume, thermometer scales, percentage solutions, and elementary chemical problems common to pharmacy. Lectures  
Mr. Raabe.

* Not given in 1947-48
105. **History of Pharmacy**  
Winter, 3 Hours  
A survey of the ancient, medieval, and modern practices and ideals of the profession of pharmacy. This course is mainly cultural. Lectures and discussions. M. W. F., 5, 36 hours.  
Mr. Hanna.

151. **Pharmaceutical Preparations**  
Fall, 5 Hours  
A thorough study of the more simple preparations official in the latest U. S. P. and N. F. The chief topics of this course are mixtures, lotions, solutions, liniments, magmas, and other preparations of quite similar nature. Prerequisite: Pharmacy 101 and Chemistry 101, 102, and 103. Lectures and recitations, M. W. F., 3; laboratory T. Th., 2, 3, 4.  
Mrs. Accountius.

152. **Pharmaceutical Preparations**  
Winter, 5 Hours  
This course includes emulsions, ointment, suppositories, and powder type of pharmaceuticals official in the United States Pharmacopoeia and National Formulary. Prerequisite: Pharmacy 101, Chemistry 101, 102, and 103. Lectures and recitations, M. W. F., 3, 36 hours; laboratory, T. Th., 2, 3, and 4, 72 hours.  
Mrs. Accountius.

153. **Pharmaceutical Preparations**  
Spring, 5 Hours  
This course includes a study of pharmaceutical preparations made by extraction; tinctures, fluid-extracts, extracts, resins, and oleoresins. Prerequisite: Pharmacy 101, 151, and 152; Chemistry 101, 102 and 103; Pharmacognosy 151 and 152. Lectures and recitations M. W. F., 3; laboratory, T. Th., 2, 3 and 4, 72 hours.  
Mrs. Accountius.

203. **Business Methods**  
Fall, 3 Hours  
A course in drug store business methods. Attention is given to arrangement of fixtures and stock, sources of supplies, distribution to the physician, dentist, veterinarian, the public, hospitals, and to other phases of business essential to successful drug store management. Lectures and recitations, M. W. F., 5, 36 hours.  
Mrs. Accountius.

204. **Manufacturing**  
Fall, 3 Hours

205. **Manufacturing**  
Winter, 3 Hours

206. **Manufacturing**  
Spring, 3 Hours  
Manufacturing of official and nonofficial pharmaceuticals in quantities for use in the University Student Health Service. Some attention is given to commercial manufacturing problems. A limited number of senior students, under the direction of a registered pharmacist, will compound prescriptions written by the University physician. During the Spring quarter the student is required to visit the laboratory of at least one reputable pharmaceutical manufacturer and write a report. Prerequisite: Pharmacy 101, 151, 152, and 153.  
Staff.

251. **Prescriptions**  
Fall, 3 Hours

252. **Prescriptions**  
Winter, 3 Hours

253. **Prescriptions**  
Spring, 3 Hours  
Prescriptions, compounding of prescriptions and recipes, incompatibilities, and dispensing are the subjects in this course. Lectures and laboratory, M. W. F., 2, 3, 72 hours. Prerequisite: Pharmacognosy 151, 152, Chemistry 103 or 103a, Pharmacy 151, 152, 153.  
Mrs. Accountius.
PHARMACEUTICAL LAWS

A course in the federal, state and local acts, laws, and regulations governing the practice of Pharmacy and sale of potent and habit forming drugs. Lectures and recitations, M. W. F., 5, 36 hours.

254. PHARMACEUTICAL LAWS

SPRING, 3 HOURS

Mr. Raabe

NEW AND NON-OFFICIAL REMEDIES

261. NEW AND NON-OFFICIAL REMEDIES

FALL, 3 HOURS

Fall, 3 Hours

Mr. Raabe

262. NEW AND NON-OFFICIAL REMEDIES

WINTER, 3 HOURS

Winter, 3 Hours

Courses in the new and non-official remedies which have been accepted by the Council on Chemistry and Pharmacy of the American Medical Association as well as the newer medicinals and preparations of the leading manufacturers which have not been accepted by the Council. Lectures and recitations, M. W. F., 4, 36 hours.

275. PHARMACY PROBLEMS

ANY QUARTER

Minor investigations for qualified students. Credit and fee depend upon nature of work done.

Staff

299. ADVANCED SURVEY

SPRING, 3 HOURS

Spring, 3 Hours


Mr. Raabe

PHYSICS

It is impossible to comprehend many of the changes which occur in the manufacture of pharmaceutical preparations without having a knowledge of the fundamentals of the science of physics. Many of the fundamentals of his science are presented in the courses in chemistry, Pharmacognosy, and pharmacy. However, the student should arrange his schedule so as to include one year of college physics.
WARREN G. HARDING
COLLEGE OF LAW

Claude Westcoat Pettit
Dean

History

The College of Law was organized as a department of the University in 1885, and has been in continuous operation since that date. It numbers among its alumni and former students many of the most prominent lawyers in Ohio and other states. Its graduates have been successful beyond the average as candidates for admission to the Bar at the State Bar Examinations and as practitioners afterwards.

Affiliations

The College holds membership in the League of Ohio Law Schools, and is fully approved by the League.

Beginning Law Students

Law students who are commencing the study of law start at the beginning of the Fall quarter and will be able to continue for nine consecutive quarters, including summer quarters, until further notice. Only rarely will beginning students be admitted to the Winter or Spring quarters.

The right is reserved to make such changes in the curriculum and the order in which courses are given as may be necessary.

The curriculum herein presented for beginning students for the first three quarters in residence, is established for those who enter in the Fall quarter, and the indicated sequence of courses will be followed for all other students, so far as possible.
PURPOSE

The aim of its founders, continued through the ensuing years, was to afford an opportunity for students, both men and women, of limited means, to obtain a collegiate training in law, and by connection with the University to offer them the added opportunity for the general preliminary education indispensable to its successful study and practice. Tuition rates, therefore, are low and reasonable. The courses are planned primarily to train students for the practice of law, but they may also be pursued advantageously by anyone desiring to acquire a knowledge of the principles and history of law, either as part of a liberal education, or as part of the foundation for a business career.

Courses are offered in all subjects included in the Ohio Bar examination, as well as various electives.

In training students for the practice of law, the College of Law has four chief aims:

1. To inculcate a systematic and complete grounding in the history and fundamental principles of law, and a readiness and accuracy in the application of these principles to the complicated relations, rights and duties arising in modern society.

2. To impart a thorough and ready working knowledge of the common law and statute law (including the more important statutes and decided cases of Ohio), to the end that the young lawyer may be prepared to serve his clients efficiently.

3. To show the place, importance, and aims of the law in society.

4. To inculcate the principles of legal ethics and of the lawyer’s public responsibility, so that the young lawyer may be prepared to take his place as a trusted leader, counselor, and guide in his community.

SCHOOLS REPRESENTED

An ever increasing proportion of our law students have secured their pre-legal education at colleges and universities other than Ohio Northern University. Many of these are coming with the bachelor’s degree or its equivalent. Among the colleges and universities contributing to the pre-legal education of our students in the past are the following: Alfred Holbrook, Ashland College, Baldwin-Wallace, Bowling Green, Colgate, Defiance, Denison University, Depauw, Duquesne University, De Sales College, Fenn College, Geneva, Harvard, Heidelberg, Hillsdale, Hiram, John Carroll University, Kenyon, Kent State, Marshall College, Miami, Mis-
souri, Mt. Union, Muskingum College, Northwestern, Ohio University, Ohio State University, Ohio Wesleyan University, Pittsburgh, Purdue, Rio Grande, Swarthmore, Toledo University, University of Cincinnati, University of Dayton, University of Kentucky, University of Michigan, University of Southern California, University of Virginia, University of West Virginia, University of Wisconsin, Vincennes University, Virginia Military Institute, George Washington University, Washington and Lee University, Western Reserve University, Western State Teachers College, Wittenberg College, Wooster, Youngstown College and Yale University.

BUILDING AND EQUIPMENT

The College of Law is located in a handsome two story building, built of ornamental brick in the classical style, erected in the year 1923. This building was especially designed to meet the requirements of the College of Law, and contains classrooms, professorial offices, library, and reading rooms.

LIBRARY

The law library is up-to-date, modern, and well selected. It contains the reports of the courts of last resort of the States, the United States Supreme Court Reports, the Federal Reports, the Reporter System, a complete set of English reports, the more important series of special reports and selected cases, a collection of the latest editions of standard text books, leading legal periodicals, digests, the leading encyclopedias of law, and other works of reference. The library is accessible each week day, the students being allowed free access to the books.

The material included in the library complies with law library requirements of the American Bar Association.

METHODS OF INSTRUCTION

Instruction is based upon the case-book method. To the cases found in the case-book are added selected cases from Ohio and other jurisdictions. The lecture hour includes a thorough questioning of the students upon the cases studied and informal discussions by instructors and students upon the underlying and distinguishing principles illustrated by the cases.

ADMISSION

Candidates of good moral character may apply for admission upon the following plans:
1. **Certificate.** To enter the first year of law the requirements are (1) graduation from a first grade high school and (2) two full years of collegiate study (60 semester hours or 90 quarter hours exclusive of physical education, military science, and courses without definite intellectual content) in an approved college of liberal arts in accordance with the rules of that institution. It is further required that the scholarship average of the applicant must not be below the graduating average of the institution from which he comes.

A student desiring to enroll in the College of Law should cause to be sent to the University Entrance Examiner at least ten days prior to the beginning of the quarter, his transcript of collegiate work in duplicate. These papers must be on file, both for admission to the College of Law and for registration as a law student upon the rolls of the Supreme Court of Ohio. In no case can a deficiency in pre-law study be made up concurrently with the work of the College of Law.

2. **Advanced Standing.** Advanced credit is given for not more than two years of law study in residence at any reputable law school in the United States maintaining a three-year full-time course.

3. **Special Student.** Persons who are not candidates for a degree and who have sufficient education and experience to study law with profit may enter the College of Law as special students with the approval of the Dean, even though they cannot meet the entrance requirements for a degree. Any one desiring to enter as a special student or to secure fuller information in regard to preliminary education should write to the University Entrance Examiner or the Dean of the College of Law. Such special students will not be eligible for the bar examination in Ohio and many other states.

**Pre-Law and Arts-Law Courses**

The College of Liberal Arts offers favorable opportunities to the student in preparing for the study of law.

The Pre-Law course offered not only meets the requirements set by the Supreme Court of the State of Ohio as to the preliminary education that every student must have before beginning the study of law, but is especially planned to help the student to prepare properly for such an undertaking.

The Arts-Law course is designed for the student who desires the degree of Bachelor of Arts and the degree of Bachelor of Laws. By taking this
course, which extends over a period of six years, the student not only meets the requirements set by the Supreme Court of the State of Ohio but in addition thereto is entitled to receive the degrees indicated.

For further information about these courses, the student is referred to the Liberal Arts section of this catalogue.

**Graduation**

The degree of Bachelor of Laws is conferred on students who have completed satisfactorily a total of one hundred twenty-five quarter hours including all the prescribed courses and certain required courses for which no credit hours are given, or who have received credit therefore in accordance with the section entitled Advanced Standing, and who have studied in residence at this College for at least three quarters immediately preceding graduation, and who have at least one quality point average for every credit hour.

**General Regulations**

1. Students may select from the courses offered such work as they desire, with the approval of the Dean, not to exceed a maximum of 16 credit hours per quarter. Special students may not become candidates for a degree.

2. Hours above 16 are considered as excess and are subject to special tuition rates. Only in exceptional cases are regular students allowed excess hours.

3. In the section of the general catalogue dealing with Administration are found rules and regulations pertaining to chapel and class attendance, registration, and preregistration, government, withdrawing courses, warning and probation, eligibility for extra-curricular activities, examinations, grade marks, and quality points.

4. Expenses, tuition fees, living costs, and housing are likewise described in an earlier section of this catalogue.

5. The Board of Trustees and Faculty of the University reserve the right to make such changes as they deem necessary without published notice.

**Classification**

The minimum requirements for junior standing are 38 credit hours and a point average of 0.9; for senior standing, 80 credit hours and a point average of 0.9.
Ohio Northern University

Other Advantages

There are musical, debating, and dramatic societies and other organizations on the campus to which any student in the College of Law is eligible.

Summer School

The College of Law offers courses during the Summer School. Summer courses are of particular interest to those students who may desire to complete the work required for a degree in nine consecutive quarters. It is expected that the regular curriculum will be followed for the benefit of veteran students.

College of Law Curriculum

The work of the first year is all required. Second and third year courses are all required except those separately designated as electives, which are open to both second and third year students subject to the provision that a student may not elect to exceed fifteen hours in any quarter in which elective courses are open to him, unless approved by the Dean.

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Description of Courses

FIRST YEAR
(All Courses Required)

AGENCY
The nature and purpose of agency relation, parties, methods of creating the relationship, authority and capacity, the duties and liabilities arising from the relationship; also a consideration of workman's compensation legislation and other phases of the subject of master and servant. Case book to be announced.

COMMON LAW PLEADING
This course embraces a discussion of the nature and purposes of pleading, emphasizing the connection between pleading and the history and development of the Common Law. Keigwin, Cases On Common Law Pleading.

CONTRACTS I

CONTRACTS II
Fundamental courses dealing with the nature of a contract; the capacity of the parties, offer and acceptance; consideration, requisites of contracts under seal; the performance of contracts, including conditions and impossibility of performance; the discharge of contracts; rights of beneficiaries, joint and several contracts; assignment of contracts; illegal contracts and the statute of frauds. Shepherd, Cases and Materials on Contracts. (2nd Edition).

CRIMINAL LAW
This course treats of the theories of crime and punishment; the criminal act and mental element in crime; specific offenses at common law and as developed by statutes; appropriate defenses in relation to the specific crimes; parties. Harno, Cases and Materials on Criminal Law and Procedure (2nd Edition).

LEGAL BIBLIOGRAPHY
This course is required, but no credit is given for it toward graduation. The purpose is to give the student training in the use of law books and in finding the law. The course must be completed to the satisfaction of the instructor. Case book to be announced.

PERSONAL PROPERTY
This course deals with the distinction between real and personal property; of the title to personal property and its transfer by agreement and by operation of law; its use and liabilities arising therefrom. Bigelow, Cases On Personal Property (3rd Edition).

REAL PROPERTY I
This course treats of the historical origin of land law, tenure, seisin, the differentiation of estates in land, rights in air, water, easements, covenants running with the land, licenses, rents, waste and public rights. Bigelow, Cases on Rights in Law (3rd Edition).

REAL PROPERTY II

TORTS I

5 Hours

4 Hours

5 Hours

3 Hours
Torts II  5 Hours
This course includes a consideration of the bases and extent of legal liability for invasions of various interests of personality and property with especial attention given to wrongs, such as assault, battery, false imprisonment, trespass upon realty and personality, conversion, deceit, defamation, malicious prosecution, injuries resulting from negligence, injuries intentionally inflicted and liability without fault. An analysis is made of the various concepts of importance in this field of the law, such as intention, malice, legal right and wrong, negligence and proximate causation. Bohlen and Harper, Cases on Torts (4th Edition).

SECOND YEAR

Constitutional Law I  3 Hours
Constitutional Law II  3 Hours
Courses include the interpretation of the constitutional limitations for the protection of life, liberty and property, police power, taxation, eminent domain, obligation of contract; and a consideration of the law of the American Federal system, with especial reference to inter-state commerce, the powers of Congress and the jurisdiction of the federal courts. Dodds, Cases on Constitutional Law (3rd Edition).

Domestic Relations  3 Hours
A study of the law of marriage and divorce, parent and child, the rights and liabilities of husband and wife, the rights and liabilities of infants, including a study of statutory material. Case book to be announced.

Equity I  5 Hours
Equity II  3 Hours
These courses involve consideration of the rise of the court of equity; the powers of such court; principles governing the exercise of equitable jurisdiction, in specific reparation of tort, and specific performance, reformation, and recission of contracts; and equitable remedies and declaratory judgments. Cook, Cases on Equity (3rd Edition).

Evidence I  3 Hours
Evidence II  3 Hours
An examination of contemporary rules of evidence relating to burden of proof and presumptions, judicial notice, the examination of witnesses, competency and privilege, and illegally obtained evidence, followed by a careful development of the opinion rule, the hearsay rule and its exceptions, the best evidence rule, and the parole evidence rule. Morgan and Maguire, Cases on Evidence (1937).

Partnership  3 Hours
The law governing partnership ventures, including their formation, individual and firm liability to creditors, marshalling of assets in equity and priorities as between individual and firm creditors. Case book to be announced.

Private Corporations I  3 Hours
Private Corporations II  3 Hours
This course treats of the characteristics of private corporations, including their formation, powers, rights, and liabilities, the rights and liability of stockholders, and of officers and directors, and the rights of creditors against the corporation and its officers. Case book to be announced.

Wills and Administration of Estates  4 Hours
This course treats of the nature of testamentary dispositions. Mecham and Atkinson, Cases on Wills and Administration (2nd Edition).
CODE PLEADING I
3 Hours

CODE PLEADING II
3 Hours

This course deals with parties, joinder and splitting of causes of action, the petition, answer, reply, demurrer, amended and supplemental pleadings and motion practice as these problems have developed under the code provisions of the various states. Special emphasis is placed on the Federal Rules of Procedure. Throckmorton, Cases on Code Pleading.

CONFLICT OF LAWS
5 Hours

This course treats of the principles of private international law; jurisdiction of courts; the law governing torts, contracts, divorce, transfers of property by deed, will and intestate succession; penal statutes; marriage, adoption, domicile; foreign judgments and such procedural matters as statutes of frauds and of limitations. Lorenzen, Cases and Materials on Conflicts of Laws (4th Edition).

LEGAL ETHICS
1 Hour

This course treats of the rules on conduct governing the lawyer in the practice of his profession. The course must be completed to the satisfaction of the instructor, although no credit toward graduation is given. Cheatham, Cases and Materials on the Legal Profession.

NEGOTIABLE INSTRUMENTS
5 Hours

This course involves the consideration of the general principles governing bills of exchange, promissory notes and checks, and the uniform negotiable instruments law. Smith and Moore, Cases and Materials on Bills and Notes. (4th Edition).

TRIAL AND APPELLATE PRACTICE
5 Hours

Principles controlling the trial practice of civil actions; laying a foundation for review; methods and problems of procedure on review and disposition upon review. Hunter, Cases and Materials on Ohio Trial Practice.

TRIAL PRACTICE
1 Hour

The preparation of briefs and the presentation of oral arguments. Visiting members of the Ohio Bench or Bar read the briefs and hear the arguments. This is a required course but gives no credit toward graduation.

TRUSTS I
3 Hours

TRUSTS II
3 Hours

These courses treat of the origin and development in courts of equity of the law of trusts and trustees. Scott, Cases on Trusts (3rd Edition).

ELECTIVE COURSES

ADMINISTRATIVE LAW
3 Hours

This course deals with the powers and procedure of administrative agencies in this country. It includes a consideration of the nature of the power vested in administrative bodies, distinction between legislative, judicial and executive powers; conclusiveness of administrative determinations, the requirement of due process, and the extent of judicial control over administrative action. Gellhorn, Administrative Law Cases and Comments.

CREDITOR'S RIGHTS
3 Hours

Procedure and practice in liquidations, including bankruptcy, assignments for creditors, and equity receivership. Case book to be announced.
DAMAGES 2 Hours
In this course the rules governing the measure of damages in actions founded on contract and tort are considered. McCormick, Cases and Materials on Damages.

DRAFTING LEGAL INSTRUMENTS 3 Hours
Designed to give the student practice in the drafting of the more common legal instruments, with a brief consideration of law office management.

FUTURE INTERESTS 3 Hours
A study of future interests, vested and contingent, in real property. Leach, Cases on Future Interests.

INSURANCE 3 Hours
This course includes the nature and requisites of the contract, parties, insurable interest, premiums, representations and warranties, agents and their powers, waiver, and estoppel, rights under the policy, a study of the standard fire policies, life insurance, marine and accident. Case book to be announced.

LABOR LAW 2 Hours
This course includes the right to organize, the union; the legality of strikes, lockouts and boycotts; the interest of the public in labor disputes; legislative intervention with emphasis upon the Federal anti-injunction statute and the National Labor Relations Act. Case book to be announced.

MORTGAGES 3 Hours
The various theories of the mortgage including the historical evolution thereof in equity; recording statutes, and other problems in connection with the law of mortgages. Campbell, Cases on Mortgages.

SALES 3 Hours
The topics included in this course are the contract for delivery of goods, the statute of frauds, the passing of the property, fraud and retention of possession, illegality, condition and warranties, performance, rights of the seller and buyer in case of breach. Woodward, Cases on Sales (3rd Edition).

TAXATION 3 Hours
This course treats of the various kinds of taxes, including property taxes, income taxes, inheritance taxes, franchise and excise taxes, with particular attention to constitutional limitations upon state and federal taxation. Consideration will also be given to the collection of taxes and the taxpayers' remedies against the unlawful collection of taxes. Rottschäfer, Cases on Taxation (3rd Edition).

MUNICIPAL CORPORATION 4 Hours
This course treats of the general nature and rights and liabilities of public corporations (cities, villages, counties, and townships). Case book to be announced.

SURETYSHIP 3 Hours
This course includes the creation of the relationship, the contract, the statute of frauds, the rights and remedies, the defenses, guaranty contracts, and letters of credit, private and corporate sureties, and incidentally a consideration of the different kinds of bonds. Case book to be announced.
**Seniors in Candidacy for Degrees**

**Fall, 1946**

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<td>Robert E. Moriarty</td>
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<td>DeFord R. Schwall</td>
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<td>Mary Jane Schwartz Nye</td>
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<td>William T. Coffing</td>
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<td>Fred S. Cook</td>
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<tr>
<td>Nelson Herbert Lauless</td>
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<td>William E. Peterson</td>
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<tr>
<td>Collins J. Stackhouse</td>
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<tr>
<td>Stanley R. Berland</td>
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<td>James Thos. Schaeffer</td>
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<td>Joseph J. Bruzzese</td>
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<tr>
<td>James J. Mayer</td>
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<td>James E. Meals</td>
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<tr>
<td>Jean G. Bloom</td>
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<td>James W. Halfhill</td>
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<td>Charles R. Huston</td>
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<td>Roger F. Rice</td>
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<td>Ben Edward Rider</td>
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<td>Earl R. Schmidt</td>
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<td>James W. Schmied, Jr.</td>
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<td>Loren C. Schoenberger</td>
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<td>Eleanor M. Sonnett</td>
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<td>Jean M. Thomas</td>
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<td>Perry G. Wise</td>
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<td>Warren G. Wolf</td>
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<td>Lucille E. Bushong</td>
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<td>Frank Gren</td>
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<td>Clifford N. Hubbell</td>
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<td>Francis L. McCrate</td>
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<td>Lorella A. McKinley</td>
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<td>Howard A. Muhleman, B. S.</td>
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<td>Mertie Marie Parker</td>
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<td>Marilyn F. Purcell</td>
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<td>Maurice Shingler</td>
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<td>Claribel Filling White</td>
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<td>Richard E. Evans</td>
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<tr>
<td>Dale E. Huey</td>
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<td>Beryl Winifred Baker</td>
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<td>Harmon Miehls</td>
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<td>Harold A. Ault</td>
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<td>Carl M. Edmiston</td>
<td>LL. B.</td>
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<td>Richard E. Goforth</td>
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<td>Richard L. Krabach</td>
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<tr>
<td>George R. Smith</td>
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<td>George W. Thomas</td>
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<tr>
<td>Paul Tobin</td>
<td>LL. B.</td>
</tr>
</tbody>
</table>
Name | Degree
--- | ---
Raymond V. Kline | B. S. in M. E.
Frederick A. Kusta | B. S. in M. E.
Franklin Liles | B. S. in C. E.
Kenneth G. Oberly | B. S. in E. E.
James R. Poole | B. S. in M. E.
Charles W. Thobaben | B. S. in C. E.
Philip L. Bryant | B. S. in Phar.
Marjorie B. Gallagher | B. S. in Phar.
Samuel C. Hamilton | B. S. in Phar.
Fred J. Hanneman | B. S. in Phar.
Earl F. McDevitt | B. S. in Phar.
Quentin G. Maxfield | B. S. in Phar.
Thomas J. Perkoski | B. S. in Phar.
George C. Wilkinson | B. S. in Phar.
Peter Gulick | LL. B.
Joseph W. McNerney | LL. B.
Herman S. Vaubel, Jr. | LL. B.

William L. Freeman | B. S. in Ed.
M. Marie Johnson | B. S. in Ed.
Milton Shank | B. S. in Ed.
JoAnn F. Sidey | B. S. in Ed.
Adrienne E. Smith | B. S. in Ed.
Frank Snyder, Jr. | B. S. in Ed.
Thomas D. Steele | B. S. in Ed.
Lawrence H. Archer | B. S. in C. E.
Donald R. Bowman | B. S. in C. E.
Earl F. Brush | B. S. in E. E.
Jules R. Croft | B. S. in M. E.
Paul E. Huddle | B. S. in M. E.
Robert E. Kleinoeder | B. S. in C. E.
Vincent Lombardo | B. S. in M. E.
Edward Alban Potter | B. S. in M. E.
William M. Powell | B. S. in C. E.
Richard F. Schultheis | B. S. in C. E.
Vernon P. Williams | B. S. in E. E.
Francis J. Zupan | B. S. in E. E.
Wm. P. Grantham | B. S. in Phar.
Jack M. Young | B. S. in Phar.
Norman W. Bowsher | LL. B.
Dwight Carhart | LL. B.
Kenneth R. Koch | LL. B.
Robert G. Payne | LL. B.
Fred H. Rader | LL. B.
Robert B. Rady | LL. B.
John T. Rittenour | LL. B.
Robert E. Zeller | LL. B.

Summer, 1947
Suraj Bahadur | B. A.
Kathryn Louise Hefner | B. A.
John C. Heitzman | B. A.
Miriam Lutz | B. A.
Charles F. Menough | B. A.
John A. Parish | B. A.
Edward Smallwood | B. A.
Peter Aquilina | B. S. in Ed.
Gladys F. Cunningham | B. S. in Ed.
Jane Irwin Durbín | B. S. in Ed.

Note: This senior class is “the fruit of the war years”; the enrollment of 1946-47, including the Lima Extension Branch is 1027.
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Application for Admission

I hereby apply for admission to Ohio Northern University at the opening of __________________________ Quarter, 19________

Fall, Winter, Spring, Summer

Name in full __________________________

Street Address __________________________

Postoffice __________________________ State __________________________

Parent or Guardian __________________________

Parent or Guardian’s Address __________________________

Date of Birth __________________________ Church Preference __________________________

Race __________________________ Nationality __________________________

High School __________________________

Address of High School __________________________

Date of Graduation __________________________

Previous College attendance __________________________ Write “None” or Name of College with Date of Attendance __________________________

Check the department in which you are interested:

LIBERAL ARTS

General

Pre-Professional

Arts-Nursing

Business Admin.

Pre-Dental

Pre-Journalism

Pre-Law

Pre-Medical

Pre-Theological

Secretarial

Teacher Training

Commercial

Junior High School

Industrial Arts

Intermediate

Music

Physical Education

Primary

Senior High School

ENGINEERING

Civil

Electrical

Mechanical

Pre-Chemical

LAW

PHARMACY

What degree do you expect to receive? __________________________

If you have selected your major field, check below:

Biology

Chemistry

English

Foreign Language

Economics and Business Adm.

Psychology and Sociology

History and Political Science

Mathematics

Music

Physics

Speech

Veteran of World War?—Yes ______ No ______ Married ______ Single ______

Commute?—Yes ______ No ______
OHIO NORTHERN UNIVERSITY
BEQUEST FORM
UNRESTRICTED

I give and bequeath to Ohio Northern University at Ada, Ohio, the sum of

............... dollars

(or designated property or portion of estate) the principal or income to be used in such manner and for such purposes as in the judgment of the trustees shall best promote the interests of the University.

RESTRICTED ENDOWMENT

I give and bequeath to Ohio Northern University at Ada, Ohio, the sum of

............... dollars

(or designated property or portion of estate) to be added to the general endowment funds of the University, the income to be used in such manner and for such purposes as in the judgment of the Board of Trustees shall best promote the interests of the University.

RESTRICTED PURPOSE

I give and bequeath to Ohio Northern University at Ada, Ohio, the sum of

............... dollars

(or designated property or portion of estate) the principal or income to be used (or, the income to be used), for the purpose of

.........

in such manner as the Board of Trustees shall determine. If at any time the need of income for such purpose no longer exists, Ohio Northern University shall be, and hereby is, authorized to use the principal or income for such other educational purposes as in the judgment of the Board of Trustees shall best promote the welfare of the University.
INDUSTRIAL ARTS EDUCATION

PROFESSOR KITTLE

The industrial arts courses have been established to meet the need of those desiring to teach industrial arts in the junior and senior high schools of Ohio.

In the secondary school program, industrial arts includes both study and experiences in the materials, processes, products and occupations of an industrial society in order that the functions of orientation, avocation, consumer literacy, teaching competency, social understandings and cultural relationships may be achieved.

Students completing the Industrial Arts curriculum as outlined in the Division of Teacher Training will be granted the degree of Bachelor of Science in Education with a major in Industrial Arts.

101. INDUSTRIAL ARTS ORIENTATION LABORATORY  SPRING, 5 Hours
An orientation course in Industrial Arts, required of all majors and minors. Covering briefly the fundamental tools and operations for each area. Daily, 5 and 6.

111, 112. DRAWING  FALL, WINTER, 4 Hours
Courses offered in College of Engineering.

115. DRAWING  SPRING, 4 Hours
Primarily intended for students majoring in industrial arts and elementary education. The course includes the care and use of drawing equipment, orthographic projections, isometric drawings, oblique drawings, perspective drawings, charts, maps, lettering, and other topics. T. Th., 2 and 3; Two 2-hour laboratory periods to be arranged.

114. WOODS  FALL, 3 Hours

116. WOODS  WINTER, 3 Hours

117. WOODS  SPRING, 3 Hours

118. WOODS  SPRING, 3 Hours

127. DESIGN  WINTER, 3 Hours
Study of rhythm, repetition, variation, balance, symmetry, space divisions, and other topics, in their relationship to good design. Freehand perspective drawing, still life sketching, lettering, and other pertinent topics. Daily, 2.

210. METALS  FALL, 5 Hours

220. METALS  WINTER, 5 Hours

221. METALS  WINTER, 5 Hours
Practice in many basic operations including casting, planning, lay out, cutting, folding, wiring, burring, raising, setting down, welding, riveting, soldering, and others. Not open to freshmen. Daily, 5 and 6.