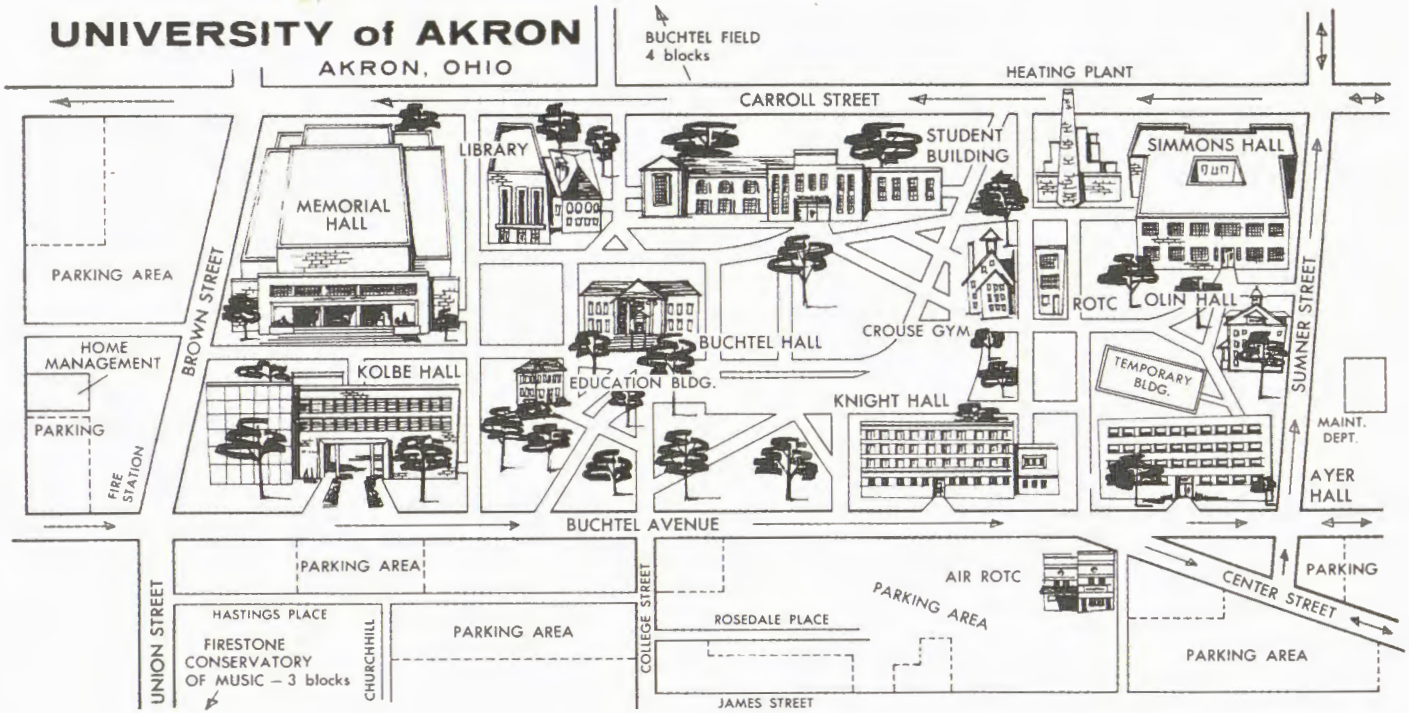
# THE UNIVERSITY OF AKRON


# 1958-1959 ANNUAL CATALOG


UNIVERSITY of AKRON
AKRON, OHIO
BUCHTEL FIELD
4 blocks
HEATING PLANT
CARROLL STREET
LIBRARY
STUDENT BUILDING
SIMMONS HALL
MEMORIAL HALL
PARKING AREA
BROWN STREET
ROTC
OLIN HALL
SUMNER STREET
CROUSE GYM
BUCHTEL HALL
HOME MANAGEMENT
KOLBE HALL
EDUCATION BLDG.
TEMPORARY BLDG.
KNIGHT HALL
PARKING
FIRE STATION
MAINT. DEPT.
AYER HALL
BUCHTEL AVENUE
PARKING AREA
AIR ROTC
PARKING
CENTER STREET
UNION STREET
HASTINGS PLACE
FIRESTONE CONSERVATORY OF MUSIC – 3 blocks
CHURCHILL
PARKING AREA
COLLEGE STREET
ROSEDALE PLACE
PARKING AREA
PARKING AREA
JAMES STREET

# THE UNIVERSITY OF AKRON


## 1958-1959
## ANNUAL CATALOG

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# UNIVERSITY CALENDAR

## 1958

September 15, 16, 17, Monday, Tuesday, Wednesday ..... Orientation Program. Required of all new students.
September 18, 19, Thursday, Friday ..... Final Registration for Day Students.
September 19, Friday, 4 p.m..... Registration for Day Session closes.
September 20, Saturday, 9 a.m. to 3 p.m., and September 22, 23, 24, Monday, Tuesday, Wednesday, 6 p.m. to 8:30 p.m. ..... Registration for Evening Session and Community College.
September 22, Monday..... Classes begin for Day Session.
September 29, Monday..... Classes begin for Evening Session.
November 17, Monday..... Mid-semester grades due.
November 26, Wednesday, 5 p.m. ..... Thanksgiving recess begins.,
December 1, Monday, 8 a.m..... Classes resume.
December 20, Saturday, 12 noon.. Christmas recess begins.

## 1959

January 5, Monday, 8 a.m..... Classes resume.
January 16, Friday ..... Founders Day.
January 26-30, Monday through Friday ..... Final Examination Week.
February 2, Monday, 9 a.m..... Final grades due.

## SPRING SEMESTER

February 2, 3, 4, Monday, Tuesday, Wednesday ..... Orientation Week. Required of all new students.
February 5, 6, Thursday, Friday.. Final Registration for Day Session.
February 6, Friday, 4 p.m..... Registration for Day Session closes.
February 7, Saturday, 9 a.m. to 3 p.m., and February 9, 10, 11, Monday, Tuesday, Wednesday, 6 p.m. to 8:30 p.m. ..... Registration for Evening Session and Community College.
February 9, Monday ..... Classes begin for Day Session.
February 16, Monday..... Evening Classes begin.
February 23, Monday..... Washington's Birthday (on 22nd)—a holiday.

**September 1958**

| S | M | T | W | T | F | S |
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| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
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| 28 | 29 | 30 | | | | |

**October 1958**

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| 26 | 27 | 28 | 29 | 30 | 31 | |

**November 1958**

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| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
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| 30 | | | | | | |

**December 1958**

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**January 1959**

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| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

**February 1959**

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| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

## (1959)

March 23, Monday, 8 a.m. ..... Spring Recess begins.
March 30, Monday, 8 a.m. ..... Classes resume.
April 13, Monday ..... Mid-semester grades due.
May 2, Saturday ..... Examinations for candidates for graduate degree with a major or minor in education and psychology.
May 22, Friday ..... May Day.
May 30, Saturday ..... Memorial Day—a holiday.
June 1-5, Monday through Friday ..... Final Examination Week.
June 7, Sunday ..... Baccalaureate.
June 8, Monday, 9 a.m. ..... Final grades due.
June 8, Monday ..... Commencement.

### SUMMER SESSION

June 9, 10, 11, 12, Tuesday through Friday ..... Registration for Summer Day Session.
June 12, Friday, 6 to 8:30 p.m., and June 13, Saturday, 9 a.m. to 12 noon ..... Registration for Summer Evening Session.
June 15, Monday ..... Classes begin.
July 4, Saturday ..... Independence Day—a holiday.
July 25, Saturday ..... Six weeks session ends.
August 8, Saturday ..... Eight weeks session ends.

**March 1959**

| S | M | T | W | T | F | S |
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| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

**April 1959**

| S | M | T | W | T | F | S |
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**May 1959**

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| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

**June 1959**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
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| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

**July 1959**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

**August 1959**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

# BOARD OF DIRECTORS

## TERM EXPIRES DECEMBER 31, 1959

L. S. BUCKMASTER ..... *137 E. Archwood Avenue*
MRS. W. A. HOYT ..... *175 Merriman Road*
J. W. KEENER ..... *265 Hampshire Road*

## TERM EXPIRES DECEMBER 31, 1961

LEE J. FERBSTEIN ..... *1071 North Portage Path*
CHARLES J. JAHANT ..... *655 North Portage Path*
JOSEPH THOMAS ..... *2427 Covington Road*

## TERM EXPIRES DECEMBER 31, 1963

HURL J. ALBRECHT ..... *530 Ridgecrest Road*
HARRY P. SCHRANK ..... *120 Twin Oaks Road*
E. J. THOMAS ..... *812 Mayfair Road*

## OFFICERS FOR 1958

*Chairman* ..... HURL J. ALBRECHT
*Vice Chairman* ..... HARRY P. SCHRANK
*Vice Chairman* ..... E. J. THOMAS
*Secretary* ..... LESLIE P. HARDY

# ADMINISTRATIVE OFFICERS AND ASSISTANTS

NORMAN P. AUBURN, A.B., D.Sc., LL.D. ..... *President of the University*
LESLIE P. HARDY, M.S.Ed. ..... *Financial Vice President*
DONFRED H. GARDNER, M.A. ..... *Dean of Administration and Director of General Studies*
ERNEST H. CHERRINGTON, JR., PH.D. ..... *Dean of the Buchtel College of Liberal Arts and Director of Graduate Studies*
R. D. LANDON, C.E., M.S. ..... *Dean of the College of Engineering*
HOWARD R. EVANS, PH.D. ..... *Dean of the College of Education*
WARREN W. LEIGH, PH.D. ..... *Dean of the College of Business Administration*
DOMINIC J. GUZZETTA, ED.D. ..... *Dean of the Evening and Adult Education Division and Director of the Summer Session*
CECIL A. ROGERS, B.S.BUS.ADM. ..... *Treasurer*
GORDON A. HAGERMAN, B.A. ..... *Registrar*
DOROTHY HAMLEN, B.S.L.S. ..... *Librarian*
RICHARD HANSFORD, M.A.Ed. ..... *Director of Student Personnel*
GEORGE W. BALL, A.B. ..... *Director of University Relations*
ROBERT C. BERRY, B.S.BUS.ADM. ..... *Adviser of Men*
MRS. PHYLLIS PAUL, M.A. ..... *Adviser of Women*
ULYSSES S. VANCE, B.A. ..... *University Editor*
JOHN M. DENISON ..... *Director of Alumni Relations*
WILLIAM A. ROGERS, ED.M. ..... *Assistant Dean of the Evening and Adult Education Division*
L. L. SMITH, M.A. ..... *Assistant Dean of the Evening and Adult Education Division and Director of the Institute for Civic Education*
EBBA LARSON ..... *Assistant Registrar*
CLYDE W. ROTH, B.A.Ed. ..... *Assistant Adviser of Men*
STUART M. TERRASS, B.A., B.S. ..... *Assistant Adviser of Men*
BARBARA E. WINKLER, B.S. ..... *Assistant Adviser of Women*
ROBERT PECK ..... *Assistant to the Treasurer*
J. R. MAIER, B.A. ..... *Assistant to the Dean of the Evening Division*
RAY KIEFER, B.S. ..... *Purchasing Agent*
EARL DEVOE ..... *Superintendent of Buildings and Grounds*
ROBERT W. PAUL ..... *Assistant Superintendent of Buildings and Grounds*
ALEX BANYAR ..... *Bookstore Manager*

# UNIVERSITY FACULTY AND ASSISTANTS

## 1957-58

## FULL-TIME FACULTY

NOTE: The dates in parentheses indicate the beginning of service at Buchtel College or The University of Akron; unless otherwise stated, service began in the month of September.

NORMAN P. AUBURN, *President of the University and Professor of Political Science* (1951)
A.B., University of Cincinnati, 1927; LL.D., Parsons College, 1945; LL.D., University of Cincinnati, 1952; D.Sc., University of Tulsa, 1957.

PAUL ACQUARONE, *Associate Professor of Botany and Geology* (1931)
B.S., Pennsylvania State College; Ph.D., Johns Hopkins University, 1929.

†BRUCE W. ALDERMAN, *Director of Admissions* (July, 1954)
B.A., M.S., State University of Iowa, 1947.

FRANK T. ALUSOW, *Assistant Professor of Speech* (February, 1956)
B.A., Cornell College; M.A., State University of Iowa, 1941.

†WESLEY ALVEN, *Associate Professor of Psychology* (1945)
Th.B., Northern Baptist Theological Seminary; Ph.B., Loyola University; M.A.Ed., The University of Akron; Ph.D., Western Reserve University, 1950.

DAVID E. ANDERSON, *Associate Professor of Engineering Materials and Director of the Testing Laboratory* (1923)
B.A., Augustana College; M.S., University of Chicago, 1923.

GEORGE W. BALL, *Director of University Relations* (1957)
B.A., Mount Union College, 1943.

IRENE C. BEAR, *Professor of Home Economics* (1944) (1948)
B.S., Illinois Wesleyan University; M.A., Texas State College for Women, 1937.

HELEN BECKER, *Associate Professor of Primary Education* (1949)
B.S., M.A., Ed.D., Columbia University, Teachers College, 1949.

RUSSELL J. BEICHLY, *Assistant Professor of Physical Education* (March, 1940)
B.A., Wittenberg College, 1926.

MERLIN E. BEMENT, JR., *Instructor in Speech* (February, 1957)
B.A., Baldwin-Wallace College; M.A., Michigan State University, 1956.

JAMES P. BERRY, *Assistant Professor of Chemistry* (1957)
B.Sc., Hull University College, Northern Polytechnic; B.Sc., University of London; Ph.D., British Rubber Producers' Research Assoc., University of London, 1955.

ROBERT C. BERRY, *Adviser of Men* (August, 1946)
B.S.Bus.Adm., The University of Akron, 1942.

MICHAEL BEZBATCHENKO, *Associate Professor of Mechanical Engineering* (June, 1949)
B.M.E., The University of Akron; M.S., Case Institute of Technology, 1954; P.E., Ohio.

ROBERT P. BOWERS, *Instructor in Basic Engineering* (June, 1957)
B.M.E., The University of Akron, 1957.

BRUCE R. BRANDELL, *Instructor in Biology* (1957)
B.S., University of Michigan; M.S., University of Michigan, 1950.

WARREN C. BRAY, *Associate Professor of Accounting and Finance* (1949)
B.S., University of Massachusetts; M.A., Columbia University, 1943.

*CHARLES BULGER, *Dean Emeritus of the Buchtel College of Liberal Arts and Hilton Professor Emeritus of Modern Languages* (February, 1910)
Ph.B., Buchtel College; M.A., Ph.D., University of Wisconsin, 1925; Litt.D., The University of Akron, 1953.

**RENA NANCY CABLE, *Associate Professor Emeritus of Art* (1927)
B.E., M.Ed, The University of Akron, 1931.

***ANNA BELLE CHALFANT, *Assistant Professor Emeritus of French* (1947)
B.A., Ohio State University; M.A., Middlebury College, 1934.

*Retired June, 1951.
**Retired June, 1953.
***Retired June, 1957.
†Resigned June, 1958.

ERNEST H. CHERRINGTON, JR., *Dean of the Buchtel College of Liberal Arts and Professor of Astronomy and Director of Graduate Studies* (August, 1948)
B.A., M.S., Ohio Wesleyan University; Ph.D., University of California, 1935.

MARVIN W. CHRISP, *Instructor in Education* (1957)
B.A.Ed., The University of Akron; M.A.Ed., The University of Akron, 1956.

FRANCES CLARK, *Assistant Professor of Accounting* (1946)
B.S., The University of Akron; M.Ed., University of Pittsburgh, 1946.

KENNETH COCHRANE, *Professor of Physical Education and Director of Athletics* (1948)
B.E., The University of Akron; M.Ed., University of Pittsburgh, 1941.

WALTER A. COOK, *Buchtel Professor of Chemistry* (1926)
B.A., M.A., Ph.D., University of Cincinnati, 1924.

GERALD CORSARO, *Associate Professor of Chemistry* (1948)
B.S., Fenn College; M.S., Ph.D., Western Reserve University, 1944.

BETTE DANEMAN, *Instructor in Sociology* (1949) (1956)
B.A., Western Reserve University; M.A., Brown University, 1949.

MALCOLM J. DASHIELL, *Assistant Professor of Art* (1953)
B.F.A., John Herron Art School; M.F.A., State University of Iowa, 1953.

EMILY DAVIS, *Professor of Art* (1945)
B.A., Ohio State University; M.A., Columbia University, Teachers College; Ph.D., Ohio State University, 1936.

RICHARD C. DAVIS, *Assistant Professor of Mathematics* (1946)
B.S.Ed., The University of Akron; M.A., University of Michigan, 1951.

*HARMON O. DEGRAFF, *Professor Emeritus of Sociology* (1930)
B.A., M.A., State University of Iowa; Ph.D., University of Chicago, 1926.

JOHN M. DENISON, *Director of Alumni Relations* (February, 1946)
The University of Akron.

HJALMER W. DISTAD, *Professor of Education* (1934)
B.S.Ed., M.A., Ph.D., University of Minnesota, 1926.

HOWARD M. DOUTT, *Professor of Secretarial Science* (February, 1926)
B.A., The University of Akron; M.A., University of Chicago, 1934.

CHARLES DUFFY, *Pierce Professor of English Literature* (1944)
Ph.B., University of Wisconsin; M.A., University of Michigan; Ph.D., Cornell University, 1939.

THEODORE DUKE, *Professor of Latin and Greek* (1946)
B.A., The University of Akron; M.A., Western Reserve University; Ph.D., Johns Hopkins University, 1946.

JAMES F. DUNLAP, *Associate Professor of Speech* (1955)
B.S.Ed., Wilmington College; M.A., Ph.D., Ohio State University, 1954.

JOSEPH A. EDMINISTER, *Instructor in Electrical Engineering* (June, 1957)
B.E.E., The University of Akron, 1957.

LAWRENCE M. EGER, *Assistant Professor of Psychology* (1957)
B.S., B.A., Northwestern University; M.S., Ph.D., Purdue University, 1954.

**ELMER ENDE, *Associate Professor Emeritus of Music* (1930)
B.Mus., American Conservatory of Music, Chicago; M.A., Ohio State University, 1930.

HOWARD R. EVANS, *Dean of the College of Education and Professor of School Administration* (1929)
B.A., Indiana State Teachers College; M.A., Columbia University; Ph.D., Northwestern University, 1930.

THOMAS W. EVANS, *Assistant Professor of Physical Education* (April, 1948)
B.A., College of Wooster; M.Ed., Kent State University, 1955.

MRS. RUTH FAIRCHILD, *Instructor in Physical Education* (1957)
B.S., Ohio State University, 1943.

PAUL H. FALL, *Professor of Chemistry* (1957)
A.B., A.M., Oberlin College; Ph.D., Cornell University; LL.D., Houghton College, 1937; LL.D., Williams College, 1940; LL.D., Oberlin College, 1942.

**ELDORA FLINT, *Associate Professor Emeritus of Secretarial Science* (1929)
B.E., The University of Akron; M.S.Ed., Syracuse University, 1935.

VAUGHN WILBUR FLOUTZ, *Associate Professor of Chemistry* (1941)
B.A., Olivet College; M.A., Ph.D., University of Colorado, 1932.

OMER R. FOUTS, *Associate Professor of Physics* (1926)
B.A., Wittenberg College; M.A., Ohio State University, 1925.

DONFRED H. GARDNER, *Dean of Administration and Professor of History and Director of General Studies* (1924)
B.A., M.A., Princeton University, 1923.

*Retired June, 1951.
**Retired June, 1957.

DENNIS GORDON, *Professor of Accounting* (1946)
B.A., M.B.A., University of Chicago, 1938; C.P.A., Ohio.

*FRED S. GRIFFIN, *Professor Emeritus of Mechanical Engineering* (1921)
M.E., Ohio State University, 1911; P.E., Ohio.

OSSIAN GRUBER, *Assistant Professor of Business Administration* (1946)
B.A., University of Minnesota; M.B.A., Northwestern University, 1928.

EMILE GRUNBERG, *Professor of Economics* (1946) (1956)
A.M., Ph.D., University of Frankfurt, 1930.

MRS. IRENE GRUNBERG, *Instructor in Modern Languages* (1946) (1956)
B.A., M.A., University of Geneva, 1937.

DOMINIC J. GUZZETTA, *Dean of the Evening and Adult Education Division, Associate Professor of Education, and Director of the Summer Session* (1954)
B.A., M.Ed., Ed.D., University of Buffalo, 1953.

GORDON HAGERMAN, *Registrar* (July, 1941)
B.A., The University of Akron, 1941.

E. K. HAMLEN, *Associate Professor of Coordination* (March, 1946)
M.E., The University of Akron, 1928; P.E., Ohio.

PETER J. HAMPTON, *Associate Professor of Psychology and Director of Psychological Services* (August, 1954)
B.A., M.A., University of Manitoba; Ph.D., Western Reserve University, 1950.

BERNARD HANES, *Assistant Professor of Industrial Management* (1956)
B.A., M.A., Pennsylvania State University; Ph.D., Ohio State University, 1952.

RICHARD HANSFORD, *Director of Student Personnel* (August, 1949)
B.A.Ed., M.A.Ed., The University of Akron, 1954.

HARVEY M. HANSON, *Assistant Professor of Physics* (1957)
B.S., The University of Akron; M.Sc., Ph.D., Ohio State University, 1956.

§WILLIAM S. HARDENBERGH, *Assistant Professor of Political Science* (1954)
B.A., M.A., Ph.D., University of Illinois, 1954.

MRS. PHYLLIS HARDENSTEIN, *Instructor in Speech* (February, 1947) (1956)
B.A., The University of Akron; M.A., University of Wisconsin, 1951.

LESLIE P. HARDY, *Financial Vice President and Professor of Adult Education* (1934)
B.S.Ed., Kent State University; M.S.Ed., The University of Akron, 1935.

ELIZABETH J. HITTLE, *Assistant Professor of Speech* (1950)
B.S.Ed., The University of Akron; M.A., Kent State University, 1949.

IRENE HORNING, *Assistant Professor of Biology* (1946)
B.S.N., Western Reserve University, 1934; R.N., Ohio.

**FRED F. HOUSEHOLDER, *Professor Emeritus of Physics* (1918)
B.A., M.A., University of Wisconsin, 1916.

CATHARINE A. HOWARD, *Instructor in Mathematics* (1957)
B.S., The University of Akron, M.S., Virginia Polytechnic Institute, 1957.

JOHN HULL, *Instructor in English* (1946) (1954)
B.A., The University of Akron; M.A., Western Reserve University, 1953.

MRS. JULIA HULL, *Assistant Professor of English* (1946)
B.A., The University of Akron; M.A., Western Reserve University, 1950.

PAUL O. HUSS, *Associate Professor of Electrical Engineering* (January, 1941)
B.S.Ed., B.S.E., M.S.E., Sc.D., University of Michigan, 1935; P.E., Ohio.

FARLEY K. HUTCHINS, *Associate Professor of Music* (1957)
Mus.B., Lawrence Conservatory of Music; Sac.Mus.M., Sac.Mus.Doc., School of Sacred Music, Union Theological Seminary, 1951.

DONATO INTERNOSCIA, *Associate Professor of Modern Languages* (1938)
B.A., Broadview College; M.A., Ph.D., Northwestern University, 1938.

ROBERT T. ITTNER, *Hilton Professor of Modern Languages* (1950)
B.A., Ph.D., University of Illinois, 1937.

KARL JOHANNES, *Associate Professor of Mathematics* (1957)
A.B., A.M., University of Rochester; Ph.D., University of Pittsburgh, 1956.

ALFRED H. JOHNSON, *Assistant Professor of Education* (1956)
B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.

MRS. EMMA D. JOHNSON, *Assistant Professor of Physics* (1950)
M.A., University of Edinburgh; M.A., Ohio State University, 1950.

EDWARD W. JONES, *Associate Professor of Geography* (January, 1944)
B.S., Western Reserve University; M.A., Kent State University, 1940.

DON A. KEISTER, *Professor of English* (1931)
B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.

*Retired June, 1951.
**Retired June, 1950.
§Leave of Absence, 1958-59.

DUANE R. KELLER, *Professor of Civil Engineering* (1955)
B.S.C.E., Ohio University; M.S.E., University of Alabama, 1949; P.E., Maryland, Alabama.

ROGER F. KELLER, JR., *Assistant Professor of Biology* (1954)
B.S., University of New Hampshire; Ph.D., Michigan State College, 1953.

GRACE C. KIMBALL, *Assistant Professor of Biology* (1955)
A.B., University of Rochester; Ph.D., Cornell University, 1937.

DAVID KING, *Associate Professor of Political Science* (1927)
B.A., Maryville College; M.A., University of Chicago, 1925.

GEORGE W. KNEPPER, *Assistant Professor of History* (August, 1954)
B.A., The University of Akron; M.A., Ph.D., University of Michigan, 1954.

WALTER C. KRAATZ, *Professor of Biology* (1924)
B.A., University of Wisconsin; M.A., Ph.D., Ohio State University, 1923.

SYDNEY J. KRAUSE, *Assistant Professor of English* (1955)
B.A., University of Missouri; M.A., Yale University; Ph.D., Columbia University, 1956.

MILTON L. KULT, *Associate Professor of Electrical Engineering* (June, 1954)
B.S.E.E., M.S., University of Illinois, 1952; P.E., Illinois, Ohio.

LAURENCE J. LAFLEUR, *Professor of Philosophy* (February, 1952)
B.A., Princeton University; Ph.D., Cornell University, 1931.

R. D. LANDON, *Dean of the College of Engineering and Professor of Civil Engineering* (February, 1946)
C.E., M.S., University of Cincinnati, 1927; P.E., Ohio.

EBBA LARSON, *Assistant Registrar* (August, 1926)
The University of Akron.

ANTHONY S. LATERZA, *Instructor in Physical Education* (August, 1955)
B.S.Ed., The University of Akron, 1952.

DOROTHY LAUBACHER, *Assistant Professor of Home Economics* (1950)
B.S., M.A., Ohio State University, 1941.

WALTER D. LEHRMAN, *Instructor in English* (1956)
B.S., M.A., Columbia University, 1953.

WARREN W. LEIGH, *Dean of the College of Business Administration and Professor of Commerce and Business Administration* (1926)
B.A., University of Utah; M.B.A., Ph.D., Northwestern University, 1936.

CLARENZ LIGHTFRITZ, *Special Teacher of Piano* (November, 1941)
Bowling Green State University; private instruction with Ernest White and Miss Rena Wills.

WILL LIPSCOMBE, *Associate Professor of Mathematics* (1921)
B.S., Florida State College; M.S., Ohio State University, 1926.

STEWART MCKINNON, *Assistant Professor of Commerce* (1949)
B.A., M.A., University of Wisconsin, 1941.

JAMES MCLAIN, *Assistant Professor of Economics* (1946)
B.A., The University of Akron; M.A., Western Reserve University, 1942.

JOSEPH H. MCMULLEN, *Associate Professor of Physical Education* (June, 1954)
Sc.B., B.A., Brown University; M.S., Westminster College, 1952.

ANDREW MALUKE, *Assistant Professor of Physical Education* (February, 1946)
B.S.Ed., The University of Akron; M.A., Kent State University, 1949.

GEORGE P. MANOS, *Assistant Professor of Civil Engineering* (1957)
B.Ch.E., Ohio State University, 1948; P.E., Ohio.

JOSEPHINE MARCHETTI, *Instructor in Home Economics* (1957)
B.S.H.E., Ohio State University, 1956.

MARGARET EVELYN MAUCH, *Associate Professor of Mathematics* (1945)
B.S., Huron College; M.S., Ph.D., University of Chicago, 1938.

MAURICE MORTON, *Professor of Polymer Chemistry and Director of the Institute Rubber Research* (October, 1948)
B.S., Ph.D., McGill University, 1945.

SAMUEL C. NEWMAN, *Associate Professor of Sociology* (1951)
B.A., University of Pittsburgh; M.A., Oberlin College; Ph.D., Ohio State University,

*JAY L. O'HARA, *Professor Emeritus of Economics* (January, 1934)
B.A., University of Michigan; Ph.D., University of Minnesota, 1927.

MRS. HELEN PAINTER, *Associate Professor of Education* (1945)
B.A., M.A., Ed.D., Indiana University, 1941.

WILLIAM I. PAINTER, *Associate Professor of Education* (1945)
B.A., Oakland City College; M.A., Ph.D., Indiana University, 1933.

VIRGIL PARMAN, *Professor of Music* (1948)
B.A., Kansas Wesleyan; M.M.Ed., Northwestern University, 1942.

*Retired June, 1955.

EDWARD A. PAUL, *Instructor in English* (1955)
B.A., The University of Akron; M.A., Ph.D., Western Reserve University, 1958.

MRS. PHYLLIS PAUL, *Adviser of Women* (July, 1955)
B.A., The University of Akron; M.A., Western Reserve University, 1937.

W. M. PETRY, *Professor of Mechanical Engineering* (1946)
B.S.M.E., University of Missouri; M.S.M.E., Case Institute of Technology, 1951; P.E., Ohio.

FRANK T. PHIPPS, *Associate Professor of English* (1953)
B.A., M.A., Miami University; Ph.D., Ohio State University, 1953.

JOHN W. PULLEYN, JR., *Instructor in Modern Languages* (1957)
B.A., M.A., University of Minnesota, 1950.

MRS. RUTH PUTMAN, *Assistant Professor of English* (1934)
B.A., Howard College; M.A., Western Reserve University, 1938.

*RUTH MARGUERITE RAW, *Associate Professor Emeritus of Engineering English* (1929)
B.A., M.A., Hiram College; M.A., Columbia University, 1924.

ALAN REMBAUM, *Assistant Professor of Chemistry* (1956)
Bachelor's degree, Sorbonne; Diploma in Agriculture, University of Nancy; License in Sciences, University of Lyon; Ph.D., State University of New York at Syracuse, 1955.

ALVIN M. RICHARDS, JR., *Associate Professor of Civil Engineering* (1949)
B.C.E., The University of Akron; M.S., Harvard University, 1949; P.E., Ohio.

DAVID C. RIEDE, *Instructor in History* (1955)
B.A., M.A., Ph.D., State University of Iowa, 1957.

MABEL RIEDINGER, *Professor of Education* (February, 1947)
B.A., Mt. Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 1946.

EDGAR C. ROBERTS, *Assistant Professor of English* (1926)
B.S.Ed., M.A., Ohio State University, 1924.

CLARA G. ROE, *Professor of History* (1947)
B.A., University of Michigan; M.A., University of Chicago; Ph.D., University of Michigan, 1943.

CECIL A. ROGERS, *Treasurer* (1932)
B.S.Bus.Adm., The University of Akron, 1932.

WILLIAM A. ROGERS, *Assistant Dean of the Evening and Adult Education Division* (1957)
B.A., Ed.M., University of Buffalo, 1954.

CHARLES ROGLER, *Professor of Sociology* (1949)
B.A., M.A., University of Michigan; Ph.D., University of Kansas, 1935.

MRS. MARGARET F. ROGLER, *Assistant Professor of Marketing* (1948)
B.S., University of Nebraska; M.S., University of Denver, 1944.

LOUIS ROSS, *Associate Professor of Mathematics* (February, 1946)
B.S., B.A., M.A.Ed., The University of Akron; Ph.D., Western Reserve University, 1955.

CLYDE W. ROTH, *Assistant Adviser of Men* (July, 1955)
B.A.Ed., The University of Akron, 1953.

RAY H. SANDEFUR, *Professor of Speech and Chairman of the Division of Humanities* (1950)
B.A., B.S.Ed., Emporia State Teachers College; M.A., University of Colorado; Ph.D., State University of Iowa, 1950.

GABE SANDERS, *Assistant Professor of Education* (1951)
B.S.Ed., Milwaukee State Teachers College; M.A., Ed.D., Columbia University, Teachers College, 1952.

**RICHARD H. SCHMIDT, *Professor Emeritus of Chemistry* (April, 1918)
B.A., Wesleyan University; M.A., Columbia University, 1915.

MRS. MARGARET SCHOENBERG, *Instructor in English* (1956)
B.A., University of Manitoba; M.A., Radcliffe College, 1951.

MRS. ANNETTE K. SEERY, *Assistant Professor of Economics* (1951)
B.A., Mount Holyoke College; M.A., Washington University, 1947.

***FREDERICK S. SEFTON, *Professor Emeritus of Physical Education* (1915)
B.S., Colgate University; M.Ed., Harvard University, 1925.

SAMUEL SELBY, *Ainsworth Professor of Mathematics and Chairman of the Division of Natural Sciences* (1927)
B.A., M.A., University of Manitoba; Ph.D., University of Chicago, 1929.

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*Retired, August, 1956.
**Retired, July, 1955.
***Retired, June, 1954.

MRS. LUCY T. SELF, *Assistant Professor of Secretarial Science* (February, 1933)
B.A., Ohio Wesleyan University, 1920.

§THOMAS W. SHARKEY, *Assistant Professor of Business Administration* (1954)
B.S.C., Ohio University; M.B.A., Indiana University, 1952.

JAMES E. SHEARER, *Associate Professor of Mechanical Engineering* (February, 1953)
B.S.M.E., M.S., University of Tennessee, 1953; P.E., Ohio.

ROY V. SHERMAN, *Professor of Political Science and Chairman of the Division of Social Sciences* (1929)
B.A., M.A., Ph.D., State University of Iowa, 1927.

KENNETH F. SIBILA, *Professor of Electrical Engineering* (February, 1940)
B.S.E.E., M.S.E.E., Case Institute of Technology, 1937; P.E., Ohio.

NOEL SIMMONS, *Assistant Professor of Chemistry* (1955)
B.S., City College of City of New York; M.S., Ohio State University; Ph.D., University of Minnesota, 1956.

FRANK SIMONETTI, *Professor of Business Administration* (February, 1942)
B.S., The University of Akron; M.B.A., Boston University, 1941; D.B.A., Indiana University, 1954.

MARY VERNON SLUSHER, *Associate Professor of Accounting* (1947) (1954)
B.S., M.S., Virginia Polytechnic Institute, 1931; C.P.A., Virginia.

ARTHUR L. SMITH, *Instructor in English* (1957)
B.A., University of Texas; M.A., University of California (L.A.), 1952.

HENRY P. SMITH, *Associate Professor of Music* (1947)
B.M., Illinois Wesleyan; M.A., Carnegie Institute of Technology; Ed.D., Columbia University, Teachers College, 1949.

HERBERT W. SMITH, JR., *Assistant Professor of Modern Languages* (1956)
B.A., Brigham Young University; M.A., Ph.D., University of Wisconsin, 1956.

LEVI LESTER SMITH, *Assistant Dean of the Evening and Adult Education Division, Assistant Professor, and Director of the Institute for Civic Education* (August, 1956)
B.A., Columbia University; M.A., Columbia University, Teachers College, 1947.

PAUL C. SMITH, *Associate Professor of Electrical Engineering* (1925)
B.S.E.E., Purdue University, 1917; P.E., Ohio.

JOHN F. STEIN, *Special Teacher of Voice* (1933)
Private Instruction with Herbert Witherspoon, Enrico Rosati, and Maria Kurenko.

HOWARD STEPHENS, *Instructor in Rubber Chemistry and Administrative Assistant in the Institute of Rubber Research* (1950)
B.S., M.S., The University of Akron, 1950.

WILLIAM J. STEVENS, *Instructor in English* (1950)
B.A., M.A., Dalhousie University, Halifax, N.S., 1939.

THOMAS SUMNER, *Columbia-Southern Professor of Chemistry* (1950)
B.S., Ph.D., Yale University, 1951.

ERNEST A. TABLER, *Associate Professor of Mathematics* (1935)
B.S., Kent State University; M.A., Western Reserve University, 1933.

STUART M. TERRASS, *Assistant Adviser of Men* (December, 1957)
B.A., B.S., The University of Akron, 1955.

MRS. HELEN S. THACKABERRY, *Assistant Professor of English* (February, 1940)
B.A., M.A., State University of Iowa, 1937.

ROBERT E. THACKABERRY, *Professor of English* (1938)
B.A., M.A., Ph.D., State University of Iowa, 1937.

ERNEST R. THACKERAY, *Professor of Physics* (1949)
B.A., M.A., University of Saskatchewan; Ph.D., University of Wisconsin, 1948.

ROLLAND R. TOUGAS, *Assistant Professor of Psychology* (1955)
B.A., Queen's University (Kingston, Ont.); M.A., Ph.D., Syracuse University, 1955.

EVELYN M. TOVEY, *Associate Professor of Nursing Education* (1950)
B.S.N., M.S.N., Western Reserve University, 1950; R.N., Ohio.

MRS. AUDRA TENNEY TUCKER, *Associate Professor of Secretarial Science* (1926)
B.A., The University of Akron; M.A., New York University, 1936.

PAUL E. TWINING, *Professor of Psychology* (November, 1941)
B.S., Ottawa University; M.A., University of Kansas; Ph.D., University of Chicago, 1938.

*CLARENCE R. UPP, *Associate Professor Emeritus of Mechanical Engineering* (1925)
M.E., Ohio State University, 1910; P.E., Ohio.

ULYSSES S. VANCE, *Associate Professor of Journalism and University Editor* (1923)
B.A., State University of Iowa, 1923.

*Retired, June, 1950.
§Leave of Absence, 1957-58.

RALPH M. VAN METRE, *Associate Professor of Business Administration* (1929) (1956)
B.S.B.A., Ohio State University; M.A.B.A., University of Chicago, 1933.

DONALD S. VARIAN, *Associate Professor of Speech* (1934)
B.A., M.A., University of Wisconsin, 1934.

HENRY S. VYVERBERG, *Assistant Professor of History* (1957)
B.A., University of Rochester; M.A., Ph.D., Harvard University; University of Lausanne (Switzerland), Certificate in French Studies, 1947.

MRS. RUTH WAICKMAN, *Instructor in Physical Education* (1956)
B.S., University of Michigan, 1947.

JOHN STEWART WATT, *Assistant Professor of Education* (1956)
B.A., The University of Akron; M.A., Ph.D., University of Chicago, 1950.

BERNARD M. WEINER, *Assistant Professor of Art* (1953)
B.S., Cleveland Institute of Art and Western Reserve University; M.A., Western Reserve University, 1951.

MRS. FLORENCE WENGER, *Instructor in Education* (1957)
Diploma, Bowling Green State University; B.S., M.A., Ohio State University, 1950.

*GEORGE STAFFORD WHITBY, *Professor Emeritus of Rubber Chemistry* (1942)
A.R.C.Sc., B.S., University of London; M.S., Ph.D., D.Sc., McGill University, 1939; LL.D., Mount Allison University, New Brunswick, 1932.

C. MICHAEL WHITE, *Associate Professor of General Business* (1957)
B.A., M.A., University of Texas; Ph.D., University of North Carolina, 1954.

**MRS. FLORENCE N. WHITNEY, *Associate Professor Emeritus of English* (1936)
B.A., Dakota Wesleyan University; M.A., Columbia University, 1913.

NELLIE WHITTAKER, *Special Instructor in Piano* (1945)
B.E., M.Ed., The University of Akron, 1935; Juilliard School of Music.

***EARL R. WILSON, *Associate Professor of Mechanical Engineering* (1929)
B.M.E., Ohio State University, 1916; P.E., Ohio.

MARY H. WILSON, *Assistant Professor of Home Economics* (April, 1943)
B.S., Iowa State College, 1932.

BARBARA E. WINKLER, *Assistant Adviser of Women* (February, 1956)
B.S., The University of Akron, 1952.

DARREL E. WITTERS, *Assistant Professor of Music* (1941)
B.S.Ed., Bowling Green State University, 1933.

DONALD P. WOODWARD, *Assistant Professor of Psychology* (1955)
B.A., Ph.D., University of Buffalo, 1954.

## LIBRARY

DOROTHY HAMLEN, *Librarian and Professor of Bibliography* (February, 1937)
B.A., The University of Akron; B.S.L.S., Western Reserve University, 1942.

JOHN B. ARMSTRONG, *Head, Technical Processes Department, and Instructor in Bibliography* (June, 1955)
B.S., University of Pittsburgh; M.L.S., Carnegie Institute of Technology, 1950.

MRS. HELEN ARNETT, *Education Librarian and Assistant Professor of Bibliography* (1953)
A.B., The University of Akron; B.S.L.S., Western Reserve University, 1941; M.A., San Jose State College (Cal.), 1952.

ROBERT BLANKENSHIP, *Head of Audio-Visual Aids* (1952) (July, 1956)
The University of Akron.

MRS. BARBARA CLARK, *Acting Cataloger* (September, 1948)
B.A., The University of Akron, 1950.

MRS. RUTH CLINEFELTER, *General Periodicals Librarian and Instructor in Bibliography* (June, 1952)
B.A., M.A., The University of Akron, 1953; M.S.L.S., Kent State University, 1956.

MRS. LILLIAN COOK, *Science and Technology Librarian and Rubber Division Librarian* (1954)
B.S., The University of Akron, 1954.

PAULINE FRANKS, *General Reference Librarian and Assistant Professor of Bibliography* (1950)
B.S.Ed., Kent State University; B.S.L.S., Western Reserve University, 1940.

MRS. LOIS E. MYERS, *General Services Librarian and Assistant Professor of Bibliography* (1946)
B.A., Wittenberg College; B.S.L.S., Carnegie Institute of Technology, 1939.

****GENIE J. PRESTON, *Associate Professor Emeritus of Bibliography* (1939)
B.A., Northwestern University; M.A., University of Illinois, 1936.

*Retired June, 1952.
**Retired June, 1953.
***Retired June, 1958.
****Retired June, 1955.

## UNIVERSITY HEALTH SERVICE

WILLIAM REYNOLDS, M.D., *University Physician* (February, 1956)
M.D., Wake Forest, 1948.

MRS. JULIA GOODRICH, R.N., *University Nurse* (1952)
W.C.A. Hospital, Jamestown, New York, 1931.

## PSYCHOLOGICAL SERVICES

PETER J. HAMPTON, *Director of Psychological Services and Associate Professor of Psychology* (August, 1954)
B.A., M.A., University of Manitoba; Ph.D., Western Reserve University, 1950.

FRANCIS J. WERNER, *Office Manager* (August, 1950)
B.A., M.A., The University of Akron, 1952.

## INSTITUTE OF RUBBER RESEARCH

MAURICE MORTON, *Director of the Institute of Rubber Research and Professor of Polymer Chemistry* (October, 1948)
B.S., Ph.D., McGill University, 1945.

G. STAFFORD WHITBY, *Consultant on Rubber Research and Professor Emeritus of Rubber Chemistry* (1942)
A.R.C.Sc., B.S., University of London; M.S., Ph.D., D.Sc., McGill University, 1939; LL.D., Mount Allison University, New Brunswick, 1932.

HOWARD STEPHENS, *Administrative Assistant and Instructor in Rubber Chemistry* (1950)
B.S., M.S., The University of Akron, 1950.

JAMES P. BERRY, *Assistant Professor of Chemistry and Research Chemist* (October, 1955)
B.S., Ph.D., University of London, 1955.

ALAN REMBAUM, *Assistant Professor of Chemistry and Research Chemist* (1956)
Bachelor's Degree, Sorbonne; Diploma in Agriculture, University of Nancy; License in Sciences, University of Lyon; Ph.D., State University of New York at Syracuse, 1955.

VERNON R. ALLEN, *Research Chemist* (July, 1955)
B.S., Tennessee Polytechnic Institute; M.S., The University of Akron, 1957.

EDGAR E. BOSTICK, *Research Chemist* (July, 1956)
B.S., Alabama Polytechnic Institute, 1950.

PAUL CAYRE, *Research Chemist* (October, 1957)
Graduate Ecole Nationale Superieure de Chimie Industrielle de Lyon; Post-Graduate Diploma from the Institut Francais du Caoutchouc, Paris, 1950.

MARVIN DEISZ, *Research Chemist* (1953)
B.S., M.S., The University of Akron, 1954.

GRIFFIN LEWIS, *Research Chemist* (February, 1956)
B.S., Massachusetts Institute of Technology, 1949.

RALPH MILKOVICH, *Research Chemist* (September, 1956)
B.S., Duquesne University; M.S., State University of New York at Syracuse, 1957.

MASAO OHTA, *Research Chemist* (July, 1956)
B.S., Kyoto University; M.S., University of California, 1956.

MRS. IRJA PIIRMA, *Research Chemist* (December, 1952)
Diploma in Chemistry, Technische Hochschule of Darmstadt; M.S., The University of Akron, 1957.

## TESTING LABORATORY

DAVID E. ANDERSON, *Director of the Testing Laboratory and Associate Professor of Engineering Materials* (1923)
B.A., Augustana College; M.S., University of Chicago, 1923.

## INSTITUTE FOR CIVIC EDUCATION

L. L. SMITH, *Director of the Institute for Civic Education and Assistant Dean of the Evening and Adult Education Division, Assistant Professor* (August, 1956)
B.A., Columbia University; M.A., Columbia University, Teachers College, 1947.

## SPEECH AND HEARING CLINIC

RAY H. SANDEFUR, *Professor of Speech* (1950)
B.A., B.S.Ed., Emporia State Teachers College, M.A., University of Colorado; Ph.D., State University of Iowa, 1950.

ELIZABETH J. HITTLE, *Director of the Speech and Hearing Clinic and Assistant Professor of Speech* (1950)
B.S.Ed., The University of Akron; M.A., Kent State University, 1949

## RESERVE OFFICERS' TRAINING CORPS

DEAN D. H. GARDNER, *Civilian Coordinator*

### ARMY

CHARLES L. DAVIS, *Professor of Military Science and Tactics* (August, 1955)
B.S., Indiana University, 1951; Lieutenant Colonel, Infantry.

DAVID G. ADAMS, *Assistant Professor of Military Science and Tactics* (September, 1956)
B.S.C.E., University of Toledo, 1953; First Lieutenant, Corps of Engineers.

JAMES W. ARNOLD, *Assistant Instructor in Military Science and Tactics* (July, 1956)
Sergeant First Class, Unassigned.

WILLIAM M. DEAN, *Assistant Instructor in Military Science and Tactics* (November, 1956)
Sergeant First Class, Unassigned.

CHARLES FOX, *Administrative Assistant* (September, 1957)
Master Sergeant, Unassigned.

THOMAS J. GOODEVE, *Assistant Instructor in Military Science and Tactics* (August, 1956)
Sergeant, Artillery.

GEORGE J. GOSNEY, *Assistant Military Property Custodian* (April, 1957)
Sergeant, Unassigned.

WILLIAM J. MAHONEY, *Assistant Professor of Military Science and Tactics* (August, 1955)
B.S.Ed., Bowling Green State University; M.A., Ohio State University, 1941; Major, Artillery.

JOHN R. MESSURI, *Assistant Professor of Military Science and Tactics* (March, 1955)
B.A., Kent State University, 1948; Captain, Infantry.

JOHN H. STEELE, *Assistant Instructor in Military Science and Tactics* (June, 1957)
Georgetown University; Kent State University; Sergeant First Class, Unassigned.

WILLIAM L. WILSON, *Assistant Professor of Military Science and Tactics* (August, 1956)
B.S., University of Wichita, 1948; Captain, Artillery.

MRS. THELMA M. LINK, *Administrative Assistant* (1952)

### AIR FORCE

GEORGE C. WELCH, *Professor of Air Science* (August 1956)
A.B., University of California, Los Angeles, 1948; Lieutenant Colonel, USAF.

GEORGE R. DOWLING, *Instructor in Air Science* (June, 1956)
Sergeant Major, USAF.

PAUL B. FRESHOUR, *Administrative Assistant* (May, 1954)
Technical Sergeant, USAF.

ALBERT E. GATES, JR., *Assistant Professor of Air Science* (August, 1955)
University of Cincinnati; Xavier University; Major, USAF.

JOSEPH KUNDRAT, *Assistant Professor of Air Science* (September, 1955)
B.A., Ohio University, 1951; Captain, USAF.

EDWARD P. MCKINNEY, *Administrative Assistant* (August, 1957)
Staff Sergeant, USAF.

EDWARD H. MENKE, *Assistant Professor of Air Science* (August, 1955)
B.A., Marietta College, 1948; Captain, USAF.

WAYNE D. REID, *Supply NCO* (August, 1956)
Technical Sergeant, USAF.

PETER STRICKER, *Assistant Professor of Air Science* (August, 1957)
A.B., Mercer University, 1951; Captain, USAF.

LAWRENCE L. TEMPO, *Administrative Assistant* (August, 1956)
New Mexico Highlands University; University of Southern California; Staff Sergeant, USAF.

# PART-TIME FACULTY

## (Day and Evening Credit)

JOSEPH C. AMBELANG, *Instructor in Chemistry*
B.S., The University of Akron; Ph.D., Yale University, 1938.

MRS. EDNA ARCHER, *Instructor in Art for the Grades*
B.E., The University of Akron; M.A., Columbia University, 1939.

JOHN H. BACHMANN, *Instructor in Chemistry*
B.Ch.E., Ph.D. University of Minnesota, 1939.

GEORGE M. BAKER, *Instructor in General Business*
B.S., Kansas State College, 1925.

DONALD E. BECKER, *Instructor in Industrial Management*
B.A., M.A., Oberlin College, 1948.

WILLIAM H. BEYER, *Instructor in Mathematics*
B.S., The University of Akron; M.S., Virginia Polytechnic Institute, 1954.

FRANK BROWN, *Instructor in General Business*
B.S., Kent State University, 1937.

HARRISON CLARK, *Instructor in General Business*
A.B., Harvard University, 1947.

JOHN COLLINS, *Instructor in English*
B.A., The University of Akron, 1957.

HARMON O. DEGRAFF, *Professor Emeritus of Sociology*
B.A., M.A., State University of Iowa; Ph.D., University of Chicago, 1926.

MARVIN A. DEISZ, *Instructor in Chemistry*
B.S., M.S., The University of Akron, 1954.

GEORGE B. DEHUFF, *Instructor in Industrial Management*
B.S., Drexel Institute of Technology, 1957.

JOSEPH DI LAURO, *Instructor in Accounting*
B.S., The University of Akron, 1955.

MRS. RUTH DORWARD, *Instructor in English*
B.A., The University of Akron, 1954.

MRS. JANE DUNLAP, *Instructor in English*
B.A., New York University, 1943.

HAROLD W. FIELD, *Instructor in General Business*
Mutual Insurance Institute, Aetna Insurance School.

ANNA MAE FLINT, *Instructor in Secretarial Science*
B.S., The University of Akron; M.A., Northwestern University, 1949.

SAMUEL GOLDMAN, *Instructor in General Business*
A.B., Miami University; LL.B., Harvard Law School, 1948.

ANDREW B. GRIBLE, *Instructor in Industrial Management*
B.S., The University of Akron, 1954.

MRS. BARBARA GSELLMAN, *Instructor in Mechanical Engineering*
B.M.E., The University of Akron, 1950.

LUCILE GUSTAFSON, *Instructor in Education*
B.S., Northwestern University; M.A., The University of Chicago; Ph.D., New York University, 1957.

MRS. ADENA HANDWERK, *Instructor in Secretarial Science*
B.A.Ed., The University of Akron, 1941.

RUSSEL V. HEATH, *Instructor in Engineering*
B.S., M.S., Purdue University, 1951.

MARTHA HEATON, *Instructor in Psychology*
A.B., College of Emporia, Kansas; M.A., University of Kansas; Ph.D., University of Chicago, 1953.

CYRIL JONES, *Instructor in Speech*
B.A., M.A.Ed., The University of Akron, 1934.

ROBERT KATZENMEYER, *Instructor in Accounting*
B.S., M.B.A., Kent State University, 1954; C.P.A., Ohio.

JOHN T. KIDNEY, *Instructor in Industrial Management*
Manager, Employees Service Division, The Goodyear Tire and Rubber Company.

LADONNA KOLEDIN, *Instructor in English*
B.A., M.A., The University of Akron, 1952.

ROSE MARY KRAUS, *Instructor in Handicrafts*
B.E., The University of Akron; M.A., Columbia University, 1926.

WILLIAM LANTZ, *Instructor in General Business*
The University of Akron.

WALTER LIPPS, *Instructor in Education*
B.E., The University of Akron, 1928.

WILLIAM LONG, *Instructor in Percussion*
Graduate, Eastman School of Music, 1948.

MARSHALL DONALD MCCOLLUM, JR., *Instructor in Marketing*
B.S.B., Miami University; M.B.A., Indiana University, 1954.

JAMES MILLER, *Instructor in Accounting*
B.S.Bus.Adm., The University of Akron, 1952.

DONALD MORRIS, *Instructor in General Business*
B.S.Bus.Adm., The University of Akron; LL.B., Akron Law School, 1942.

MARY MOSTENIC, *Instructor in English*
B.S.Ed., B.A., M.A., The University of Akron, 1951.

MRS. VERNA NELSON, *Instructor in Secretarial Science*
B.S., The University of Akron, 1937.

MRS. BETTY W. OBLISK, *Instructor in Secretarial Science*
B.S., The University of Akron, 1947.

SARAH ORLINOFF, *Instructor in Mathematics*
B.A., M.A.Ed., The University of Akron, 1954.

ROBERT PAOLUCCI, *Instructor in Brass Instruments*
Julliard School of Music.

PHILIP ELLIS PHILLIPS, *Instructor in Industrial Management*
B.S., M.B.A., The University of Wisconsin, 1955.

THOMAS POWERS, *Instructor in General Business*
A.B., Cornell University; LL.B., Cleveland Law School, 1927.

THEODORE R. PRICE, *Instructor in Business Law*
B.A., The University of Akron; LL.B., Duke University, 1948.

MRS. PHAIDRA Z. RETIKAS, *Instructor in English*
B.A., The University of Akron; M.A., Columbia University, 1948.

K. L. REYNOLDS, *Instructor in General Business*
B.S., University of Illinois, 1927.

MARGARET RUSS, *Instructor in English*
B.A., The University of Akron, 1957.

MRS. JULIET Z. SALTMAN, *Instructor in Sociology*
B.A., Rutgers University; M.A., The University of Chicago, 1948.

LAWRENCE SCARPITTI, *Instructor in Violin*
B.S.Ed., The University of Akron, 1954.

RAY E. SCHAFER, *Instructor in Industrial Management*
B.S., The University of Akron; M.B.A., Western Reserve University, 1957.

JOSEPH SCHIAVONE, *Instructor in Oboe*
B.S., A.B., Kent State University, 1951.

ROBERT SHUY, *Instructor in English*
B.A., Wheaton College; M.A., Kent State University, 1954.

ROBERT J. SIMMONS, *Instructor in Accounting*
B.A., The University of Akron; M.B.A., Kent State University, 1953.

LEONA STERLEY, *Instructor in Secretarial Science*
B.S.Sec.Sc., The University of Akron; M.A.Bus.Ed., New York University, 1942.

HENRY C. STEVENS, *Instructor in Chemistry*
B.S., Columbia University; M.S., Ph.D., Western Reserve University, 1951.

LEONARD SWEET, *Instructor in Mathematics*
B.A.Ed., The University of Akron; M.Ed., Kent State University, 1954.

MRS. CATHRYN C. TALIAFERRO, *Instructor in English*
B.A., The University of Akron; M.A., Radcliffe College, 1941.

JULIA VAN COURT, *Instructor in General Business*
B.S., B.S.Ed., M.A., Kent State University, 1939.

SUMNER VANICA, *Instructor in Education*
B.A., M.A.Ed., The University of Akron, 1944.

DWITE WALKER, *Instructor in Basic Engineering*
B.M.E., The University of Akron, 1949.

WILLIAM H. VICTOR, *Instructor in Business Law*
A.B., The University of Akron; LL.B., Western Reserve University, 1937.

C. W. VOBBE, *Instructor in Industrial Management*
B.B.A., University of Toledo, 1935.

LAURANCE R. WEBB, *Instructor in Chemistry*
B.S., Western Kentucky State College; M.S., The University of Kentucky; Ph.D., Tulane University, 1951.

MRS. BETTY WETTSTYNE, *Instructor in Secretarial Science*
B.S.,Sec.Sc., The University of Akron; M.B.A., University of Chicago, 1944.

MRS. ESTHER R. WILLIAMS, *Instructor in English*
A.B., Albion College; M.A., Columbia University, 1930.

DANIEL ZAKICH, *Instructor in Mathematics*
B.S., The University of Akron; M.S., Virginia Polytechnic Institute, 1954.

## PUBLIC SCHOOL FACULTIES COOPERATING WITH THE COLLEGE OF EDUCATION

### *OFFICERS OF AKRON PUBLIC SCHOOLS*

MARTIN ESSEX, M.A., PED.D. ..... *Superintendent of Schools*
HAROLD NICHOLS, PH.D. ..... *Assistant Superintendent of Schools*
A. J. DILLEHAY, M.A. ..... *Assistant Superintendent*
GEORGE F. WEBER, M.A.ED. ..... *Executive Director*
VIRGINIA LLOYD, M.D.ED. ..... *Principal of Spicer School*

### *OFFICERS OF OTHER COOPERATING SCHOOLS*

CARL COFFEEN, M.A.ED. ..... *Superintendent of Schools, Summit County*
FRED H. BODE, M.A. ..... *Superintendent of Schools, Cuyahoga Falls*
RALPH ELY, M.A. ..... *Superintendent of Schools, Barberton*
R. M. ERWINE, M.A.ED. ..... *Superintendent of Schools, Coventry Township*
RALPH C. SCHLOTT, M.A. ..... *Superintendent of Schools, Norton Township*

## TEACHERS IN SPICER DEMONSTRATION LABORATORY SCHOOL, 1957-1958

Mrs. Olga Adams (*5th Grade*), Harold Bakewell (*Physical Education*), Mrs. Elsie Bowman (*6th Grade*), Meryl Boxler (*7th Grade*), Mrs. Sue Burns (*4th Grade*), Samuel Cohen (*6th-7th Grades*), Mrs. Mildred Collis (*1st Grade*), Edith Edwards (*Art*), Mrs. Marianne Ernhart (*Vocal Music*), Mrs. Carolyn French (*4th Grade*), Mrs. Virginia Gillooly (*6th Grade*), Mrs. Thelma Grimes (*1st Grade*), Rose Mary Kraus (*2nd Grade*), Virginia Lloyd (*Principal*), Mrs. Bessie Miller (*1st Grade*), Lila Neal (*2nd-3rd Grades*), Catherine Redinger (*Kindergarten*), Edith Richards (*Art*), Laura Roundy (*3rd Grade*), Dorothy Schorle (*2nd Grade*), Mrs. Isabell Sleeman (*3rd Grade*), Mrs. Marie Wilson (*5th Grade*).

## DIRECTING TEACHERS, SUMMER 1957 THROUGH JUNE 1958

Bruce G. Averell (*Schumacher*), Harold F. Bakewell (*Spicer-Fraunfelter*), Jean Bartlett (*North*), Louis E. Bauman (*Kenmore*), Mrs. Eileen Beck (*Spicer*), Mrs. LaVerne Belcher (*Forest Hill*), Mrs. Julia Benson (*Garfield*), John C. Berg (*Firestone Park*), Mrs. Doreen Bernal (*Schumacher*), Frances Biondo (*Kent*), Vincent Biondo (*Central*), Mrs. Bernice Blickle (*Central*), Twylah Book (*Barberton*), Mrs. Elizabeth Bowers (*Case*), Mrs. J. Loudell Boyes (*Garfield*), Francis Browning, Jr. (*Kent*), Flora Bump (*West*), Mrs. Helen Bunts (*Lincoln*), Mrs. Anita Cahill (*Central*), Mrs. Marion Caldwell (*Fairlawn*), Paul L. Callahan (*Kenmore*), Thomas Collier, Jr. (*Glover*), Donna Cooper (*Margaret Park*), Mrs. Genevieve Cottrill (*Barber*), Lelah Culler (*Seiberling*), Harry Daitch (*Central*), Mrs. Dorothy Darden (*Barber*), Doris Daugherty (*Margaret Park*), Robert B. Davis (*Crouse*), Rita DeSantis (*Lincoln*), Lawrence H. Dessart (*Goodyear*), Philip Dienoff (*Garfield*), Mrs. Louise Donnelly (*Ellet*), Mrs. Florence Dougherty (*Schumacher*), Emil D'Zurik (*Barberton*).

Hazel Easterday (*Miller*), Mrs. Elizabeth Emery (*Ellet*), Richard D. Emmitt (*Crouse*), John J. Eshack (*Garfield*), Goldie Everett (*Voris*), Helen Fairbanks (*Seiberling*), Mrs. Georgette Falb (*Perkins*), Helen V. Fisher (*Rankin*), Mrs. Madeline Foust (*Fairlawn*), Mrs. Mary Gallagher (*West*), Myra Graham (*Highland Park*), Nerita Grandstaff (*Ellet*), Mrs. Belle Grensler (*Lincoln*), Mrs. Thelma Grimes (*Spicer*), Stanley P. Gustely (*Perkins*), Ruth Haines (*Central*), Mrs. Eleanor Halas (*Glover*), Vida Hall (*South*), Cecilia Hansen (*Hotchkiss*), Mrs. Gladys Hardman (*Rankin*), Robert F. Harris (*Buchtel*), Mrs. Laurette Harrison (*Central*), Marjorie L. Harry (*Barber*), Betty J. Heepe (*Schumacher*), Mrs. Hannah Henderson (*Howe*), Mrs. Marian Hess (*Schumacher-Maple Valley*), Leone Horning (*Forest Hill*), Mrs. Jean Howes (*East*), Mrs. Betty Hugg (*Barber*).

James N. Isaac (*West*), Mrs. Iva James (*Forest Hill*), Artis Jones (*Seiberling*), Mary Kapioltas (*Kenmore*), Janie Kennedy (*Perkins*), Charles S. Kidder (*Buchtel*), Miss Ruth Kiefer (*Lincoln*), Mrs. Evelyn Kirk (*Firestone Park*), Mrs. Dorothy Kist (*Seiberling*), Mrs. Marian Kline (*Leggett*), Mrs. Bess Krahl (*Fairlawn*), Rose Kraus (*Spicer*), Olive Kruger (*Firestone Park*), Mrs. Caroline Kuss (*Fairlawn*), Grace E. Kyle (*Portage Path*), John Lehman (*Central*), Mrs. Mary Leitch (*Hotchkiss*), Mrs. Lois S. Lewis (*Allen*), Thomas W. Lewis (*South*), Mrs. Evelyn Libis (*Hotchkiss*), Mrs. Jane Londa (*Central*), Mrs. Ruth Lynch (*Harris*).

Mrs. Ruth Mahoney (*Lincoln*), Joseph J. Marchese (*Goodrich*), Mrs. Carol Maxson (*Central*), Mrs. Lillian McGuire (*Ellet*), Mrs. Lucy McMurtrey (*Fraunfelter*), Nancy Mettler (*Central*), Mrs. Helen Mikolashek (*Lincoln*), Mrs. Martha Miller (*East*), Lester J. Morgan (*Allen*), Mary Mostenic (*Central*), Lora Naumer (*East*), Elaine Neal (*Lincoln*), Lila Neal (*Spicer*), William R. Nicholson (*Central*), Moulton Ormeroid (*Garfield*), Mrs. Mae Packan (*Coventry*), Mrs. Juliet Parenti (*Garfield*), Norma Paterline (*Highland Park*), Wilbur F. Pfeifer (*Garfield*), Mrs. John Pheasant (*Grace*), H. A. Pieffer (*Barberton*), Sylvia Pierce (*Barber*), Paul Pugh (*Central*), Mary Pusateri (*Central*), Mrs. Leona Rains (*Fraunfelter*), Edith Richards (*Highland Park-Spicer*), Jeannette Richardson (*Barber*), Reba Robinson (*Barberton*), James G. Ross (*Seiberling*), Mrs. Lela St. John (*Jennings*), Mrs. Jimmie Sandin (*Barber*), William A. Satterlee (*South*), Lawrence J. Scarpitti (*Itinerant Music*), Janet Schaeffer (*Barber*), Harry N. Schaller (*Buchtel*), Donald Schover (*Central*), Geraldine Schumacher (*South*), Harold E. Schumacher (*Perkins*), Gene P. Scruggs (*Allen-Miller*), George F. Seigman (*Ellet*), Mrs. Elsa Shafer (*Central*), Mercedes Sheibley (*Henry*), Emmett L. Shellenberger (*Perkins*), Mrs. Freda Sherbondy (*Perkins*), Joseph P. Siegferth (*Central*), Sister Mary Ann (*Our Lady of Elms*), Mrs. Martha Smith (*Firestone Park*), Luther D. Smith (*East*).

Mrs. Louise Snodgrass (*Central*), Arlene Spahr (*Ellet*), Ruth Squires (*Barber*), Arlene Stalder (*Fairlawn-Case*), Mrs. Erma Stark (*Howe*), Mrs. Marie Starks (*Buchtel*), Mrs. Mildred Steese (*Rankin*), Jane Steiner (*West*), Arlene Stoller (*King and Fairlawn*), E. Jean Stonestreet (*Seiberling*), Arnold R. Thomas (*Ellet*), Loretta Tisch (*Central*), Mrs. Gaynelle Upchurch (*East*), Robert E. Vernon (*Garfield*), Eugene Vinciguerra (*Ellet*), William L. Waggoner (*Garfield*), Mrs. Marian Wagner (*Schumacher*), Clyde M. Walchuck (*Firestone Park*), Joelyn Walk (*Pfeiffer*), Blanche Walker (*Rankin*), Margaret Weller (*Buchtel*), R. Parker Wilcox (*North*), Mrs. Marie Wilson (*Hill*), Mrs. Marie V. Wilson (*Spicer*), Mrs. Janice Witherow (*Goodyear*), Edna Wolfe (*Central*), Catherine Yonally (*Voris*), John Yovich (*Goodrich*) and Mary Zigler (*Mason*).

# TEACHING FACULTY BY DEPARTMENTS

*(All Colleges)*

## ACCOUNTING

Mr. Dennis Gordon, *Head;* Miss Frances Clark, Mr. Joseph DiLauro, Mr. Ossian Gruber, Mr. Robert Katzenmeyer, Mr. James Miller, Mr. Robert Simmons, Miss Mary V. Slusher.

## ART

Miss Emily Davis, *Head;* Mrs. Edna Archer, Mr. Malcolm J. Dashiell, Mr. Bernard M. Weiner.

## BIOLOGY

Mr. Walter C. Kraatz, *Head;* Mr. Paul Acquarone, Mr. Bruce Brandell, Miss Irene Horning, Mr. Roger F. Keller, Jr., Miss Grace C. Kimball.

## CHEMISTRY

Mr. Thomas Sumner, *Head;* Mr. Joseph C. Ambelang, Mr. John Bachmann, Mr. James Berry, Mr. Walter A. Cook, Mr. Gerald Corsaro, Mr. Marvin A. Deisz, Mr. Paul Fall, Mr. Vaughn W. Floutz, Mr. Maurice Morton, Mr. Alan Rembaum, Mr. Noel Simmons, Mr. Howard Stephens, Mr. Henry C. Stevens, Mr. Laurance R. Webb.

## ECONOMICS

Mr. Emile Grunberg, *Head;* Mr. James McLain, Mrs. Annette K. Seery

## EDUCATION - ELEMENTARY

Mr. Hjalmer W. Distad, *Head;* Miss Helen R. Becker, Mr. Marvin Chrisp, Mr. Howard R. Evans, Miss Rose Mary Kraus, Mrs. Helen W. Painter, Mr. Gabe Sanders, Mr. Sumner Vanica, Mrs. Florence Wenger.

## EDUCATION - SECONDARY

Miss Mabel M. Riedinger, *Head;* Miss Lucile Gustafson, Mr. D. J. Guzzetta, Mr. Alfred Johnson, Mr. William I. Painter, Mr. W. A. Rogers, Mr. L. L. Smith, Mr. John Watt.

## ENGINEERING - CIVIL

Mr. Duane Keller, *Head;* Mr. David Anderson, Mr. R. D. Landon, Mr. George Manos, Mr. A. M. Richards, Jr.

## ENGINEERING - ELECTRICAL

Mr. Kenneth Sibila, *Head;* Mr. Joseph Edminister, Mr. Paul Huss, Mr. Milton Kult, Mr. P. C. Smith.

## ENGINEERING - MECHANICAL

Mr. William Petry, *Head;* Mr. Michael Bezbatchenko, Mr. Robert Bowers, Mrs. Barbara Gsellman, Mr. E. K. Hamlen, Mr. R. V. Heath, Mr. James Shearer, Mr. Dwite Walker, Mr. Earl Wilson.

## ENGLISH

Mr. Charles Duffy, *Head;* Mr. John Collins, Mrs. Ruth Dorward, Mrs. Jane Dunlap, Mr. John Hull, Mrs. Julia Hull, Mr. Don A. Keister, Miss Ladona Koledin, Mr. Sydney J. Krause, Mr. Walter D. Lehrman, Miss Mary Mostenic, Mr. Edward A. Paul, Mrs. Phyllis Paul, Mr. Frank T. Phipps, Mrs. Ruth Putman, Mrs. Phaidra Z. Retikas, Mr. Edgar C. Roberts, Miss Margaret Russ, Mrs. Margaret M. Schoenberg, Mr. Roger Shuy, Mr. Arthur Smith, Mr. William J. Stevens, Mrs. Cathryn Taliaferro, Mrs. Helen S. Thackaberry, Mr. Robert E. Thackaberry, Mr. Ulysses S. Vance, Mrs. Esther R. Williams.

## GENERAL BUSINESS

Mr. C. M. White, *Head;* Mr. George M. Baker, Mr. Warren Bray, Mr. Frank Brown, Mr. Harrison Clark, Mr. Harold Field, Mr. Samuel Goldman, Mr. William Lantz, Mr. W. W. Leigh, Mr. M. D. McCollum, Jr., Mr. Stewart M. McKinnon, Mr. Donald Morris, Mr. Thomas Powers, Mr. Theodore R. Price, Mr. K. L. Reynolds, Mrs. Margaret Rogler, Miss Julia Van Court, Mr. R. M. Van Metre, Mr. W. H. Victor.

GEOGRAPHY

Mr. Edward W. Jones.

HISTORY

Miss Clara G. Roe, *Head;* Mr. Donfred H. Gardner, Mr. George W. Knepper, Mr. David C. Riede, Mr. Henry S. Vyverberg.

HOME ECONOMICS

Miss Irene C. Bear, *Head;* Miss Dorothy Laubacher, Miss Josephine Marchetti, Miss Mary H. Wilson.

INDUSTRIAL MANAGEMENT

Mr. Frank Simonetti, *Head;* Mr. Donald E. Becker, Mr. George B. DeHuff, Mr. Andrew B. Grible, Mr. Bernard Hanes, Mr. John Kidney, Mr. P. E. Phillips, Mr. Ray E. Schafer, Mr. Thomas Sharkey, Mr. C. W. Vobbe.

LATIN AND GREEK

Mr. Theodore Duke.

MATHEMATICS

Mr. Samuel Selby, *Head;* Mr. W. H. Beyer, Mr. Ernest H. Cherrington, Jr., Mr. Richard C. Davis, Miss Catharine Howard, Mr. Karl Johannes, Miss Will Lipscombe, Miss Margaret E. Mauch, Miss Sarah Orlinoff, Mr. Louis Ross, Mr. Leonard Sweet, Mr. Ernest A. Tabler, Mr. Daniel Zakich.

MODERN LANGUAGES

Mr. Robert T. Ittner, *Head;* Mrs. Irene Grunberg, Mr. Donato Internoscia, Mr. John Pulleyn, Jr., Mr. Herbert W. Smith, Jr.

MUSIC

Mr. Farley Hutchins, *Head;* Mr. Clarenz Lightfritz, Mr. William Long, Mr. Robert Paolucci, Mr. Virgil Parman, Mr. Lawrence Scarpitti, Mr. Joseph Schiavone, Mr. Henry P. Smith, Mr. John F. Stein, Miss Nellie Whittaker, Mr. Darrel E. Witters.

NURSING EDUCATION

Miss Evelyn M. Tovey.

PHILOSOPHY

Mr. Laurence J. Lafleur.

PHYSICAL EDUCATION

Mr. Kenneth Cochrane, *Head;* Mr. Russell J. Beichly, Mr. Thomas W. Evans, Mrs. Ruth Fairchild, Mr. Anthony S. Laterza, Mr. Walter Lipps, Mr. Andrew W. Maluke, Mr. Joseph H. McMullen, Mrs. Ruth Waickman.

PHYSICS

Mr. Ernest R. Thackeray, *Head;* Mr. Omer R. Fouts, Mr. Harvey Hanson, Mrs. Emma D. Johnson.

POLITICAL SCIENCE

Mr. Roy V. Sherman, *Head;* Mr. N. P. Auburn, Mr. William S. Hardenbergh, Mr. David King.

PSYCHOLOGY

Mr. Paul E. Twining, *Head;* Mr. Wesley O. Alven, Mr. Lawrence Eger, Mr. Peter J. Hampton, Miss Martha Heaton, Mr. Rolland R. Tougas, Mr. Donald P. Woodward.

SECRETARIAL SCIENCE

Mr. Howard M. Doutt, *Head;* Miss Anna Mae Flint, Mrs. Adena Handwerk, Mrs. Verna Nelson, Mrs. Betty Oblisk, Mrs. Lucy Self, Miss Leona Sterley, Mrs. Audra Tucker, Mrs. Betty Wettstyne.

SOCIOLOGY

Mr. Charles Rogler, *Head;* Miss Bette Daneman, Mr. Harmon O. DeGraff, Mr. Samuel C. Newman, Mrs. Juliet Saltman.

SPEECH

Mr. Ray H. Sandefur, *Head;* Mr. Frank T. Alusow, Mr. Merlin E. Bement, Jr., Mr. James F. Dunlap, Mrs. Phyllis Hardenstein, Miss Elizabeth Hittle, Mr. Cyril Jones, Mr. Donald S. Varian.

# History of The University

The University of Akron traces its history to 1870 with the establishment of Buchtel College by the Ohio Universalist Convention. The College took its name from its most generous benefactor, the Hon. John R. Buchtel.

Horace Greeley spoke in 1871 at the laying of the cornerstone of the first building, Buchtel Hall, located on one of the highest points in the City of Akron. The College was opened for students in the fall of 1872.

Crouse Gymnasium was built in 1888, and Buchtel Field, at Wheeler and Kling streets, was acquired in 1891 for athletic events.

Buchtel Hall was destroyed by fire in 1899, but the College and the community met the challenge by using Crouse Gymnasium and neighboring rooms to continue classes. Funds were raised for a new structure, and the present Buchtel Hall was in use by 1901.

In 1913 the plant and endowment of Buchtel College were accepted by the City of Akron to become the nucleus for the non-sectarian Municipal University of Akron, later officially The University of Akron. The original Buchtel College name was perpetuated in the Buchtel College of Liberal Arts.

The College of Engineering was established in 1914, the College of Education in 1921, and the College of Business Administration in 1953.

The University has had a steady growth in terms of students, faculty, courses and curricula, new buildings and campus development.

In recent years, spacious Memorial Hall (1954), with its two gymnasiums and swimming pool, has supplanted old Crouse Gymnasium as the home of the University's intercollegiate and intramural athletics. Kolbe Hall, opened in 1955, provides modern quarters for the Departments of Biology, English, and Speech, and includes the University Theatre, which seats 250 persons.

An addition to the Student Center in 1958 greatly expanded its facilities. A new College of Education building is next on the University's schedule for expansion and improvements.

University property holdings now total 20 acres, and represent a debt-free investment of $9,000,000. Approximately two-thirds of Akron high school graduates who go on to college choose their municipal University, and about two-thirds of the teachers in Akron public schools receive their training at the University.

## PRESIDENTS OF BUCHTEL COLLEGE

| | |
|---|---|
| *S. H. McCollester, D.D., Litt.D. | 1872-1878 |
| *E. L. Rexford, D.D. | 1878-1880 |
| *Orello Cone, D.D. | 1880-1896 |
| *Charles M. Knight, Sc.D. (ad interim) | 1896-1897 |
| *Ira A. Priest, D.D. | 1897-1901 |
| *A. B. Church, D.D., LL.D. | 1901-1912 |
| *Parke R. Kolbe, Ph.D., LL.D. | 1913-1914 |

*Deceased.

## PRESIDENTS OF THE UNIVERSITY OF AKRON

*Parke R. Kolbe, Ph.D., LL.D. ..... 1914-1925
*George F. Zook, Ph.D., LL.D. ..... 1925-1933
*Hezzleton E. Simmons, D.Sc., LL.D. ..... 1933-1951
Norman P. Auburn, A.B., D.Sc., LL.D. ..... 1951-

## GENERAL OBJECTIVES OF THE UNIVERSITY

The University of Akron is a municipal university supported in part by city taxes. It, therefore, plans its educational services especially to serve the people of Akron.

The University has as its aims:

To give students a survey of the chief fields of knowledge and thus acquaint them with the world of nature and human life; to develop their ability to make sound judgments and to profit from experience; to arouse their intellectual curiosity and stimulate their scholarly growth; to aid them in their physical well-being; to help them to appreciate beauty in all its forms and thus to furnish them with resources for enjoying leisure hours.

To develop and strengthen in students a sense of social responsibility so that they might have a proper regard for the rights of others; to prepare them for a sane and loyal family life and an active and intelligent citizenship.

To prepare students for greater social and individual effectiveness in public service, commerce and industry, and the professions; for entering the professional schools of law, medicine, and dentistry, and for advanced study in other fields; for careers in art, music, home economics, and secretarial science.

In the attainment of these objectives, the University will utilize its available resources to the utmost. Students will be expected to have a satisfactory degree of intellectual maturity, and adequate scholastic preparation along with the necessary aptitudes and interests. It is also expected that their educational objectives will harmonize with those of the University.

The University has further aims:

To provide expert advice for various civic and educational agencies; to furnish a scientific testing service for commerce and industry; to offer educational programs for the dissemination of culture and knowledge.

## ACCREDITATION

The University of Akron is accredited or approved by the following associations:

The North Central Association of Colleges and Secondary Schools, Ohio College Association, American Medical Association, American Chemical Society, the Engineers' Council for Professional Development, and National Council for Accreditation of Teacher Education.

The University of Akron is a member of the following organizations:

American Council on Education, Association of American Colleges, Association of Urban Universities, American Society for Engineering Education, Ohio College Association, and the American Association of Colleges for Teacher Education.

Women graduates of the University with approved degrees (requiring at least two years or a minimum of 60 credits of non-professional, non-technical work credited toward a B.A. degree) are eligible to membership in the American Association of University Women.

*Deceased.

# ORGANIZATION OF THE UNIVERSITY

The University of Akron is governed by a Board of Directors, consisting of nine members appointed by the Mayor of Akron for over-lapping terms of six years.

The University Council is the general legislative body of the University. It consists of the President, Deans, heads of University academic departments, and others appointed by the President.

The University is composed of a General College and four Upper Colleges, divided on the basis of educational objectives. The Upper Colleges are Buchtel College of Liberal Arts, Engineering, Education, and Business Administration. In addition, there are the Evening and Adult Education Division, Division of Graduate Studies, Summer Session, Institute of Rubber Research, Library, and various community services. A description of the objectives and organization of these various colleges and divisions will be found in their respective sections of the catalog.

# ADMISSION TO THE UNIVERSITY

## PROCEDURES

All inquiries and correspondence pertaining to the admission of students to The University of Akron should be addressed to:

The Registrar
The University of Akron
Akron 4, Ohio

The procedures for securing admission to The University of Akron are as follows:

1. Obtain an application blank from the University Registrar.
2. Submit the secondary school record. Applicants for admission as advanced students are required to have transcripts and evidence of honorable dismissal sent to the Registrar from all institutions attended. These records must be received at least five days prior to the beginning of the semester in which the applicant wishes to enter.
3. Take the counseling tests of the University prior to regular admission. The times at which these tests are given will be supplied by the Registrar.
4. Attend and satisfactorily complete the Orientation program prior to the first semester at the University.

## REQUIREMENTS

*Students attending an institution of higher education for the first time* are eligible for admission to The University of Akron if they have been graduated from a regionally accredited secondary school with a program including the following units of study:

4 units English
1 unit mathematics
3 units social studies (including American history)
1 unit natural science
1 additional unit from the above

There are certain additional prerequisite subjects for students planning to major in Science, Engineering or Industrial Management.

For Science, Premedical or Predental applicants:
- 1½ units high school algebra
- 1 unit plane geometry

For Engineering applicants:
- 1½ units high school algebra
- 1 unit plane geometry
- ½ unit of solid geometry or
- ½ unit of trigonometry
- 1 unit physics or chemistry

For Industrial Management applicants:
- 1½ units High School algebra.

Other applicants for admission may be admitted upon the basis of the quality of their secondary school work and their standing upon the counseling tests as given by the University.

The University reserves the right to approve admission only to those students whose ability, attitude and character are such as to promise satisfactory achievement of the objectives of the University.

Admission is necessarily limited by the University's capacity to provide for students' educational objectives.

Students who have been admitted will be permitted to take courses for which they are qualified by the nature of their secondary school record and their standing on the counseling tests.

*A student transferring* from another institution of higher education must have a satisfactory scholastic record as judged by The University of Akron and must be eligible to re-enter the institution from which he desires to transfer.

In general, 16 credits a semester represent a full allowance of credit for transfer purposes. The total transfer record of the transfer student will be counted for purposes of admission, retention and graduation. All evaluation and credit allowances for transfer work are tentative and depend upon a satisfactory record at The University of Akron.

Requirements for the admission of *graduate students* are listed in the graduate section of the catalog.

## UNIVERSITY DEGREE REQUIREMENTS

For the baccalaureate degree students in Liberal Arts, Education, and Business Administration must present at least 128 credits with no less than a 2 point average. Engineering students must present at least 159 credits with at least a 2 point average. No student is eligible for a degree unless he has at least the same ratio of quality points in his major field as is required for graduation. Some departments require a higher than 2 point average for their major students.

To complete Upper College work, a student should have at least 50 per cent of his total work in his major division. It is desirable, however, that he take not more than 75 per cent of his total work in his major division, exclusive of general education requirements.

To receive a second bachelor's degree from The University of Akron, the student must complete all requirements for the degree with a minimum of 32 credits not counted for the first degree.

Participation in Baccalaureate and Commencement exercises and discharge of all University obligations are required for any degree.

Candidates for a degree are required to file an application with the Registrar by February 1 of their senior year. A student must spend his last year in residence at the University unless excused by the Dean of his college. A student must obtain permission of the Dean of his college before taking work simultaneously in another institution if he wants that work credited toward a University of Akron degree.

If a student does not complete the requirements for graduation for the bachelor's degree within a period of ten calendar years from the date of the beginning of his first semester at The University of Akron, his requirements for graduation may be changed to those currently in effect by action of his Dean.

For additional requirements for degrees, consult the sections on degree requirements in each College.

For the master's degree and the doctor's degree, see the Graduate Division Section.

### GRADUATION "WITH DISTINCTION"

Students with a quality point ratio of 3.25 or higher for all undergraduate work may be graduated "with distinction."

Students who transfer from other institutions may be graduated "with distinction," by meeting the following requirements:

a. A quality point ratio of 3.25 or higher for all undergraduate work.

b. A quality point ratio of 3.25 or higher on all work at The University of Akron with a minimum of 60 credits at The University of Akron.

# UNIVERSITY RULES AND PROCEDURES

## TYPES OF STUDENTS

A *regular* student is a student who meets the admission requirements and is following a regular curricular sequence. In order to enroll in a course not in a regular curricular sequence, the student must obtain permission from the proper authority.

A *special* student is a student who does not meet the admission requirements but is admitted by petitioning the Committee on the General College for permission to take courses for which he is qualified by maturity and special qualifications. A *special* student may take only 15 credits of work unless transferred to regular status by action of the Committee on the General College.

An *auditor* is a student who, with the permission of his Dean, is enrolled for a course without credit. The permission may be granted if 1) the student's scholarship is good and 2) if the student has taken and passed the particular course, and 3) if his experience qualifies him to take the course.

An auditor is required to do all the work prescribed for the regular students enrolled for credit except taking examinations.

The fee for an auditor is the same as for a regular student.

Designation as an auditor must be made at the time of registration.

A *graduate* student is a student who holds a bachelor's degree from an accredited college or university, and who is enrolled for credit in one or more courses on the graduate level.

A *postgraduate* student is a student who holds a bachelor's degree from an accredited college or university and is enrolled in credit courses on the undergraduate level only.

## REPEATING COURSES

With the permission of his Dean, a student may repeat a course once in which he has received a D grade subject to these conditions:

a. The new or second grade only shall be counted in the student's total record.
b. The course may not be repeated in the semester in which the student is a candidate for graduation.
c. If the D grade is in a course which the student has previously failed, the privilege of repeating the course shall not be granted.

A student may repeat a course in which he has received a failing grade subject to these conditions:

a. The new or second grade shall be counted on the student's total record and the original failing grade shall be circled. If the failing grade is a discipline grade, both grades will count.
b. The course may not be repeated in a semester in which the student is a candidate for graduation unless it is a required course.

## CREDIT BY EXAMINATION

A student interested in earning credits by special examination, for subjects not taken in course must receive permission of the Dean of his college. The grade obtained in such examination is recorded on the student's permanent academic record. The fee for a special examination is $8.00 per credit. Credit by examination is not permitted in the semester before graduation. (See the "A" Book for detailed procedures.)

## RE-EXAMINATION

Re-examination for the purpose of raising a grade is not permitted.

## STUDENT LOAD

Sixteen credits a semester are considered a full program in most curricula.

The academic Dean may permit a student to take more than 16 credits. For General College students the Director of Student Personnel serves in this capacity; for evening students the Dean of the Evening Division serves in this capacity.

## MODIFICATIONS OF STUDENT SCHEDULES

A student may alter his schedule of courses for which he is registered only with the permission of his Dean.

If a student *withdraws* from a course on recommendation of his Dean it will not count as work attempted.

If a student leaves a course without the recommendation of his Dean or is *dropped* from any course by his Dean, he is given a failing grade in the course and it is counted as work attempted.

A student who wishes to withdraw from the University during a semester must receive permission of his Dean or he may not be entitled to an honorable dismissal and may receive failing grades in all his courses.

A student who is dropped from ROTC for unsatisfactory work during a semester shall be dropped from the University with failing grades in those subjects which he is failing and withdrawn from those subjects in which he is passing.

No student is permitted to enter a course after the first week of the semester.

## PROMOTION TO AN UPPER COLLEGE

For promotion to an Upper College a student must make a minimum quality point ratio of 2 for all work taken and must complete at least 64 credits including all necessary prerequisites. For *additional* college requirements for promotion, consult the sections on each college.

Acceptance of a student in an Upper College is the responsibility of the respective academic Dean in consultation with the Director of Student Personnel and heads of departments concerned.

A change by an Upper College student from one field of concentration or major to another, or from one college to another, must be approved by the Dean of the college in which he is enrolled.

## DISCIPLINE

The University reserves the right to penalize any student whose conduct at any time is in its judgment detrimental to the institution.

## GRADING SYSTEM

| *Percentage* | *Grade* | *Quality Points per Credit* |
|---|---|---|
| 93-100 inclusive | A | 4 |
| 85-92 inclusive | B | 3 |
| 77-84 inclusive | C | 2 |
| 70-76 inclusive | D | 1 |
| Below 70 | F | 0 |
| Conditioned* | | |
| Failed | | |
| Incomplete** | I | |
| Qualified*** | Q | |

* "Conditioned" means that although the semester's work is not of passing grade the deficiency may be made up without repeating the course in class. Failure to remove the deficiency satisfactorily by the close of the student's next semester in the University converts the grade to F. No higher grade than D is given for the removal of a "Condition."

The grade "Conditioned" may be given only for the first semester's work in a subject continuing through two or more semesters, such as first-year chemistry or first-year foreign language.

** "Incomplete" means that the student has done passing work in the course, but some part, for good reason, has not been completed. Failure to make up the omitted work satisfactorily within the first half of the following semester converts the grade to F. A fee of $2 per course is charged each student for the removal of an "Incomplete."

*** The grade of "Q" (qualified) signifies competence as determined by examination in certain skill subjects as defined by the Dean of the college. The student's requirements for graduation are thereby reduced by the number of credits assigned to each course in which he has thus qualified, unless he elects to enroll for regular course credit, in which case the "Q" is replaced by the grade earned in the course.

## REGULATION OF STUDENT OUTSIDE WORK

It is the responsibility of the student to report to his Dean the number of hours he is employed and to report any significant changes in the number of hours of employment. A student may be subject to disciplinary action by his Dean for failure to comply with the above.

## STUDENT ACCIDENTS

The University of Akron assumes no responsibility for student accidents incurred while attending or participating in classroom, gymnasium, or laboratory work.

## ATHLETIC INJURIES

The University assumes no legal responsibility or obligations for the expense of treating injuries received by athletes while training for, or participating in, intramural or intercollegiate sports, unless the treatment is first authorized by the University medical officer for athletes.

## RESERVE OFFICERS' TRAINING CORPS REGULATIONS

See ROTC section of the catalog.

## ABSENCE

Students are expected to attend all class meetings for which they are registered, and may be dropped from a course by the Dean in cases of excess absence, if recommended by the instructor. Students may be reinstated in the same manner.

## PROBATION AND FAILURE

A General College student who fails to maintain a quality point ratio of 2 may be subject to change of courses, suspension, or some other form of academic discipline.

An Upper College student whose scholarship is unsatisfactory may be placed on probation, suspended for a definite period of time, or dropped from the University at any time by the Dean of the college in which he is enrolled.

The academic program for each probationary student is determined by the Dean of the college in which he is enrolled.

## REINSTATEMENT OF STUDENTS

Students who have been dropped from the University are not eligible to register for credit courses in day, evening or summer sessions.

Reinstatement of students in the General College is under the jurisdiction of the Committee on the General College.

Reinstatement of Upper College students is under the jurisdiction of the Dean of the college in which they are enrolled.

## SYSTEM OF COURSE NUMBERING

Each course is designated by a code number, a course number, and a title. The first number is the code number. The number following the colon is the course number. Courses bearing course numbers—

| | |
|---|---|
| 1- 99 | General College Courses |
| 100-199 | Upper College (undergraduate) |
| 200-299 | Undergraduate courses for which graduate credit may be obtained. |
| 300-399 | Graduate courses for which a few undergraduates who have shown unusual ability may be accepted. |
| 400-499 | Graduate courses for which the prerequisite is the completion of requirements for the bachelor's degree. |

Code numbers are as follows:

0—Community College and Non-credit courses
1—General Studies
2—Art
3—Biology
5—Chemistry
6—Economics
7—English
8—French
9—Geology
10—German
11—Greek
12—History
13—Home Economics
16—Latin
17—Mathematics and Astronomy
18—Music
19—Philosophy
20—Physics
21—Political Science
22—Sociology
23—Spanish
24—Speech
27—Education
28—Geography
29—Health and Physical Education
30—Psychology
31—Nursing Education
33—Engineering, Basic
34—Engineering, Civil
35—Engineering, Electrical
36—Engineering, Mechanical
39—Accounting
40—General Business
42—Industrial Management
43—Secretarial Science
46—ROTC, Air
47—ROTC, Army

# FEES AND EXPENSES

All fees must be paid at the Treasurer's office at the time of enrollment. Fees are subject to change without notice.

The following is a typical charge for a full-time undergraduate student enrolled for a schedule of 16 credit hours each semester.

| | Per Semester |
|---|---|
| Resident of Akron | $176.00 |
| Nonresident of Akron | 352.00 |

## VETERANS' EXPENSES

Disabled veterans of the Korea emergency who are eligible for admission to the University may, if certified by the Veterans Administration, register for courses without payment of fees.

Full payment of fees is required if the veteran does not have his Certificate of Eligibility at the time of registration. The cash payment will be refunded when the veteran presents his Certificate of Eligibility.

Non-disabled veterans of the Korea emergency must pay their fees at the time they register. They will receive specified allowances under Public Law 550.

## UNDERGRADUATE LEVEL FEES

(Not applicable to courses numbered 300 and above)

### MAINTENANCE AND INCIDENTALS

Payable by all students

| | |
|---|---|
| Per credit hour, per semester | $11.00 |

### TUITION

Payable by nonresidents of Akron in addition to other fees.

| | |
|---|---|
| Per credit hour, per semester | $11.00 |

## GRADUATE LEVEL FEES

Applicable to all courses numbered 300 and above for graduate or undergraduate students.

Applicable for courses numbered 200 to 299 if taken for graduate credit.

| | |
|---|---|
| Residents of Akron, per credit hour, per semester | $ 22.00 |
| Nonresidents of Akron, per credit hour, per semester | 27.00 |

## OTHER FEES

### LATE REGISTRATION

A fee of $5.00 will be charged all students who have not completed registration, classification and payment of fees before the closing time of registration in the session in which they are registered.

### MUSIC FEES

For students enrolled for credit in these courses:

| | |
|---|---|
| Band, Band Instruments, Chorus, Orchestra, Organ, Piano, University Singers, Violin, Voice | No Maintenance Fees or Tuition |

For private lessons in Band instruments, Organ, Piano, Violin, Voice:

For students enrolled for three or more credit hours of class work in addition to the private lesson courses, per semester:

| | |
|---|---|
| Two individual half-hour lessons per week | $ 80.00 |
| One individual half-hour lesson per week | 40.00 |

For persons enrolled in less than three credit hours of class work in addition to the private lesson courses, per semester:

| | |
|---|---|
| Two individual half-hour lessons per week | $108.00 |
| One individual half-hour lesson per week | 54.00 |

## HOME MANAGEMENT RESIDENCE

Board and room for six weeks ..... $ 55.00

## THESIS AND BINDING

For candidates for the master's degree (Payable at time of application for degree).

| | |
|---|---|
| Thesis fee (when required) | $ 10.00 |
| Binding fee, per volume | 2.50 |

Two volumes must be deposited in the University Library.

## GRADUATION IN ABSENTIA

Fee ..... $ 5.00

## AUDITORS

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

## COMMUNITY COLLEGE

A fee of $12 is charged for each Community College course unless otherwise noted in the circular printed each semester which describes the courses.

## MISCELLANEOUS

One free transcript of record is furnished a student. A fee of $1 is charged for each additional copy.

A fee of $2 is charged for each two-year or three-year certificate.

A fee of $8 per credit is charged for each examination in college work not taken in course.

A change of schedule fee of $1 per course is charged each student who, after completing registration, enrolls for an additional or substitute course or section except when such change is made at the request of the dean having jurisdiction over the student.

A fee of $1 per test is charged each student who is given a make-up test after having been absent from an announced, full-period examination.

A fee of $2 per course is charged each student for the removal of an "Incomplete."

A rental fee of $1 per year plus a deposit of $1 is charged each student who engages a locker on campus.

A towel rental fee of $2 per semester is charged each student in physical education who uses locker room facilities in Memorial Hall.

## ROTC UNIFORM FEE

For fitting, cleaning and maintenance of each uniform issued.

Basic ..... $4.00

## PARKING FEES

| | | |
|---|---|---|
| Day students—enrolled for 7 or more credit hours | $10.00 | (Per Semester) |
| enrolled for 6½ or less credit hours | 5.00 | (Per Semester) |
| Engineering Co-op students—enrolled in day classes only | 5.00 | (Per Period) |
| enrolled in day and evening classes | 8.00 | (Per Semester) |
| enrolled in evening classes only | 3.00 | (Per Semester) |
| Evening students | 3.00 | (Per Semester) |
| Summer Session students | 3.00 | (Per Session) |

## RULES GOVERNING NONRESIDENT TUITION

Payment of nonresident tuition is required of those students who do not qualify as permanent residents of Akron, as defined by the University. A permanent resident, for the purpose of the University, is considered to be one who has established a bona fide domicile by the acquiring of a dwelling place in Akron and has formed the intent to make the City of Akron a permanent home for purposes other than attendance at The University of Akron. The qualifications are as follows:

1. For a student 20 years of age or under as of the first day of the semester for which he is registering, at least one parent or legal guardian must be a permanent resident within the corporation lines of Akron on the first day of the semester and must have been a permanent resident of Akron for the twelve consecutive months prior to the first day of the semester.

2. A student 21 years of age or over as of the first day of the semester for which he is registering must be a permanent resident within the corporation lines of Akron on the first day of the semester for which he is registering and must have been a permanent resident of Akron for the twelve consecutive months prior to the first day of the semester.

3. In case a qualified permanent resident of the City of Akron is appointed the guardian of a minor who would not otherwise qualify as a permanent resident, for purposes other than to avoid payment of tuition, the residence shall be considered to be in Akron only after the expiration of one year after such appointment.

A student's correct residency status as of the first day of the semester shall not be considered changed any time within the semester.

A student whose original registration was as a nonresident shall be presumed to be a nonresident thereafter unless it can be clearly proved by him to the University's satisfaction that his former domicile has been abandoned and a new domicile established in the City of Akron and maintained for at least 12 consecutive months for purposes other than attending the University. A fraternity house may not be considered a qualified domicile.

The responsibility of proving qualified residence in the City of Akron rests with the student.

Any student who falsely claims to be a permanent resident of Akron, or gives false information to avoid the payment of tuition, shall be required to pay in addition to the tuition due, a penalty of $25.00 and may be subject to such other discipline as determined by the President of the University.

The residence of wives shall follow that of their husbands.

## REGULATIONS REGARDING REFUNDS

Registration does not automatically carry with it the right of a refund or reduction of indebtedness in cases of withdrawal, and failure or inability to attend class. The student assumes the risk of all changes in business or personal affairs.

Fees are refunded in full if the University cancels the course, or if the University does not permit the student to enroll, or if the student is drafted, but not if one enlists, into the military forces of The United States of America.

A student who formally withdraws before his first regularly scheduled class, regardless of reason, will receive a full refund less $5.00.

If it is determined that a refund is proper, it shall be made after the first four weeks of the semester, or one week after the receipt of the required evidence, whichever date comes later. It is also a requirement that the student return his activity book, identification card and parking permit before a refund will be made.

After the close of registration, a student who has no obligation to the Bookstore, Library, ROTC or other department, and who formallly withdraws by direct notification to the appropriate registering office, upon request may have a partial refund under either of the following conditions:

A. Withdrawal during the first week of classes.

B. Withdrawal after the first week of classes, provided evidence is supplied to the satisfaction of the Dean of the College or Division that the student has been prevented from attending classes because of:

1. Serious illness as evidenced by a written statement of a physician.
2. Change in hours of employment as evidenced by a written statement of the employer.
3. Any circumstance arising since the first day of the semester beyond the control of the student.

Refunds allowed will be made according to the following schedule:

| | Session or Semester | | |
|---|---|---|---|
| | Regular | Cooperative | Summer |
| First week | 80% | 60% | 60% |
| Second week | 60% | 40% | 20% |
| Third week | 40% | 20% | 0 |
| Fourth week | 20% | 0 | 0 |
| Thereafter | 0 | 0 | 0 |

No refunds will be made of the following fees:

1. Late registration
2. Special examination and test
3. Change of schedule
4. Incomplete removal
5. ROTC uniform after issued
6. Community College, except by written request of the Dean
7. Penalty
8. Towel

No refunds will be issued when a student is dismissed from the University for disciplinary reasons.

# The General College

The General College was established in September 1935. Its objectives are two-fold: 1) to furnish a general cultural education for (a) students who plan to enter an Upper College and obtain an academic degree, and (b) students who desire approximately two years of general education; 2) to furnish pre-professional or terminal courses of an occupational nature for students who do not plan to enter an Upper College.

Students attending the University with less than two years previous college experience are admitted to the General College.

Students with the exception of those electing Engineering remain under the jurisdiction of the General College until they have satisfactorily passed at least 64 credits with a quality point ratio of at least 2. Engineering students are promoted to the College of Engineering when they have satisfactorily completed the first semester of the Engineering curriculum with a quality point ratio of at least 2.

The General College is under the jurisdiction of the faculty Committee on the General College, whose policies are administered by the Director of Student Personnel.

General College students take courses in the General Studies as indicated below and such courses as are prerequisites for the specific colleges and departments. These prerequisites are listed under each college and department.

## THE GENERAL STUDIES

| | | |
|---|---|---|
| 1 :1-2 | Written English | 6 credits, first year |
| 1 :3-4 | Written English | 4 credits, second year |
| 1 :6-7 | Effective Speaking | 4 credits, first and second year |
| 1 :11 | Numbers Communication | 2 credits, before 64 hours |
| 1 :13-14 | Reasoning and Understanding in Science | 6 credits, first year |
| 1 :15-16 | Institutions in the United States | 6 credits, before 64 hours |
| 1 :17-18 | Western Cultural Traditions | 6 credits, before 96 hours |
| 1 :19 | Personal Development | 2 credits, first year |
| 1 :21-22 | Physical Education | 1 credit, first year |
| 1 :101 | Senior Course | 2 credits, final year |
| | Military Science and Tactics (for men) | 6 credits, first two years |

A description of these courses will be found under the section "Subjects of Instruction." Courses B1, B2, B3, B4, B5, listed in the catalog for 1954, will not be offered in 1958-1959.

# The Upper Colleges

## BUCHTEL COLLEGE OF LIBERAL ARTS

ERNEST H. CHERRINGTON, JR., PH.D., *Dean*

When Buchtel College became the Municipal University of Akron (now The University of Akron) in 1913, the name Buchtel was retained in the Buchtel College of Liberal Arts. The first Dean of Buchtel College was Professor Albert I. Spanton (Class of 1899), who served in that capacity from 1913 to 1938. He was succeeded by Professor Charles Bulger (Class of 1908), who served from 1938 to 1948. Dean Bulger was succeeded by the present Dean.

### OBJECTIVES OF THE COLLEGE

To acquaint students with the world of nature and human life by introducing them to the chief fields of knowledge.

To train them in the scientific method, and help them form habits of clear thinking.

To arouse their intellectual curiosity and stimulate their scholarly growth.

To help them appreciate beauty in all its forms, and thus furnish them with resources for enjoying their leisure hours.

To develop and strengthen in them a sense of social responsibility in order that they may have a proper regard for the rights of others, and to prepare them for an active and intelligent citizenship.

To help them acquire poise and develop a moral strength adequate to cope with the various situations of life.

### LIBERAL ARTS AND CAREERS

Although vocational preparation is not the primary objective of the college, the liberal arts are highly "practical." Generally, the broad training offered the student in the liberal arts college equips him for a greater variety of "job opportunities" than does a narrow, specialized training.

Buchtel College of Liberal Arts graduates frequently enter directly into such careers as civil service, commercial art, laboratory technology, dietetics, journalism, secondary teaching, social work, recreation, public relations, writing and business. The college also prepares students to take graduate work in law, medicine, dentistry, college and high school teaching, business, scientific research, social work, library science, and many other fields.

### DIVISIONS OF THE COLLEGE

Buchtel College of Liberal Arts includes three divisions: Humanities, Social Sciences, and Natural Sciences.

### OBJECTIVES OF THE HUMANITIES DIVISION

To develop in the student an awareness of, and appreciation for, man's cultural heritage in literature, art, music, and philosophy, together with an understanding of the necessity for its preservation and enrichment.

To send out into the world men and women who not only can do things but also can understand things; who view the present in its proper relation to the past; who remain hopeful because they have enjoyed an ennobling acquaintance with the aspirations and achievements of the world's great creative artists; who are better citizens because they are thoughtful citizens; who are happier human beings because they can enjoy the use of their own minds.

To aid the student in his efforts to express himself clearly and forcefully in his mother tongue.

To motivate the student toward independent study so that he may continue to pursue his aesthetic and philosophical interests after he has finished his college work.

To encourage the student to develop latent creative ability.

To offer the student such training that he may be able to: pursue graduate study in his chosen field; pursue graduate study in library science; teach English, foreign languages, speech, art, and music in the secondary schools; pursue a career in journalism; pursue a career in speech correction.

To provide the necessary and desirable background for careers in: publishing and writing; translating for public and private corporations; public relations and personnel work; public service; business and industry; radio, theater, and television; commercial art, industrial design, and interior decorating.

## OBJECTIVES OF THE NATURAL SCIENCES DIVISION

To acquaint the student with the various fields of science as an aspect of world culture.

To prepare the student for further training in the graduate, professional, and technical schools.

To provide those who either do not desire or are unable to continue their academic training, with such knowledge, techniques, and skills as will enable them to become competent citizens.

To make technical service and information available to the city and its industries through the libraries and laboratories of the division.

In order to accomplish these objectives, the division offers courses designed to prepare students for the following fields: graduate study in biology, chemistry, mathematics, physics; the study of medicine and dentistry; the teaching of science in high school; technical laboratory work in rubber chemistry; dietetics and clothing; technical laboratory work in applied physics; medical technology; expert technical service.

## OBJECTIVES OF THE SOCIAL SCIENCES DIVISION

To give students cultural and useful information in the fields of economics, history, political science, and sociology.

To inculcate in students a sense of social responsibility, and a respect for the opinions and rights of others; to equip them with a knowledge of human relationships and with qualities of leadership so that they may function worthily in, and seek to improve, our social order; and to enable them to enjoy human fellowship and to maintain a saving sense of humor in the process of social adjustment.

To supply the local community with expert service in the field of social science.

To provide students with a background for careers in: government service, high school teaching of history and social studies, labor relations, business, politics.

To prepare students for graduate study in: business, public administration, law, social work, other fields.

## REQUIREMENTS FOR ADMISSION

To be admitted to Buchtel College of Liberal Arts the student must have completed satisfactorily at least 64 credits of work with at least a 2.0 ratio; have completed the required General Studies courses; have completed the departmental or divisional prerequisites, and have the approval of the Dean of the college.

Requirements for admission to graduate study will be found in the Graduate Division section of the Catalog.

## REQUIREMENTS FOR DEGREES

1. Electives included in the 128 credits of total work required for the degree may consist of any courses offered for credit in the University provided that the prerequisites as set forth in the Catalog are met and further provided that not more than two credits of physical education activities, eight of applied music, four of music organizations, and four of typing are included. (Credit limitations on applied music and music organizations do not apply to the Bachelor of Music degree.)
2. The recommendation of the student's major professor.
3. Except in the labor relations and medical technology curriculums, completion of the second year of a foreign language on the university level (French, German, Spanish or Latin 43-44.)
4. Other requirements are set forth in the section on "University Degree Requirements" and on the following pages.

## DEGREES

The following degrees are granted in the divisions:

The Humanities: Bachelor of Arts; Bachelor of Music.

The Social Sciences: Bachelor of Arts; Bachelor of Science in Labor Relations.

The Natural Sciences: Bachelor of Science; Bachelor of Science in Medical Technology. (However, at the discretion of the dean, students majoring in mathematics may be granted the Bachelor of Arts degree if much of their work is in the humanities or social sciences.)

For information concerning advanced degrees see the section on "Graduate Study."

## THE MAJOR FIELD

To qualify for graduation a student must concentrate or major in the work of a department or division of the college. The major will consist of from 24 to 64 credits in addition to the required General Studies and foreign language courses. Part or all of these credits may be taken in specifically required courses depending upon the major chosen. The longer and more professional majors should be started during the first or second year when the student is still under the guidance of the Student Personnel Office. The shorter, liberal arts majors need not be declared before the end of the second year when the student is ready for promotion to Buchtel College.

Ordinarily a student will select a department in which to major. The exact requirements for each such major will be found on the following pages in the section headed "Departments of Instruction." Some departments offer more than one type of major. No minor is required, but in some cases the major includes certain courses in other departments. As soon as the student is promoted to the college, the head of his major department becomes his academic adviser.

Students who desire a broader education than the departmental major offers may elect a divisional major and qualify in the general area of the humanities, the social sciences or the natural sciences. Such students meet only the requirements of the chosen divisional major as described on the following pages in the section headed "Divisions of Instruction." As soon as the student contemplating a divisional major is promoted to the college, the chairman of his major division becomes his academic adviser.

## PREPARATION FOR HIGH SCHOOL TEACHING

Students interested in a teaching career on the high school level may qualify for certification by the State Department of Education while enrolled in Buchtel College of Liberal Arts. Generally their Liberal Arts major subject will also constitute a teaching major. The Education and Psychology courses required for the secondary school teaching certificate may be taken as electives toward the Liberal Arts degree. Additional elective credits will generally enable the student to qualify in the second teaching field, which is required for certification, without exceeding the 128 credits necessary for graduation from Buchtel College of Liberal Arts. Such a program is particularly recommended for students who plan sometime to go on to graduate school and earn an advanced degree through specialization in their field of major interest.

The number of credits necessary for certification may be determined by reference to the table entitled "Statement of Number of Hours Required For Certification in Various Teaching Fields" located in the College of Education section of this Catalog. The major field must include 6 credits more than the number shown in the table except where that number is 30 or more. The second teaching field must include the number of credits shown in the table.

The Education and Psychology courses required for certification are the following to be taken in the years shown:

*Second Year*

| First Semester | | Credits | Second Semester | | Credits |
|---|---|---|---|---|---|
| 30:41 | General Psychology | 3 | 30:52 | Educational Psychology | 3 |
| 27:55 | Introduction to Education (either semester) | 3 | | | |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 27:113 | High School Methods | 3 | 27:105 | Tests and Measurements | 2 |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 27:201 | Principles of Education | 3 | 27:124 | Student Teaching | 6 |
| | —or— | | 27:115 | School Management | 2 |
| 27:124 | Student Teaching | 6 | | —or— | |
| 27:115 | School Management | 2 | 27:201 | Principles of Education | 3 |

Buchtel College of Liberal Arts students preparing for high school teaching must signify their intention in conference with the Dean of the College of Education near the end of the sophomore year.

## DIVISIONS OF INSTRUCTION

### HUMANITIES

The Humanities Division consists of the Departments of Art, English, Latin and Greek, Modern Languages, Music, Philosophy, and Speech. The divisional major must include in addition to the General Studies and the second year of a foreign language:

a. At least 48 credits in the division, at least 24 credits of which must be in courses on the Upper College level. The minimum of 48 credits must include: At least six credits in each of any five of the following: English, Philosophy, Speech, Music, Art, French, German, Spanish, Latin, and Greek.

b. At least six credits in the Department of History.

### SOCIAL SCIENCES

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

a. At least 54 credits in the division.
b. At least 18 credits and not more than 21 credits in each of two of the four departments. No credits in excess of 21 in any one department will be accepted unless the student meets the major requirements of such department for graduation.
c. At least nine credits in each of the two other departments, or 18 credits in one other department.
d. At least 24 credits of divisional courses on the Upper College level.
e. At least 24 credits outside the division.
f. Passage of a general final examination in the second semester of the senior year.

### NATURAL SCIENCES

The Natural Sciences Division consists of the Departments of Biology, Chemistry, Home Economics, Mathematics, and Physics. The divisional major must include in addition to the General Studies and the second year of a foreign language:

a. At least 54 credits in the division.
b. At least 12 credits each in Biology, Chemistry, Mathematics, and Physics.
c. At least six credits on the Upper College level in the division.

## DEPARTMENTS OF INSTRUCTION

(For course descriptions see "Subjects of Instruction" at the back of this catalog.)

### ART

Requirements for a major in Art are:

The General Studies and the second year of a foreign language (French recommended).

General College courses: 21, 22, 29, 30, 43, 45, 46, 59, 60, 70, and Engineering Drawing 25.

Upper College courses: 131, 132, 200, 201, 202, 105, 102, 175, 176, 115, 116, either 151-152 or 171-172, and six credits of Art electives.

### BIOLOGY

In addition to the General Studies, Biology major students must obtain 36 credits in biology. A greater total may be necessary to meet all preparatory requirements of graduate departments of botany, zoology, and some others.

Major students must include 61-62 and 51-52 in the General College. (Either can be taken in the freshman year, and the other in the sophomore year, or both in the sophomore year.)

Upper College courses may be: (1) General Biological, which may include any combination of Upper College biology courses, but including 265; (2) Zoological, which must include 265, 146, and as many of the following as feasible: 151, 141, 144, 258, 155, 256, 135-136; (3) Botanical, which must include 265, 113-114, 215-216, 146 or 217, or at least one semester of 107-108.

Biological Problems 267-268 is open to seniors, and in exceptional cases to juniors who desire to work on some definite problems.

Geology and 82 do not count in the Biology major.

Required work in other departments: Chemistry 21-22 or 23-24 (for some biological work organic chemistry is also essential); either German 43-44 or French 43-44, and Psychology 41.

#### PRE-MEDICAL

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | WRITTEN ENGLISH | 3 | 1:2 | WRITTEN ENGLISH | 3 |
| 1:19 | PERSONAL DEVELOPMENT | 2 | 1:6 | EFFECTIVE SPEAKING | 2 |
| 1:21 | PHYSICAL EDUCATION | ½ | 1:22 | PHYSICAL EDUCATION | ½ |
| | ROTC 11 or 13* | 1½ | | ROTC 12 or 14* | 1½ |
| 5:21 | CHEMISTRY | 4 | 5:22 | CHEMISTRY | 4 |
| 1:15 | INSTITUTIONS IN THE U. S. | 3 | 1:16 | INSTITUTIONS IN THE U. S. | 3 |
| 17:24 | MATHEMATICS | 4 | | | |

*Men will enroll in Basic ROTC for an additional 1½ credits per semester during the first and second years.

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:3 | WRITTEN ENGLISH | 2 | 1:4 | WRITTEN ENGLISH | 2 |
| 1:7 | EFFECTIVE SPEAKING | 2 | 3:62 | ZOOLOGY | 4 |
| 3:61 | ZOOLOGY | 4 | 5:44 | CHEMISTRY | 4 |
| 5:43 | CHEMISTRY | 5 | 10:22 | GERMAN | 4 |
| 10:21 | GERMAN | 4 | | ROTC 44 or 54* | 1½ |
| | ROTC 43 or 53* | 1½ | | | |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | WESTERN CULTURAL TRADITIONS | 3 | 1:18 | WESTERN CULTURAL TRADITIONS | 3 |
| 3:155 | ANATOMY | 4 | 3:256 | EMBRYOLOGY | 4 |
| 5:107 | CHEMISTRY | 4 | 20:52 | PHYSICS | 4 |
| 20:51 | PHYSICS | 4 | 10:44 | GERMAN | 3 |
| 10:43 | GERMAN | 3 | | | |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 3:235 | PHYSIOLOGY | 3 | 1:101 | SENIOR COURSE | 3 |
| 20:53 | PHYSICS | 4 | 5:106 | CHEMISTRY | 4 |
| 5:105 | CHEMISTRY | 4 | 30:43 | PSYCHOLOGY | 3 |
| 30:41 | PSYCHOLOGY | 3 | 3:148 | GENETICS | 2 |
| | Elective | 2 | | Elective | 3 |

Biology courses listed in third and fourth years may have to be reversed in the schedule because 235, 236, and 148 are given in alternate years.

A Pre-Dental major program comprises the same courses as in the first three years of the Pre-Medical major.

## Medical Technology Course

Three Years (96 credits) at The University of Akron

*First Year**

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | WRITTEN ENGLISH | 3 | 1:2 | WRITTEN ENGLISH | 3 |
| 1:15 | INSTITUTIONS IN THE U. S. | 3 | 1:16 | INSTITUTIONS IN THE U. S. | 3 |
| 1:19 | PERSONAL DEVELOPMENT | 2 | 1:6 | EFFECTIVE SPEAKING | 2 |
| 1:21 | PHYSICAL EDUCATION | ½ | 1:22 | PHYSICAL EDUCATION | ½ |
| 5:23 | CHEMISTRY | 3 | 5:24 | CHEMISTRY | 3 |
| 3:61 | GENERAL ZOOLOGY | 4 | 3:62 | GENERAL ZOOLOGY | 4 |

*Second Year**

| | | | | | |
|---|---|---|---|---|---|
| 1:3 | WRITTEN ENGLISH | 2 | 1:4 | WRITTEN ENGLISH | 2 |
| 1:7 | EFFECTIVE SPEAKING | 2 | 1:18 | WESTERN CULTURAL TRADITIONS | 3 |
| 1:17 | WESTERN CULTURAL TRADITIONS | 3 | 1:11 | NUMBERS COMMUNICATIONS | 2 |
| 3:91 | PHYSIOLOGY | 4 | 30:41 | PSYCHOLOGY | 3 |
| 5:55 | CHEMISTRY | 3 | 5:56 | CHEMISTRY | 3 |
| | Elective | 3 | 3:128 | HISTOLOGY | 3 |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 3:107 | BACTERIOLOGY | 4 | 3:108 | BACTERIOLOGY | 4 |
| 5:47 | CHEMISTRY | 4 | 5:48 | CHEMISTRY | 4 |
| 20:51 | PHYSICS or Elective | 4 | 20:52 | PHYSICS or Elective | 4 |
| 3:127 | HISTOLOGICAL TECHNIQUE | 2 | | Elective | 3 |
| | Elective | 3 | | | |

*Professional Training*

The three-year University curriculum is followed by 12 months of medical technology instruction in one of the four approved schools of medical technology in Akron, City Hospital, Akron General Hospital, St. Thomas Hospital, or Children's Hospital.

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

*Men will enroll in Basic ROTC for an additional 1½ credits per semester during the first and second years.

Women students must take six more hours elective in Humanities or Social Sciences division in place of the six credits of ROTC. Men planning to take advanced ROTC should take German 43-44 in the summer session preceding the third year.

## CHEMISTRY

Requirements for a major:

The General Studies and German 43-44.

General College courses: 21-22, 43, 44; Mathematics 24, 43, 45, 46; Physics 51, 52, 53.

Upper College courses: 105-106, 107, 108, 118, 151-152.

## ECONOMICS

Requirements for a major:

The General Studies and (except in Labor Relations) the second year of a foreign language.

At least 24 credits in the department including 45-46 (which course is prerequisite to all Upper College courses).

### Labor Relations

Students who wish to prepare for careers in the growing field of industrial relations may qualify for the degree of Bachelor of Science in Labor Relations by fulfilling the requirements of the following curriculum. Required courses are shown in capital letters. Other courses listed are recommended.

Labor Economics and Labor Relations Major

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | WRITTEN ENGLISH | 3 | 1:2 | WRITTEN ENGLISH | 3 |
| 1:13 | REASONING AND UNDERSTANDING IN SCIENCE | 3 | 1:14 | REASONING AND UNDERSTANDING IN SCIENCE | 3 |
| 1:19 | PERSONAL DEVELOPMENT | 2 | 1:6 | EFFECTIVE SPEAKING | 2 |
| 1:11 | NUMBERS COMMUNICATION | 2 | 1:22 | PHYSICAL EDUCATION | ½ |
| | ROTC 11 or 13* | 1½ | 22:41 | GENERAL SOCIOLOGY | 3 |
| 1:21 | PHYSICAL EDUCATION | ½ | | ROTC 12 or 14* | 1½ |
| | Elective | 3 | | Elective | 5 |

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:3 | WRITTEN ENGLISH | 2 | 1:4 | WRITTEN ENGLISH | 2 |
| 1:7 | EFFECTIVE SPEAKING | 2 | 1:16 | INSTITUTIONS IN THE U.S. | 3 |
| 1:15 | INSTITUTIONS IN THE U.S. | 3 | 6:46 | PRINCIPLES OF ECONOMICS | 3 |
| 6:45 | PRINCIPLES OF ECONOMICS | 3 | 21:41 | AMERICAN GOVERNMENT | 3 |
| 40:147 | ECONOMIC STATISTICS | 3 | 30:41 | GENERAL PSYCHOLOGY or 30:31 | 3 |
| | ROTC 43 or 53* | 1½ | | ROTC 44 or 54* | 1½ |
| | Elective | 2 | | Elective | 2 |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | WESTERN CULTURAL TRADITIONS | 3 | 1:18 | WESTERN CULTURAL TRADITIONS | 3 |
| 40:163 | PERSONNEL MANAGEMENT | 2 | 40:264 | PERSONNEL RELATIONS | 3 |
| 6:106 | LABOR PROBLEMS | 3 | 6:148 | MONEY AND BANKING or 6:208 Public Finance | 3 |
| 29:121 | ACCOUNTING SURVEY | 3 | | Elective | 6 |
| | Elective | 6 | | | |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 6:239 | AMERICAN LABOR AND THE GOVERNMENT | 3 | 1:101 | SENIOR COURSE | 2 |
| | UPPER COLLEGE ECONOMICS | 3 | 6:260 | THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING | 3 |
| | UPPER COLLEGE SOCIOLOGY or PSYCHOLOGY | 3 | | UPPER COLLEGE ECONOMICS | 3 |
| | Elective | 6 | | UPPER COLLEGE POLITICAL SCIENCE OR SOCIOLOGY | 3 |
| | | | 6:296 | THESIS | 2 |
| | | | | Elective | 3 |

## ENGLISH

Requirements for a major:

The General Studies and the second year of a foreign language (Order of preference: French, German, Latin).

Twenty-six credits in the department including 65-66, 46, and excluding 82, 133, 134, six credits from 41, 72, 73, 155, 163, 164, 201, 209, 212, 221, 222, six credits from 121, 122, 202, 213, 214, 217, 223, 240.

## HISTORY

Requirements for a major:

The General Studies and the second year of a foreign language.

At least 24 credits in the department including 41-42, 45-46, and 242.

The Graduate Record Examination or a general final examination may be required.

*Women majors will substitute 6 credits in electives for ROTC.

## HOME ECONOMICS

Requirements for a major:

The General Studies and the second year of a foreign language.

General College courses: 21, 23, 45, 46, 53, 6:82. In addition, Foods and Nutrition majors will take 5:23, 5:24, 5:55, 5:56, 3:91.

Upper College courses as follows depending upon the major selected:

### FOODS AND NUTRITION

*Third Year*

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| 13:212 Institutional Management | 3 | 13:216 Quantity Cookery | 3 |
| 13:115 Experimental Foods | 3 | 13:65 Child Development | 3 |
| 3:107 Bacteriology | 4 | 13:118 Meal Service and Demonstration Foods | 3 |

*Fourth Year*

| | | | |
|---|---|---|---|
| 13:119 Nutrition in Health | 3 | 13:120 Nutrition in Disease | 3 |
| 27:151 Education | 3 | 13:121 Field Work | 3 |
| 13:122 Home Management Residence | 3 | 13:122 Home Management Residence | 3 |

### TEXTILES AND CLOTHING

*Third Year*

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| 13:105 Tailoring | 3 | 13:106 Advanced Clothing | 3 |
| 13:62 Home Management | 3 | | |

*Fourth Year*

| | | | |
|---|---|---|---|
| 13:107 Advanced Textiles | 3 | 13:58 Selection of House Furnishings | 3 |
| 13:117 Historic Costume | 3 | 13:65 Child Development | 3 |
| 13:122 Home Management Residence | 3 | 13:122 Home Management Residence | 3 |

### GENERAL COURSE

*Third Year*

| | | | |
|---|---|---|---|
| 13:119 Nutrition | 3 | 13:65 Child Development | 3 |
| 13:62 Home Management | 3 | 13:118 Meal Service and Demonstration Foods | 3 |

*Fourth Year*

| | | | |
|---|---|---|---|
| 13:215 Household Equipment | 3 | 13:58 Selection of House Furnishings | 3 |
| 13:105 Tailoring | 3 | 13:106 Advanced Clothing | 3 |
| 13:122 Home Management Residence | 3 | 13:122 Home Management Residence | 3 |

## LATIN AND GREEK

Requirements for a major:

The General Studies.

At least 24 credits in the department including 43-44, 61-62, and 113-114.

## MATHEMATICS

Requirements for a major:

The General Studies and French or German 43-44.

At least 24 credits in the department including 24, 43, 45, 46, 204 and at least five credits in other Upper College courses.

The courses 17:18 and 1:11 do not meet major requirements.

## MODERN LANGUAGES

Requirements for a major:

The General Studies.

At least 24 credits in one of the three languages. Students who have completed two years in one of the three languages in high school will enroll in 43. Those who have had one year or less will enroll in 21.

## MUSIC

Requirements for a major leading to the Bachelor of Arts degree:

The General Studies and the second year of a foreign language.

At least 30 credits in the department including 22, 23, 41, 42, 101, 102, participation in a music organization for 4 semesters, study of piano until passage of jury examination in functional piano. Recommended but not required: 19:111 Aesthetics, 19:112 Philosophy of Art. Further courses in music may be taken as electives. However, no more than 4 credits in music organizations and no more than 8 credits in applied music may be included in the minimum 128 credits required for the degree. It is recommended that students attend the weekly Student Recital, participate in music organizations, and continue their private study of applied music beyond these minimum requirements.

The B.A. music major is intended as a cultural course or as preparation for graduate study but not as professional preparation for a musical or teaching career.

Requirements for a major leading to the Bachelor of Music degree:
The General Studies and the second year of a foreign language.
Thirty-two credits in applied music, 8 credits in music organizarions, 4 credits in 30, 4 credits in 130, 22, 23, 41, 42, 101, 102, 103, 104, 110, 111, 114, 201, 202, passage of jury examination in functional piano, presentation of a senior recital. A junior recital is recommended but not required.
The B.M. program is available only to those students who upon entrance can demonstrate a satisfactory level of accomplishment in musical performance. It is desirable that they also be sufficiently advanced in the study of music to be excused from courses 22 and 23. Study of applied music will be directed according to the student's choice of medium and his career objective.
By extending either the B.A. or B.M. programs to five years, the student may, with careful planning, take the courses in education and psychology required for teaching certification. Both the B.A. and B.M. degrees may be earned in a combination five-year program.
The jury examination in functional piano will be scheduled at the end of any semester by request of the student and will consist of satisfactory performance in the following areas:

1. Prepared accompaniments for elementary teaching pieces, songs, or school choruses.
2. Sight reading of familiar hymns, community songs, or simple accompaniments.
3. Harmonization at the piano of familiar melodies in familiar keys.
4. Preparation and performance by the student alone, of an easy piece for the piano, selected by the teacher not more than 2 weeks before the examination.

## PHILOSOPHY

Requirements for a major:
The General Studies and the second year of a foreign language.
At least 24 credits in the department including 103-104.

## PHYSICS

Requirements for a major:
The General Studies and the second year of a foreign language.
At least 28 credits in the department.
Mathematics 24, 43, 45, 46.
Three semesters of chemistry.

## POLITICAL SCIENCE

Requirements for a major:
The General Studies and the second year of a foreign language.
At least 24 credits in the department including at least three credits on the General College level.

## PSYCHOLOGY

Requirements for a major:
The General Studies and the second year of a foreign language.
At least 24 credits in the department including 41, 47, 216.
Mathematics 57.

## SOCIOLOGY

Requirements for a major:
The General Studies and the second year of a foreign language.
At least 24 credits in the department including 41, 42, 109-110, 206, 210, 215.
Mathematics 57.
Sociology 41 is prerequisite to all Upper College courses in the department unless waived by the department head.

## SPEECH

Requirements for a major:
The General Studies and the second year of a foreign language.
General College courses: 41, 51, 76. In addition Speech Pathology majors will take 54.
Upper College courses:
General: 290, 291 or 292, 293, and at least 9 additional Speech credits including a theatre course and a radio or television course.
Speech Pathology: 151, 204, 271, 272, 273, 274, 277, 293.

# THE COLLEGE OF ENGINEERING

R. D. LANDON, C.E., M.S., *Dean*
E. K. HAMLEN, M.E., *Coordinator*

## HISTORY OF THE COLLEGE

The College of Engineering was established in 1914. Because of the magnitude and diversity of industrial development in the Akron area, the advantages of the cooperative plan were apparent. Accordingly, a five-year course, similar to that originated at the University of Cincinnati by the late Dean Herman Schneider, was developed by the late Dr. Fred E. Ayer, first dean of the College and a pioneer in cooperative engineering education.

All graduating classes followed the cooperative plan until 1942, when the accelerated curriculum was adopted as a temporary expedient to aid the war effort. Instruction on the cooperative plan was resumed in September, 1947.

## ADVISORY COMMITTEE

Mr. G. L. Bruggemeier, Assistant Chief Engineer, The Firestone Tire and Rubber Company.

Mr. Russell DeYoung, Executive Vice President, The Goodyear Tire and Rubber Company.

Mr. J. Earl Gulick, Vice President of Manufacturing, B. F. Goodrich Tire Company, Division of The B. F. Goodrich Company.

Mr. Wendell R. LaDue, Chief Engineer and Superintendent, Water Department, City of Akron.

Mr. Vern Oldham, Patent Attorney, Oldham and Oldham.

Mr. Francis W. Stafford, Consulting Engineer.

Mr. Ernest S. Theiss, Assistant Manager, Rubber Machinery Division, National Rubber Machinery Company.

## OBJECTIVES OF THE COLLEGE

It is the aim of the College of Engineering to provide basic training for effective living in a modern society as well as to provide the fundamentals necessary for a career in engineering.

Since the fundamentals in all branches of engineering are identical, the program for the first two years is the same for all students. Upon satisfactory completion of this phase of the curricula, students select their field of specialization and are promoted to the Upper College department of their choice.

Since the cooperative phase of the curricula begins in the third year, it is necessary that all students complete the work of the first two years before they are eligible for placement on cooperative work assignments.

Students who are unable to carry the courses as scheduled should allow extra time, probably one year, for completion of the requirements for graduation.

The College of Engineering offers two-year pre-engineering curricula in the fields of Aeronautical, Chemical, and Metallurgical Engineering. Individual programs will be developed in order to prepare the student to enter the degree-granting college of his choice.

## THE COOPERATIVE PLAN

The cooperative plan provides for a coordinated sequence of alternate periods of classroom instruction and industrial employment.

During the cooperative phase of the five-year course, the student body is divided into two equal groups, Sections A and B. While those in Section A attend classes for the first period, the students in Section B are employed in industry. During the second period those in Section A report for industrial employment and the students in Section B attend classes.

This schedule of alternation continues throughout the calendar year. By pairing a student in Section A with an alternate in Section B and by deducting vacations from school periods, employers are assured that one of each pair will be on duty in industry every working day of the year.

The cooperative plan provides simultaneously for the development of fundamental principles in the classroom and for their application in industrial practice. The cooperative student has the opportunity to find the type of work and industrial organization in which he can best apply his individual ability. He gains an appreciation of the problems of labor and management by first-hand experience. He develops mature judgment by coping with the everyday problems of the industrial world. The employer of cooperative students has the opportunity to select and train students whose abilities and aptitudes can be adapted to the needs of his technical staff requirements.

At The University of Akron, engineering students attend classes full time for two semesters during the first year and for two and one-half semesters during the second year. At the beginning of the third year, students alternate classroom instruction with industrial employment in periods of one-half semester. The cooperative phase extends through the third, fourth and first half of the fifth years. At that time, all students return to classes for a final semester before graduation.

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

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

## THE ENGINEERING SCHEDULE

### FRESHMAN YEAR

(Full Time)

| First Semester (Fall) | | Second Semester (Spring) | |
|---|---|---|---|
| Section A | School (1)* | Work (1) | School (2) | Work (2) |
| Section B | Work (1)* | School (1) | Work (2) | School (2) |

### SOPHOMORE YEAR

(Full Time)

| First Semester (Fall) | | Second Semester (Spring) | | Third Term* (Summer) |
|---|---|---|---|---|
| Section A | School (1)* | Work (1) | School (2) | Work (2) | School (3) |
| Section B | Work (1)* | School (1) | Work (2) | School (2) | Work (3) |

### PRE-JUNIOR YEAR

(Cooperative)

| First Semester (Fall) | | Second Semester (Spring) | | Third Term (Summer) |
|---|---|---|---|---|
| Section A | School (1)* | Work (1) | School (2) | Work (2) | School (3) |
| Section B | Work (1)* | School (1) | Work (2) | School (2) | Work (3) |

### JUNIOR YEAR

(Cooperative)

| First Semester (Fall) | | Second Semester (Spring) | | Third Term (Summer) |
|---|---|---|---|---|
| Section A | Work (3) | School (4) | Work (4) | School (5) | Work (5) |
| Section B | School (3) | Work (4) | School (4) | Work (5) | School (5) |

### SENIOR YEAR

| (Cooperative) First Semester (Fall) | | (Full Time) Second Semester (Spring) |
|---|---|---|
| Section A | School (6) | Work (6) |
| Section B | Work (6) | School (6) |

## REQUIREMENTS FOR ADMISSION

In addition to the general requirements for admission to the University, students applying for admission to the College of Engineering must present the following secondary school credits:

Algebra 1½ units — Plane Geometry 1 unit
Solid Geometry or Trigonometry ½ unit
Chemistry or Physics 1 unit

It is strongly recommended that applicants in Engineering present additional credits in mathematics and physical science.

Since the Engineering curricula have been designed to operate on an annual rather than on a semester basis, beginning students are regularly admitted only in September. In special cases, admission may be granted in February.

All beginning students register in the General College. Those admitted in Engineering will be eligible for transfer to the College of Engineering after satisfactory completion of the first semester Engineering schedule.

Because of the nature of the cooperative course, applicants from other universities or colleges should plan to enter the College of Engineering not later than the beginning of the sophomore year.

*All third terms and all cooperative school and work periods are of one-half semester duration.

## DEGREES

The College of Engineering offers curricula on the cooperative plan in Civil, Electrical, and Mechanical Engineering with an Industrial Option in Mechanical Engineering. The degrees conferred include the Bachelor of Civil Engineering, Bachelor of Electrical Engineering, and Bachelor of Mechanical Engineering.

For the Master's degree program in Engineering, see the Graduate Study Division.

## REQUIREMENTS FOR GRADUATION

In addition to the regular University requirements, candidates for the Bachelor's degree in Engineering must: 1) earn credit in all of the required courses listed in the schedule, 2) accumulate at least 156 credits, 3) earn a quality point ratio of at least 2 in departmental courses as well as in total credits, and 4) complete six cooperative work periods satisfactorily.

## BASIC REQUIREMENTS FOR ALL DEGREES*

### FRESHMAN YEAR
(Full Time)

**FIRST SEMESTER (Fall)**

| | | Rec. | Lab. | Cr. |
|---|---|---|---|---|
| 17:24 | Algebra-Trig. | 4 | 0 | 4 |
| 5:27 | Chemistry | 3 | 3 | 4 |
| 33:25 | Engr. Drawing | 1 | 6 | 3 |
| 33:23 | Survey of Engr. | 1 | 0 | 0 |
| 1:19 | Personal Development | 2 | 0 | 2 |
| 1:1 | Written English | 3 | 0 | 3 |
| | ROTC | 2 | 1 | 1½ |
| 1:21 | Phys. Ed. | 0 | 2 | ½ |
| | | 16 | 12 | 18 |

**SECOND SEMESTER (Spring)**

| | | Rec. | Lab. | Cr. |
|---|---|---|---|---|
| 17:43 | Anal. Geometry | 4 | 0 | 4 |
| 5:28 | Chemistry | 3 | 3 | 4 |
| 33:43 | Desc. Geometry | 1 | 5 | 3 |
| 1:2 | Written English | 3 | 0 | 3 |
| 1:6 | Effective Spkg. | 2 | 0 | 2 |
| | ROTC | 2 | 1 | 1½ |
| 1:22 | Phys. Ed. | 0 | 2 | ½ |
| | | 15 | 11 | 18 |

### SOPHOMORE YEAR
(Full Time)

**FIRST SEMESTER (Fall)**

| | | Rec. | Lab. | Cr. |
|---|---|---|---|---|
| 17:45 | Diff. Calculus | 4 | 0 | 4 |
| 20:31 | Physics | 4 | 2 | 5 |
| 33:36 | Engr. Matls. | 3 | 0 | 3 |
| 1:15 | Instit. in the U.S. | 3 | 0 | 3 |
| 1:17 | Western Cult. | 2 | 2 | 3 |
| | ROTC | 2 | 1 | 1½ |
| | | 18 | 5 | 19½ |

**SECOND SEMESTER (Spring)**

| | | Rec. | Lab. | Cr. |
|---|---|---|---|---|
| 17:46 | Int. Calculus | 4 | 0 | 4 |
| 20:32 | Physics | 4 | 2 | 5 |
| 33:48 | Applied Mechanics I | 3 | 0 | 3 |
| 6:45 | Economics | 3 | 0 | 3 |
| 1:18 | Western Cult. | 2 | 2 | 3 |
| | ROTC | 2 | 1 | 1½ |
| | | 18 | 5 | 19½ |

### THIRD TERM (Half Semester)
(Summer)

| | Subject | Rec. | Lab. | Cr. |
|---|---|---|---|---|
| | 33:49 Applied Mechanics II | 6 | 0 | 3 |
| (1) | 34:47 Surveying I | 2 | 6 | 2 |
| (1) | 35:30 D.C. and A.C. Principles | 3 | 3 | 2 |
| (2) | 35:31 E.E. Fundamentals | 5 | 3 | 3 |
| (3) | 36:41 Heat Power | 5 | 3 | 3 |
| (4) | 40:62 Production Management | 6 | 0 | 3 |
| | For C.E. Students | 16 | 12 | 10 |
| | For E.E. Students | 16 | 6 | 9 |
| | For M.E. Students | 17 | 9 | 10 |

(1) For C.E. and M.E. students.
(2) For E.E. students.
(3) For C.E. and E.E. students.
(4) For M.E. students.

*Students enrolled prior to September, 1958 will follow schedules in previous catalogs.

# DEPARTMENTS OF INSTRUCTION

## CIVIL ENGINEERING

The field of civil engineering may be divided into four branches covering structures, transportation, hydraulics and sanitation.

The structural engineer designs and supervises the construction of such facilities as bridges, buildings, dams and tunnels. He must consider not only utility and safety but also economy and appearance. Often the unseen part of structures, the foundation, presents problems most difficult of solution.

In the field of transportation, the civil engineer applies his design and construction ability to railroads, highways, airports and water transportation, including harbor facilities and waterways.

The hydraulic engineer is concerned with the control and conservation of water for such projects as water supply, irrigation, drainage, flood control, navigation and water power. In this field, determination of economic feasibility is of utmost importance.

The sanitary engineer devotes his efforts to improving the cleanliness and healthfulness of both industrial and residential areas. Safe water supplies and adequate facilities for the removal of wastes are unquestioned necessities in modern communities.

Many civil engineers are employed by departments of federal, state and local governments. Others are employed by construction companies or by firms of consulting engineers.

### SCHEDULE OF REQUIRED COURSES
### PRE-JUNIOR YEAR
### (Cooperative)

#### FIRST SEMESTER
#### (Fall)
#### (Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:101 Mechanics of Matls. I | 6 | 0 | 3 |
| 17:113 Advanced Math. I | 4 | 0 | 2 |
| 33:113 Technical Discourse I | 2 | 0 | 1 |
| 33:137 Engr. Materials Lab. I | 0 | 3 | ½ |
| 35:132 Electrical Machinery | 4 | 3 | 2½ |
| | 16 | 6 | 9 |

#### SECOND SEMESTER
#### (Spring)
#### (Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:102 Mechanics of Matls. II | 3 | 0 | 1½ |
| 17:114 Advanced Math. II | 4 | 0 | 2 |
| 33:114 Technical Discourse II | 2 | 0 | 1 |
| 33:138 Engr. Materials Lab. II | 0 | 3 | ½ |
| 34:105 Structural Analysis | 5 | 0 | 2½ |
| | 14 | 3 | 7½ |

#### THIRD TERM (Half Semester)
#### (Summer)
#### (Section A Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 34:109 Surveying II | 2 | 6 | 2 |
| 34:106 Indeter. Structures | 5 | 3 | 3 |
| | 14 | 9 | 8½ |

### JUNIOR YEAR
### (Cooperative)

#### FIRST SEMESTER
#### (Fall)
#### (Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 34:109 Surveying II | 2 | 6 | 2 |
| 34:106 Indeter. Structures | 5 | 3 | 3 |
| | 14 | 9 | 8½ |

#### (Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Tech. Discourse IV | 2 | 0 | 1 |
| 34:116 Surveying III | 2 | 6 | 2 |
| 34:114 Steel Design I | 5 | 0 | 2½ |
| 34:107 Hydrology | 4 | 0 | 2 |
| 34:111 Hydraulics | 2 | 6 | 2 |
| | 15 | 12 | 9½ |

#### SECOND SEMESTER
#### (Spring)
#### (Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Technical Discourse IV | 2 | 0 | 1 |
| 34:116 Surveying III | 2 | 6 | 2 |
| 34:114 Steel Design I | 5 | 0 | 2½ |
| 34:107 Hydrology | 4 | 0 | 2 |
| 34:111 Hydraulics | 2 | 6 | 2 |
| | 15 | 12 | 9½ |

#### (Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 33:128 Engineering Economy | 5 | 0 | 2½ |
| 34:115 Steel Design II | 5 | 0 | 2½ |
| 34:121 Water Supply | 5 | 0 | 2½ |
| 34:112 Concrete Mixtures Lab. | 0 | 6 | 1 |
| | 17 | 6 | 9½ |

*Section A attends classes for first half of semester.
Section B attends classes for second half of semester.

THIRD TERM (Half Semester)
(Summer)
(Section B Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 33:128 Engineering Economy | 5 | 0 | 2½ |
| 34:115 Steel Design II | 5 | 0 | 2½ |
| 34:121 Water Supply | 5 | 0 | 2½ |
| 34:112 Concrete Mixtures Lab. | 0 | 6 | 1 |
| | 17 | 6 | 9½ |

SENIOR YEAR

FIRST SEMESTER (Cooperative)
(Fall)
(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:117 Reinf. Conc. Des. I | 5 | 0 | 2½ |
| 34:122 Sewerage | 5 | 0 | 2½ |
| 34:120 Soil Mechanics | 4 | 6 | 3 |
| 34:123 Sanitary Laboratory | 0 | 6 | 1 |
| 34:127 C. E. Seminar I | 1 | 0 | ½ |
| | 15 | 12 | 9½ |

SECOND SEMESTER (Full Time)
(Spring)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:118 Reinf. Conc. Des. II | 3 | 0 | 3 |
| 34:124 Sanitary Design | 0 | 3 | 1 |
| 34:125 Highways | 2 | 0 | 2 |
| 34:113 Bitum. Mixtures Lab. | 0 | 3 | 1 |
| 34:126 Community Planning | 3 | 0 | 3 |
| 34:130 C. E. Seminar II | 1 | 3 | 2 |
| 20:150 Modern Physics | 2 | 0 | 2 |
| Non-Technical Elective** | 3 | 0 | 3 |
| | 14 | 9 | 17 |

## ELECTRICAL ENGINEERING

The many branches of electrical engineering include production and distribution of electrical energy; development and manufacture of electrical equipment and products ranging in size from huge generators to miniature electric bulbs; design, installation and operation of communication systems including telephone, telegraph, radio and television; adaptation of electronic principles to industrial needs such as indicating and control mechanisms; design of modern lighting, both indoors and out; design of electrical systems for vehicles, ships and aircraft and cooperation in such fields as electro-chemistry, metallurgy and medicine.

The growth of the electrical industry has been steady and rapid. Electrical manufacturing is one of the leading American industries and includes organizations of all sizes from the privately owned shop employing a few workers to the huge corporation manufacturing hundreds of items and employing thousands of men and women.

The large majority of electrical engineers are employed by utility companies and manufacturers of electrical equipment. Other employment opportunities may be found with large industrial firms and with electrical contractors and consultants.

SCHEDULE OF REQUIRED COURSES
PRE-JUNIOR YEAR
(Cooperative)

FIRST SEMESTER
(Fall)
(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:101 Mechanics of Matls. I | 6 | 0 | 3 |
| 17:113 Advanced Mathematics I | 4 | 0 | 2 |
| 33:113 Technical Discourse I | 2 | 0 | 1 |
| 33:137 Engr. Materials Lab I | 0 | 3 | ½ |
| 35:133 A. C. Circuits I | 5 | 3 | 3 |
| | 17 | 6 | 9½ |

SECOND SEMESTER
(Spring)
(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 17:114 Advanced Math. II | 4 | 0 | 2 |
| 33:114 Technical Discourse II | 2 | 0 | 1 |
| 33:138 Engr. Materials Lab. II | 0 | 3 | ½ |
| 35:134 A. C. Circuits II | 5 | 3 | 3 |
| 35:143 Elect. Mach'y. I | 3 | 0 | 1½ |
| 35:139 Electromag. Fields | 4 | 0 | 2 |
| 35:175 Electrical Lab. I | 0 | 3 | ½ |
| | 18 | 9 | 10½ |

THIRD TERM (Half Semester)
(Summer)
(Section A Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 35:144 Elect. Mach'y. II | 3 | 0 | 1½ |
| 35:136 Elect. Measurements I | 3 | 0 | 1½ |
| 35:161 Electronics I | 3 | 0 | 1½ |
| 35:176 Electrical Lab. II | 0 | 9 | 1½ |
| | 16 | 9 | 9½ |

*Section A attends classes for first half of semester.
Section B attends classes for second half of semester.
**In field of Social Sciences or Humanities.

## JUNIOR YEAR
(Cooperative)

### FIRST SEMESTER
(Fall)

(Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 35:144 Elect. Mach'y. II | 3 | 0 | 1½ |
| 35:136 Elect. Measurements I | 3 | 0 | 1½ |
| 35:161 Electronics I | 3 | 0 | 1½ |
| 35:176 Electrical Lab. II | 0 | 9 | 1½ |
| | 16 | 9 | 9½ |

(Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Technical Discourse IV | 2 | 0 | 1 |
| 35:146 Elect. Mach'y. III | 3 | 0 | 1½ |
| 35:137 Elect. Measurements II | 3 | 0 | 1½ |
| 35:135 Illumination | 4 | 0 | 2 |
| 35:162 Electronics II | 3 | 0 | 1½ |
| 35:177 Electrical Lab. III | 0 | 9 | 1½ |
| | 15 | 9 | 9 |

### SECOND SEMESTER
(Spring)

(Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Technical Discourse IV | 2 | 0 | 1 |
| 35:146 Elect. Mach'y. III | 3 | 0 | 1½ |
| 35:137 Elect. Measurements II | 3 | 0 | 1½ |
| 35:135 Illumination | 4 | 0 | 2 |
| 35:162 Electronics II | 3 | 0 | 1½ |
| 35:177 Electrical Lab. III | 0 | 9 | 1½ |
| | 15 | 9 | 9 |

(Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 35:164 Electronics III | 3 | 0 | 1½ |
| 35:147 Elect. Mach'y. IV | 3 | 0 | 1½ |
| 35:140 Elect. Transients | 5 | 0 | 2½ |
| 35:138 Elect. Measurements III | 3 | 0 | 1½ |
| 35:178 Electrical Lab. IV | 0 | 9 | 1½ |
| | 16 | 9 | 9½ |

## THIRD TERM (Half Semester)
(Summer)

(Section B Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 35:164 Electronics III | 3 | 0 | 1½ |
| 35:147 Elect. Mach'y. IV | 3 | 0 | 1½ |
| 35:140 Elect. Transients | 5 | 0 | 2½ |
| 35:138 Elect. Measurements III | 3 | 0 | 1½ |
| 35:178 Electrical Lab. IV | 0 | 9 | 1½ |
| | 16 | 9 | 9½ |

## SENIOR YEAR

### FIRST SEMESTER (Cooperative)
(Fall)

(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 35:149 Inds. Instrumentation | 4 | 0 | 2 |
| 35:169 Electronics IV | 3 | 0 | 1½ |
| 35:158 Trans. Lines & Netw. | 5 | 0 | 2½ |
| 35:170 Computers | 4 | 0 | 2 |
| 35:179 Electrical Lab. V | 0 | 9 | 1½ |
| | 16 | 9 | 9½ |

### SECOND SEMESTER (Full Time)
(Spring)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 35:168 Ultra High Freq. | 3 | 0 | 3 |
| 35:171 Servo-Mechanisms | 3 | 0 | 3 |
| 35:167 E. E. Problems | 0 | 3 | 1 |
| 20:150 Modern Physics | 2 | 0 | 2 |
| 35:180 Electrical Lab. VI | 0 | 9 | 3 |
| Non-Technical Elective** | 3 | 0 | 3 |
| | 11 | 12 | 15 |

## MECHANICAL ENGINEERING

The more important branches of mechanical engineering include machine design, manufacturing and production methods, and the heat-power field.

The importance of machine design in this age is self-evident. The mechanical engineer designs and supervises the manufacture of not only the machines used in everyday life but also the machine tools which make these machines. The design of special equipment required in industries as unrelated as textile and toy manufacturing challenges the ingenuity of the mechanical engineer.

In the field of heat-power, the mechanical engineer designs, builds and operates boilers, turbines and engines which convert the heat content of fuels into useful energy

*Section A attends classes for first of semester.
Section B attends classes for second half of semester.
**In field of Social Sciences or Humanities.

for immediate application or for conversion into electrical energy which can be distributed over wide areas. Motive power for automobiles, railroads, ships and aircraft is being constantly improved with respect to both thermal efficiency and dependability.

The design and installation of complete air conditioning equipment for the control of both temperature and humidity is a relatively recent but major development in the heat-power field.

All the way from the mine to the final delivery of finished products, the knowledge and skill of the mechanical engineer have aided the development of modern industry to the point at which more people can purchase more goods for less cost.

The great majority of mechanical engineers are employed in a wide variety of capacities in industry but a limited number act as independent consultants.

## SCHEDULE OF REQUIRED COURSES
## PRE-JUNIOR YEAR
(Cooperative)

### FIRST SEMESTER
(Fall)
(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:101 Mechanics of Matls. I | 6 | 0 | 3 |
| 17:113 Advanced Math. I | 4 | 0 | 2 |
| 33:113 Technical Discourse I | 2 | 0 | 1 |
| 33:137 Engr. Materials Lab. I | 0 | 3 | ½ |
| 35:132 Electrical Machinery | 4 | 3 | 2½ |
| | 16 | 6 | 9 |

### SECOND SEMESTER
(Spring)
(Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 34:102 Mechanics of Matls. II | 3 | 0 | 1½ |
| 17:114 Advanced Math. II | 4 | 0 | 2 |
| 33:114 Technical Discourse II | 2 | 0 | 1 |
| 33:138 Engr. Materials Lab. II | 0 | 3 | ½ |
| 33:112 Manufacturing Methods | 4 | 0 | 2 |
| 36:177 Thermodynamics I | 4 | 3 | 2½ |
| | 17 | 6 | 9½ |

### THIRD TERM (Half Semester)
(Summer)
(Section A Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 35:154 Electronic Fundamentals | 4 | 3 | 2½ |
| 36:173 Mechanisms | 4 | 9 | 3½ |
| | 15 | 12 | 9½ |

## JUNIOR YEAR
(Cooperative)

### FIRST SEMESTER
(Fall)
(Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:171 Fluid Mechanics | 5 | 0 | 2½ |
| 33:115 Technical Discourse III | 2 | 0 | 1 |
| 35:154 Electronic Funda. | 4 | 3 | 2½ |
| 36:173 Mechanisms | 4 | 9 | 3½ |
| | 15 | 12 | 9½ |

(Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Technical Discourse IV | 2 | 0 | 1 |
| 33:135 Physical Metallurgy | 4 | 3 | 2½ |
| 36:181 Thermodynamics II | 4 | 3 | 2½ |
| 36:182 Machine Design I | 4 | 6 | 3 |
| | 14 | 12 | 9 |

### SECOND SEMESTER
(Spring)
(Section B — First Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:116 Technical Discourse IV | 2 | 0 | 1 |
| 33:135 Physical Metallurgy | 4 | 3 | 2½ |
| 36:181 Thermodynamics II | 4 | 3 | 2½ |
| 36:182 Machine Design I | 4 | 6 | 3 |
| | 14 | 12 | 9 |

(Section A — Second Half)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 33:128 Engineering Economy | 5 | 0 | 2½ |
| 36:170 Engr. Administration I | 3 | 0 | 1½ |
| 36:183 Machine Design II | 2 | 6 | 2 |
| 36:184 Heat Transfer | 4 | 3 | 2½ |
| | 16 | 9 | 9½ |

*Section A attends classes for first half of semester.
Section B attends classes for second half of semester.

### THIRD TERM (Half Semester)
### (Summer)
### (Section B Only)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 33:117 Technical Discourse V | 2 | 0 | 1 |
| 33:128 Engineering Economy | 5 | 0 | 2½ |
| 36:170 Engr. Administration I | 3 | 0 | 1½ |
| 36:183 Machine Design II | 2 | 6 | 2 |
| 36:184 Heat Transfer | 4 | 3 | 2½ |
| | 16 | 9 | 9½ |

## SENIOR YEAR

### FIRST SEMESTER (Cooperative)
### (Fall)
### (Sections A and B)*

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 35:149 Inds. Instrumentation | 4 | 3 | 2½ |
| 36:174 Fluid Mechanics Lab. | 0 | 6 | 1 |
| 36:169 Engr. Administration II | 6 | 0 | 3 |
| 36:191 Thermodynamics III | 3 | 3 | 2 |
| 36:198 Machine Design III | 4 | 0 | 2 |
| | 17 | 12 | 10½ |

### SECOND SEMESTER (Full Time)
### (Spring)

| Subject | Rec. | Lab. | Cr. |
|---|---|---|---|
| 36:187 Heating & Air Cond. | 3 | 0 | 3 |
| 36:192 Heat Machines | 3 | 3 | 4 |
| 36:196 Inspection Trips | 0 | 3 | 1 |
| 36:197 M. E. Problems | 1 | 6 | 3 |
| 20:150 Modern Physics | 2 | 0 | 2 |
| Non-Technical Elective** | 3 | 0 | 3 |
| | 12 | 12 | 16 |

## INDUSTRIAL OPTION

Mechanical Engineering students may elect an Industrial Option by substituting specifically approved courses in the field of Industrial Management for certain Mechanical Engineering courses.

*Section A attends classes for first half of semester.
Section B attends classes for second half of semester.

**In Social Sciences or Humanities.

# THE COLLEGE OF EDUCATION

HOWARD R. EVANS, PH.D., *Dean*

## HISTORY OF THE COLLEGE

Perkins Normal School, established by the Akron Board of Education, marked the beginning of cooperative relations between The University of Akron and the Akron Public Schools in the training of teachers. In 1921 Perkins Normal School became Teachers College of The University of Akron.

In 1935 the name was changed to the College of Education. The close identity of the College of Education with the Akron Public Schools has been maintained through student practice teaching in the Akron Public Schools.

Prospective teachers get a broad and valuable experience through actual classroom observation. Spicer Elementary School is used for observation and laboratory experiences. University students get practical knowledge of classroom procedures by student teaching in Akron Public Schools.

Approximately two-thirds of Akron Public School teachers are former students of The University of Akron. Close cooperative relationships are also maintained with Summit County and surrounding area schools, where many former University of Akron students are teaching.

The College of Education also provides professional opportunities in the field of teaching nursing.

## OBJECTIVES OF THE COLLEGE

The objectives of the College of Education are:

1. To provide as broad ıd liberal an education as possible.
2. To provide rich and complete experiences which will make for success as classroom teachers, administrators, counsellors, and school psychologists.
3. To encourage the personal development of each student toward the achievement of dynamic and mature personality and character.
4. To provide opportunities for the improvement of teachers in service and to enable them to qualify for broader responsibilities. To satisfy this need, both undergraduate and graduate courses are offered in the Evening Division and Summer sessions.
5. To make possible between the faculty of the College of Education and the administrative staffs of the Akron Public Schools and other area school systems conferences and visits which we believe enrich all concerned and provide for dynamic growth of professional abilities.
6. The purpose of the nursing program is to provide opportunity for sound professional preparation in basic nursing, the development of acceptable professional attitudes and competence in nursing, and to provide opportunity for a broad and liberal education and development of desirable personal characteristics, so that the graduate may be able to take her place in meeting the nursing needs of the individual and the community.

7. To provide the knowledge, attitudes and abilities needed to succeed in professional activities where psychology is the primary consideration.

8. To provide leadership and service to the community, the professions, and industry in all areas where the fields of education, nurses, physical education and psychology have a definite contribution to make. Some illustrations are: personnel problems in business and industry; emotional and learning problems of children and adults; professional problems of teachers and public school administrators; professional problems of nurses, hospital staffs, and community organizations for group work and recreation.

9. To encourage research in all the areas possible so that the faculty and the College as such will continue as a growing and effective professional force. Research and continued field service are the best guarantees of the continued virility of the institution and its faculty.

## REQUIREMENTS FOR ADMISSION

1. Each student must have an average quality point ratio of 2 in all work carried.

2. Each student is required to meet a satisfactory standard with respect to personality. This rating is made by instructors conducting the courses in Education in the General College, by the office of the Director of Student Personnel, by means of a standardized rating, or a combination of all.

3. Each student planning to major in a special field may be required to take an examination by the special department.

4. Each prospective high school teacher must be prepared for certification in two subjects, one major and a minor. Three teaching fields are recommended.

5. Each prospective high school teacher should be prepared to enter Upper College courses in two teaching fields.

## STUDENT ADVISERS

Students should confer with the following persons, depending upon the fields in which they expect to teach. Students should also feel free to consult the Dean of the College of Education.

Art ..... MISS DAVIS
Commercial Subjects ..... MR. DOUTT, MR. LEIGH, MRS. TUCKER
Elementary
Kindergarten-Primary ..... MISS BECKER, MRS. PAINTER
Two-Year and Four-Year Elementary ..... MR. DISTAD, MRS. WENGER, MR. JONES, MR. CHRISP, MR. SANDERS
High School ..... MISS RIEDINGER, MR. JOHNSON, MR. PAINTER, MR. WATT
Home Economics ..... MISS BEAR
Music ..... MR. HUTCHINS
Nursing, Nursing Education ..... MISS TOVEY
Physical Education ..... MR. COCHRANE, MRS. WAICKMAN, MR. MALUKE
Speech ..... MR. SANDEFUR
Graduate ..... DEAN EVANS AND OTHERS

## REQUIREMENTS FOR DEGREES

| | | | Credits |
|---|---|---|---|
| 1. | *General Education requirements:* | | |
| | 1 :1-2 | Written English | 4 |
| | 1 :3-4 | Written English | 4 |
| | 1 :6-7 | Effective Speaking | 2 |
| | 1 :11 | Numbers Communication | 2 |
| | 1 :13-14 | Reasoning and Understanding in Science | 6 |
| | 1 :15-16 | Institutions in the United States | 6 |
| | 1 :17-18 | Western Cultural Traditions | 6 |
| | 1 :19 | Personal Development | 2 |
| | 1 :21-22 | Physical Education | 1 |
| | 30 :41 | General Psychology | 3 |
| | | Military Science and Tactics (Men) | 6 |
| | 1 :101 | Senior Course | 2 |
| 2. | *Pre-professional requirements:* | | |
| | 30 :52 | Educational Psychology | 3 |
| | 27 :55 | Introduction to Education | 3 |
| 3. | *Professional courses:* | | |
| | 27 :105 | Tests and Measurements | 2 |
| | 27 :115 | School Management | 2 |
| | 27 :124 | Student Teaching | 6 |
| | | Methods | Varies with teaching field |
| | 27 :201 | Principles of Education | 3 |

4. *Major field plus one minor, depending upon field.*

Each student preparing for secondary school teaching must have at least two academic teaching fields. One field shall be at least 6 credits more than the minimum required by the State Department of Education, except where the teaching field is 30 credits or more. A student who has a major in either of the special fields Music, Art or Business Education is not required to have a second teaching field. In all of the curricula leading to preparation for elementary school teaching, additional teaching fields or minors are not required.

Students are required at all times to maintain a 2.5 scholastic average in the major field, 2 in the minor field (or fields) and in their over-all total average.

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

The College of Education offers curricula in the following fields: high school teaching in academic subjects, the special fields such as Physical Education, Music, Art, Secretarial Science, Commerce, Speech, and Home Economics; Nursery School, Kindergarten-Primary, all grades of the Elementary School; Nursing and Nursing Education.

The distribution of subjects required for degrees in certain fields has been set forth in subsequent pages to help students see more clearly the entire course requirements for the degrees. These outlines should, however, not be considered rigid. They are for guidance purposes and should be modified, if necessary, in consultation with the adviser.

The State of Ohio will grant a cadet provisional elementary school certificate upon completion of a two-year program. Such a program is provided by the College of Education.

*Any student in the University who is not enrolled in the College of Education and who wishes to teach should register with the Dean of the College of Education at least two years prior to the time he expects to be eligible to teach.*

Students who complete a prescribed four-year curriculum of 128 credits and have the required quality of work receive the B.A. in Education or the B.S. in Education degree.

The B.A. degree in Education is granted to those whose major is in one of the academic fields.

The B.S. degree in Education is granted to those whose major is in one of the special fields such as Art, Business Education, Health and Physical Education, or Music. This degree is also granted to those whose major is in the field of elementary education.

The degree B.S. in Nursing is granted to those who complete the regular collegiate program. The B.S. in Nursing Education degree is granted to graduate nurses who return to complete the requirements for the degree.

For information concerning advanced degrees see the section on Graduate Study.

## RECOMMENDATIONS FOR CERTIFICATION

Some students who receive degrees from the College of Liberal Arts may also wish to qualify for teaching. They will be recommended for certification after completing their major and minor requirements, and the courses listed under Sequence of Pre-Professional and Professional Courses. Such students must be closely advised during the last two years.

Admission to student teaching will be based upon the same point average requirements as students in the College of Education. Satisfactory work must be done in teaching fields and in education, particularly student teaching, to warrant recommendation for teaching certificates.

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

Students are expected to receive their recommendation for certification from the college which granted their degree. Students receiving degrees from other colleges who wish to qualify for certification at The University of Akron will be expected to meet all of the requirements of The University of Akron with an approximate total of one year's work at this institution.

## STUDENT TEACHING

Student teaching is done in the public schools under the supervision of directing (or cooperating) teachers and a representative of the College of Education faculty. Each student must teach for a semester under regular assignment. When arranging his University schedule for this semester, the student must leave either the morning or afternoon free for student teaching.

## DUAL CERTIFICATION PROGRAM
## ELEMENTARY AND SECONDARY

This curriculum prepares teachers for the elementary and secondary schools. Students completing this curriculum will receive the four-year provisional certificate to teach at least two fields in the secondary school and a certificate which will qualify them to teach in grades 1 through 8 of the elementary school.

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | ROTC | 1½ |
| 27:55 | Introduction to Education | 3 | 30:41 | General Psychology | 3 |
| | Electives | 4 | | Elective (teaching fields) | 4-5 |

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:11 | Numbers Communication | 2 | or 1:11 | Numbers Communication | 2 |
| 1:15 | Institutions in the U. S. | 3 | 1:16 | Institutions in the U. S. | 3 |
| 1:3 | Written English | 2 | 1:4 | Written English | 2 |
| 1:7 | Effective Speaking | 2 | | ROTC | 1½ |
| | ROTC | 1½ | 28:71 | Principles of Geography | 3 |
| 30:52 | Educational Psychology | 3 | 27:86 | Children's Literature | 3 |
| 27:41 | Handicrafts | 2 | 12:41 | American History or | |
| | | | 21:41 | American Government | 3 |
| | | | | Elective | 2 |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | 1:18 | Western Cultural Traditions | 3 |
| | Geography | 3 | 27:138 | Teaching of Soc. Studies | 2 |
| 27:135 | Teaching of Reading | 3 | 27:133 | Science for Elem. Grades | 3 |
| 30:107 | Child & Adol. Psychology | 3 | 27:136 | Arithmetic for El. Gr. | 3 |
| 27:105 | Tests and Measurements | 2 | 27:113 | Principles and Practices in Secondary Education | 3 |
| 18:121 | Primary Elem. Music Education | 2 | | Elective | 3 |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | or 1:101 | Senior Course | 2 |
| 27:124 | Student Teaching | 4 | 29:138 | Health and Phys. Educ. Activities | 3 |
| 27:115 | School Management | 2 | 27:124 | Student Teaching | 4 |
| 27:201 | Problems In Education | 3 | | Electives | 9 |
| | Electives | 5 | | Total to make 128 | |

## ELEMENTARY EDUCATION

The Kindergarten-Primary program is for students preparing to teach in the kindergarten through the third grade. The Elementary program is for those preparing to teach in grades four to eight inclusive.

### KINDERGARTEN-PRIMARY AND ELEMENTARY

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | ROTC | 1½ |
| 27:55 | Introduction to Educ. | 3 | 30:41 | General Psychology | 3 |
| 2:21 | Design 21 | 2 | 27:62 | Elem. School Music Liter. and Apprec. | 2 |
| 18:23 | Fundamentals of Music | 2 | | Elective | 2-3 |

*Second Year*

| First Semester | | Credits | | Second Semester | | Credits |
|---|---|---|---|---|---|---|
| 1:11 | Numbers Communication | 2 | or | 1:11 | Numbers Communication | |
| 1:15 | Institutions in the U. S. | 3 | | 1:16 | Institutions in the U. S. | 3 |
| 1:3 | Written English | 2 | | 1:4 | Written English | 2 |
| 1:7 | Effective Speaking | 2 | | | ROTC | 1½ |
| | ROTC | 1½ | | 28:71 | Principles of Geography | 3 |
| 30:52 | Educational Psychology | 3 | | 27:86 | Children's Literature | 3 |
| | Elective | 3 | | | Elective | 5 |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Trad. | 3 | 1:18 | Western Cultural Trad. | 3 |
| | Geography | 3 | 27:138 | Tchg. of Soc. Stud. (Elem.) | 2 |
| 27:135 | Tchg. of Reading | 3 | | or | |
| 27:137 | Tchg. Language Arts (Elem.) | 3 | 27:132 | Early Elem. Educ. (Kind.-Pr.) | 3 |
| | or | | 27:133 | Science for Elem. Grades | 3 |
| 27:131 | Early Elem. Educ. (Kind.-Pr.) | 3 | 27:105 | Tests & Measurements | 2 |
| 30:107 | Child & Adol. Psych. | 3 | 27:136 | Arith. in Elem. Grades | 3 |
| | | | 27:121 | Art for the Grades | 2 |
| 27:41 | Handicrafts | 2 | 18:121 | Primary Elem. Music Ed. | 2 |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | 1:101 | Senior Course | 2 |
| 27:124 | Student Teaching | 6 | 29:138 | Health & Phys. Education | |
| 27:115 | School Management | 2 | | Activities | 3 |
| 27:201 | Problems in Education | 3 | | Social Science | 3 |
| 21:41 | American Government or | | | Electives | 5-10 |
| 12:41 | or 42 American History | 3 | | Total to make 128 | |

Students who wish to obtain both Kindergarten-Primary and Elementary certificates will be required to do student teaching on both Kindergarten-Primary and Intermediate grade levels in addition to completing course requirements for each.

By taking the following courses, students in the Kindergarten-Primary program may also receive University recommendation as Director or Teacher in Nursery Schools:

| | | Credits | | | Credits |
|---|---|---|---|---|---|
| 22:41 | General Sociology | 3 | 13:65 | Child Development | 3 |
| 22:117 | Child Welfare | 3 | 29:111 | Red Cross First Aid | 1 |
| 13:45-46 | General Foods | 6 | | | |
| 27:124 | Student Teaching (in Nursery School) (after 4 credits in Kindergarten-Primary program) | 4 | | | |

## TWO-YEAR ELEMENTARY PROGRAM

Acute shortage of teachers in the elementary school has resulted in the establishment of a two-year program. Students who complete this program may obtain a cadet provisional certificate which is valid for four years. Before the expiration of this period, students will be expected to continue work toward a degree, in order to keep their certificates in force.

### TWO-YEAR ELEMENTARY PROGRAM LEADING TO A CADET CERTIFICATE

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 30:41 | General Psychology | 3 | 30:52 | Educational Psychology | 3 |
| 2:21 | Design | 2 | 27:41 | Handicrafts | 2 |
| 18:23 | Fund. of Music | 2 | 27:62 | Elementary School Music Liter. & Apprec. | 2 |
| | ROTC | 1½ | | ROTC | 1½ |

*Summer Session*

| | | |
|---|---|---|
| 27:135 | Teaching of Reading | 3 |
| 27:86 | Children's Literature | 3 |

*Second Year*

| First Semester | | Credits | Second Semester | | Credits |
|---|---|---|---|---|---|
| 1:11 | Numbers Communication | 2 | 27:115 | School Management | 2 |
| 27:136 | Arithmetic in Elementary Grades | 3 | 27:124 | Student Teaching | 6 |
| 27:137 | Teaching of Language Arts | 3 | 27:201 | Problems in Education | 3 |
| 27:138 | Teaching of Soc. Stud. | 2 | | ROTC | 1½ |
| 29:138 | Health & P.E. Act. | 3 | Total to make at least 64 (Women) | | |
| 21:41 | American Government | 3 | (For men, including ROTC, 70) | | |
| | ROTC | 1½ | | | |

## CONVERSION FROM SECONDARY TO ELEMENTARY CERTIFICATE

The holder of a Provisional, Professional, or Permanent High School or Special Certificate may obtain a certificate valid for elementary teaching upon submitting evidence of the satisfactory completion of the following 12 credits:

| | | |
|---|---|---|
| 27 :251 | Elementary Education | 3 |
| 27 :135 | Teaching of Reading | 3 |
| 27 :136 | Arithmetic in Elementary Grades | 3 |
| 30 :107 | Child and Adolescent Psychology | 3 |

Such certificate shall be designated as a "Retraining" certificate and may be renewed only upon evidence of the completion of 12 credits of additional credit applicable to a degree in elementary education.

## CERTIFICATION OF NON-PROFESSIONAL DEGREE HOLDERS FOR ELEMENTARY SCHOOL TEACHING IN OHIO

The State Department of Education will, upon the request of the employing city, county, or exempted village superintendent, and the recommendation of the institution in which the credit is completed, grant a temporary elementary certificate to the holder of an appropriate bachelor's degree, who submits evidence of the completion of the above 12 credits of additional preparation.

## SECONDARY AND SPECIAL

Each student preparing for secondary school teaching must have at least two academic teaching fields. One field shall be at least 6 credits more than the minimum required by the State Department of Education, except where the teaching field is 30 credits or more.

For selection of required courses for a teaching field, consult the head of department, who will appoint an adviser.

Each student is required to complete 128 credits with a minimum of a 2-point average. At the time of entering upon student teaching, the point ratio must be 2.5 in the major field and 2 in the minors.

# STATEMENT OF NUMBER OF HOURS REQUIRED FOR CERTIFICATION IN VARIOUS TEACHING FIELDS

## As Specified by the State Department of Education
## In High School and Special Areas

| *Field* | *Number of Credits* High School Tchg. Fields* | Special Tchg. Fields† |
|---|---|---|
| Art | 24 | 50 |
| Business Education | 45 | |
| Bookkeeping | 9 | |
| ‡Bookkeeping—Basic Business | 20 | |
| Salesmanship—Merchandising | 15 | |
| ‡Stenography—Typing | 20 | |
| Typing | 5 | |
| English | 24 | |
| Health Education | 24 | |
| Health Education and Physical Education | 24 | 40 |
| History and Government | 27 | |
| Home Economics | 30 | |
| Latin | 15 | |
| Library Science | 16 | |
| §Modern Languages | 20 | |
| Mathematics | 18 | |
| Music | 24 | 50 |
| Science | | |
| Biological Science | 15 | |
| Earth Science | 15 | |
| General Science | 21 | |
| Physical Science | 21 | |
| Science Comprehensive | 45 | |
| Social Studies Comprehensive | 45 | |
| Speech | 18 | 40 |

## ART

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | ROTC | 1½ |
| 27:55 | Intro. to Education | 3 | 30:41 | General Psychology | 3 |
| 2:21 | Design | 2 | 2:22 | Design | 2 |
| 2:29 | Art Appreciation | 2 | 2:30 | Art Appreciation | 2 |

*High School teaching fields entitle the holder of the certificate to teach the subjects in all grades 7-12 in a secondary school and in grades 7 and 8 of an elementary school if the work is departmentalized.

†A special teaching field entitles the holder of the certificate to teach that subject in any grade of the public schools.

‡If used as major 30 credits will be required.

§The two units of high school which are required as prerequisites to college study in a language may be satisfied by taking the eight-credit beginning course. This means that, in order to place a language on a certificate as a teaching field, 28 credits would be required if the study of the language is begun in college. If a second language is chosen, only 20 credits will be required.

*Second Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | 1:11 | Numbers Communication | 2 |
| 1:3 | Written English | 2 | 1:18 | Western Cultural Traditions | 3 |
| 1:7 | Effective Speaking | 2 | 1:4 | Written English | 2 |
| | ROTC | 1½ | | ROTC | 1½ |
| 30:52 | Educ. Psychology | 3 | 2:43 | Industrial Design | 2 |
| 33:25 | Engineering Drawing | 3 | 2:46 | Drawing | 2 |
| 2:45 | Drawing | 2 | 2:60 | Ceramics | 2 |
| 2:59 | Ceramics | 2 | 2:70 | Crafts | 2 |

*Third and Fourth Years*

| | | | | | |
|---|---|---|---|---|---|
| 1:15 | Institutions in the U. S. | 3 | 1:16 | Institutions in the U. S. | 3 |
| 1:101 | Senior Course | 2 | 27:121 | Art for the Grades | 2 |
| 2:115 | Painting | 2 | 2:116 | Painting | 2 |
| 2:179 | Book Illustration | 2 | 2:105 | Graphic Arts | 2 |
| 2:175 | Figure Drawing | 2 | 2:176 | Figure Drawing | 2 |
| 2:151 | Costume or | | 2:152 | Costume or | |
| 2:171 | Interior Design | 3 | 2:172 | Interior Design | 3 |
| 2:200 | History of Art | 3 | 2:201 | History of Art | 3 |
| 27:105 | Tests and Measurements | 2 | 2:102 | Crafts | 2 |
| 27:124 | Student Teaching | 6 | 27:191 | Methods of Teaching Art | 3 |
| 27:115 | School Management | 2 | 2:106 | Weaving | 2 |
| | Electives: Women | 6 | 27:201 | Problems in Education | 3-7 |
| | Men | 3 | | Electives: Women | 6 |
| | | | | Men | 3 |

Since many courses are given in alternate years, the exact order of courses in the last two years would vary.

Suggested courses for minor in Art. Minimum requirements in teaching of Art for the Provisional High School Certificate.

| | | Credits |
|---|---|---|
| 2:21-22 | Design | 4 |
| 2:45-46 | Drawing | 4 |
| 2:59 | Ceramics | 2 |
| 2:115-116 | Painting | 4 |
| 2:175 | Figure Drawing | 2 |
| 2:200-201 | History of Art | 6 |
| 2:191 | Methods of Teaching Art | 3 |

## BUSINESS EDUCATION

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | ROTC | 1½ |
| 39:21 | Accounting | 3 | 39:22 | Accounting | 3 |
| 27:55 | Introduction to Education | 3 | 30:41 | General Psychology | 3 |
| 43:51 | Typing | 2 | 43:52 | Typing | 2 |

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:11 | Numbers Communication | | 1:16 | Institutions in the U. S. | 3 |
| 1:15 | Institutions in the U. S. | 3 | 1:4 | Written English | 2 |
| 1:3 | Written English | 2 | | ROTC | 1½ |
| 1:7 | Effective Speaking | 3 | 43:66 | Shorthand | 5 |
| | ROTC | 1½ | 43:23 | Secretarial Procedure | 2 |
| 43:65 | Shorthand | 4 | | | |
| 30:52 | Educational Psychology | 3 | | | |

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Trad. | 3 | 1:18 | Western Cultural Trad. | 3 |
| 27:113 | Principles and Practices in Secondary Education | 3 | 27:173 | 4-5 Special Methods | 3 |
| 6:45 | Economics | 3 | 28:54 | Economic Geography | 3 |
| 40:81 | Major (Selling Field) | 3 | 43:74 | Secretarial Training | 2 |
| 40:61 | Bus. Org. & Mgt. | 3 | 40:141 | Business Law | 3 |
| | | | | Major (Selling Field) | 3 |

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:101 | Senior Course | | 1:101 | Senior Course | 2 |
| 27:105 | Tests & Measurements | 2 | 27:201 | Problems in Education | 3 |
| 27:124 | Student Teaching | 6 | | Electives, To Total At Least 128 Hours | |
| 27:115 | School Management | 2 | | | |
| 43:93 | Business Letters | 2 | | | |
| | Electives | 4 | | | |

## HOME ECONOMICS

### *First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| 1:55 | Introduction to Education | 3 | 30:41 | General Psychology | 3 |
| 13:21 | Textiles | 3 | 13:22 | or 23 Clothing | 3 |
| 13:53 | Home Econ. Orientation | 1 | | | |

### *Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:11 | Numbers Communication | | or 1:11 | Numbers Communication | 2 |
| 1:15 | Institutions in the U. S. | 3 | 1:16 | Institutions in the U. S. | 3 |
| 1:3 | Written English | 2 | 1:4 | Written English | 2 |
| 1:7 | Effective Speaking | 2 | 13:46 | General Foods | 3 |
| 13:45 | General Foods | 3 | 30:52 | Educational Psychology | 3 |
| | Elective | 3 | 13:58 | Household Furnishings | 3 |

### *Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | 1:18 | Western Cultural Traditions | 3 |
| 13:105 | Tailoring | 3 | 13:106 | Advanced Clothing | 3 |
| 13:62 | Home Management | 3 | 13:65 | Child Development | 3 |
| 27:105 | Tests & Measurements | 2 | 27:151 | Home Economics Education | 3 |
| 13:115 | Experimental Foods | 3 | 27:113 | Principles and Practices in Secondary Education* | 3 |
| | Elective | 6 | | Elective | 3 |

### *Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | or 1:101 | Senior Course | 2 |
| 13:119 | Nutrition | 3 | 27:124 | Student Teaching | 6 |
| | Electives | 8 | 27:115 | School Management | 2 |
| | | | 27:201 | Problems in Education | 3 |

## MUSIC

### *First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Written English | 3 | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | ROTC | 1½ |
| 27:55 | Introduction to Education | 3 | 30:41 | General Psychology | 3 |
| 18:23 | Fundamentals of Music | 2 | 18:22 | Art of Music | 2 |
| | Applied Music | 1 or 2 | | Applied Music | 1 or 2 |
| | Music Organization | 1 | | Music Organization | 1 |

### *Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:11 | Numbers Communication | | or 1:11 | Numbers Communication | 2 |
| 1:15 | Institutions in the U. S. | 3 | 1:16 | Institutions in the U. S. | 3 |
| 1:3 | Written English | 2 | 1:4 | Written English | 2 |
| 1:7 | Effective Speaking | 2 | | ROTC | 1½ |
| | ROTC | 1½ | 18:42 | Theory II | 5 |
| 18:41 | Theory I | 5 | 27:62 | Elem. Music Lit. & App. | 2 |
| 30:52 | Educational Psychology | 3 | | Applied Music | 2 |
| | Music Organization | 1 | | Music Organization | 1 |
| | Applied Music | 1 or 2 | 18:56 | String Class | 1 |
| 18:55 | String Class | 1 | | | |

### *Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | 1:18 | Western Cultural Traditions | 3 |
| 18:103 | Theory III | 3 | 18:110 | Conducting | 2 |
| 18:121 | Prim. Elem. Music Educ. | 2 | 27:123 | Sec. Music Education | 2 |
| 18:101 | History of Music | 2 | 18:102 | History of Music | 2 |
| | Applied Music | 2 or 3 | | Applied Music | 2 or 3 |
| | Music Organization | 1 | | Music Organization | 1 |
| 18:50 | Voice Class | 2 | 27:105 | Tests & Measurements | 2 |
| 18:57 | Woodwind Class | 1 | 18:58 | Brass Class | 1 |

*Required if student wishes to teach the academic minor as well as the major field.

*Fourth Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | or | 1:101 | Senior Course | 2 |
| | Applied Music | 1 or 2 | | | Applied Music | 1 or 2 |
| 18:114 | Orchestration | 2 | | 27:201 | Problems in Education | 3 |
| 27:124 | Student Teaching | 6 | | | Music Organization† | 1 |
| 27:115 | School Management | 2 | | | Elective | 14-15 |
| | Music Organization † | 1 | | | Total to make 128 | |
| | Elective | 4-5 | | | | |

## STATE REQUIREMENTS FOR A MINOR IN MUSIC

| | | |
|---|---|---|
| 18:23 | Fundamentals of Music | 2 |
| 18:22 | Art of Music | 2 |
| 18:41 | Theory I | 5 |
| 18:42 | Theory II | 5 |
| 18:101 | or 102 History of Music | 2 |
| 27:123 | Music Education | 2 |
| 18:110 | Conducting | 2 |
| | Applied Music | 4 |

## DEPARTMENT OF MUSIC REQUIREMENTS

### Music Organizations

University Chorus — University Singers
University Band — University Symphony Orchestra

## ADDITIONAL REQUIREMENTS FOR MAJORS IN MUSIC

(1) To major in School Music, a student must have reached a satisfactory degree of achievement in Voice, or in some instrument, before entering college. A musical aptitude test will be given each student near the beginning of the first year of study.
(2) Twelve credits are necessary in individual instruction and must include 4 credits in Piano and 4 credits in Voice.
(3) Class instruction may not be substituted for individual instruction.
(4) Presentation of both Junior and Senior recitals is recommended.
(5) Continuous enrollment in any one of the music organizations is required. Public school Music majors may not count more than 6 of these credits toward the degree.
(6) Competence in Functional Piano.

## SPEECH

*First Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:1 | Written English | 3 | | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | | 1:6 | Effective Speaking* | 2 |
| 1:21 | Physical Education | ½ | | 1:22 | Physical Education | ½ |
| 1:13 | Reasoning and Understanding in Science | 3 | | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | 30:41 | General Psychology | 3 |
| 27:55 | Intro. to Education | 3 | | | ROTC | 1½ |
| | Elective | 5-6 | | | Elective | 5-6 |

*Second Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:11 | Numbers Communication | | or | 1:11 | Numbers Communication | 2 |
| 1:15 | Institutions in the United States | 3 | | 1:16 | Institutions in the United States | 3 |
| 1:3 | Written English | 2 | | 1:4 | Written English | 2 |
| | ROTC | 1½ | | | ROTC | 1½ |
| 1:7 | Effective Speaking* | 2 | | | Elective (Speech) | 8-9 |
| 27:52 | Educ. Psychology | 3 | | | | |
| 24:51 | Reading Aloud* | 3 | | | | |
| | Elective (Speech) | 3 | | | | |

*Third Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | | 1:18 | Western Cultural Traditions | 3 |
| 24:161 | Play Production* | 3 | | 24:272 | Speech Correction | 3 |
| 24:271 | Speech Correction* | 3 | | 24:274 | Clinical Practice | 1 |
| 24:273 | Clinical Practice* | 1 | | 24:291 | or 292 Speech Criticism | 2 |
| 24:290 | Dev. of Rhet. Theory | 2 | | 27:105 | Tests & Measurements | 2 |
| 27:113 | Principles and Practices in Secondary Education | 3 | | | Elective (teaching field) | 5 |
| | Elective (teaching field) | 2 | | | | |

†Required: 4 credits Voice, 4 credits Piano, 4 additional credits in Applied Music. Membership in music organizations at all times, but only 6 credits will count toward the degree.

*Speech may be used in the B.A. in Education program, either as a 19-credit teaching field or as a major of 24 credits for graduation purposes. The courses marked with a single asterisk are required for the 19-credit teaching field. Additional courses to make the 24-credit field may be selected upon consultation with the adviser.

*Fourth Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:101 | Integration for Seniors | 2 | or | 1:101 | Integration for Seniors | |
| 27:124 | Student Teaching | 6 | | 27:201 | Problems in Education | 3 |
| 27:115 | School Management | 2 | | | Speech | 3 |
| | Speech | 3 | | | Elective (teaching field) | 10 |
| | Elective (teaching field) | 3 | | | | |

## HEALTH AND PHYSICAL EDUCATION

Students preparing to teach Health Education and Physical Education have a choice of four curricula. Two of them lead to certification for high school teaching and two for special certification which entitles the teacher to teach in all of the grades, kindergarten through twelfth.

Students will be required to meet the general requirements for promotion to the College of Education and certain courses which will be required in the Freshman and Sophomore years. These courses may be seen by referring to the curricula which are outlined below.

### REQUIREMENTS FOR HEALTH AND PHYSICAL EDUCATION

### MEN

*First Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:1 | Written English | 3 | | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | | 1:6 | Effective Speaking | 2 |
| 1:13 | Reasoning and Understanding in Science | 3 | | 1:14 | Reasoning and Understanding in Science | 3 |
| | ROTC | 1½ | | | ROTC | 1½ |
| 27:55 | Intro. to Education | 3 | | 30:41 | General Psychology | 3 |
| 29:45 | Physical Education** | 2 | | 29:46 | Physical Education** | 2 |
| | Electives | 2-3 | | | Electives | 2-3 |

*Second Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:11 | Numbers Communication | | or | 1:11 | Numbers Communication | 2 |
| 1:3 | Written English | 2 | | 1:4 | Written English | 2 |
| 1:15 | Institutions in the U. S. | 3 | | 1:16 | Institutions in the U. S. | 3 |
| 1:7 | Effective Speaking | 2 | | | ROTC | 1½ |
| | ROTC | 1½ | | 29:94 | Theory & Practice | 2 |
| 29:93 | Theory & Practice | 2 | | 29:98 | Physiology** | 3 |
| 30:52 | Educational Psychology | 3 | | 29:70 | Org. & Adm. of Com. Rec. | 2 |
| 29:97 | Anatomy** | 3 | | | Electives (teaching field) | 1-2 |

*Third Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:17 | Western Cultural Traditions | 3 | | 1:18 | Western Cultural Traditions | 3 |
| 29:105 | Theory and Practice** | 2 | | 29:106 | Theory and Practice** | 2 |
| 27:113 | Principles and Practices in Secondary Education* | 3 | | 29:114 | Theory & Pract. of Swimming | 2 |
| | | | | 27:105 | Tests & Meas. | 2 |
| 29:121 | Org. & Adm. of Phys. Ed.** | 2 | | 29:122 | Org. & Adm. of Phys. Ed.** | 2 |
| 29:111 | First Aid | 1 | | 27:133 | Meth. & Materials in Teaching Health Educ.** | 3 |
| 29:112 | Massage | 1 | | | | |
| 29:115 | Normal Diagnosis & Corrective Exercise | 2 | | 29:134 | Games & Rhythms for Elementary Grades** | 2 |
| 29:125 | Org. & Adm. of School Health** | 3 | | | | |

*Fourth Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | | 1:101 | Senior Course | 2 |
| 30:107 | Child & Adol. Psych. | 3 | | 27:201 | Problems in Education | 3-7 |
| 27:124 | Student Teaching | 6 | | 29:119 | Community Hygiene** | 3 |
| 27:115 | School Management | 2 | | 29:120 | Camping & Outdoor Education | 2 |
| | Electives | 4 | | | Electives | 6 |

### WOMEN

*First Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:1 | Written English | 3 | | 1:2 | Written English | 3 |
| 1:19 | Personal Development | 2 | | 1:6 | Effective Speaking | 2 |
| 1:13 | Reasoning & Understanding in Science | 3 | | 1:14 | Reasoning & Understanding in Science | 3 |
| 29:45 | Physical Education* | 2 | | 29:46 | Physical Education* | 2 |
| 27:55 | Introduction to Education | 3 | | 30:41 | General Psychology | 3 |
| | Electives | 3-4 | | | Electives | 3-4 |

*Required if student wishes to teach the academic minor as well as in the major field.
**Required Physical Education courses for 24-credit teaching field.

*Second Year*

| | First Semester | Credits | | | Second Semester | Credits |
|---|---|---|---|---|---|---|
| 1:11 | Numbers Communication | 2 | or | 1:11 | Numbers Communication | |
| 1:15 | Institutions in the U. S. | 3 | | 1:16 | Institutions in the U. S. | 3 |
| 1:3 | Written English | 2 | | 1:4 | Written English | 2 |
| 1:7 | Effective Speaking | 2 | | 29:98 | Physiology* | 3 |
| 29:97 | Anatomy* | 3 | | 29:96 | Theory & Practice (Ind. Spts.)* | 2 |
| 29:95 | Theory & Practice (Team spts.)* | 2 | | 29:70 | Org. & Adm. of Comm. Rec. | 2 |
| 30:52 | Educational Psychology | 3 | | | Electives | 2-3 |
| | Electives | 2-3 | | | | |

*Third Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:17 | Western Cultural Trad. | 3 | | 1:18 | Western Cultural Trad. | 3 |
| 29:115 | Normal Diagnosis and Corrective Exercise | 2 | | 27:105 | Tests & Measurements | 2 |
| 29:111 | Red Cross First Aid | 1 | | 29:122 | Org. & Adm. of Phys. Educ.* | 2 |
| 27:113 | Principles and Practices in Secondary Education** | 3 | | 29:134 | Games & Rhythms for Elementary Grades* | 2 |
| 29:121 | Org. & Adm. of Phys. Educ.* | 2 | | 29:103 | Theory & Practice | 2 |
| 29:125 | Org. & Adm. School Health** | 3 | | 29:133 | Meth. & Materials in Tchg. Health Educ.* | 3 |
| 29:108 | Theory & Practice of Dance | 2 | | | Electives | 3-4 |
| | Electives | 3-4 | | | | |

*Fourth Year*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1:101 | Senior Course | 2 | or | 1:101 | Senior Course | 2 |
| 29:114 | Theory & Practice of Swim. | 2 | | 27:124 | Student Teaching | 6 |
| 30:107 | Child & Adol. Psych. | 3 | | 27:115 | School Management | 2 |
| | Electives | 7-8 | | 27:201 | Problems in Education | 3 |
| | | | | 29:119 | Community Hygiene* | 3 |
| | | | | 29:120 | Camping & Outdoor Education | 2 |

## PSYCHOLOGY

Students in the Buchtel College of Liberal Arts or the College of Education may complete a major or minor in the field of Psychology. This field may be used in the College of Education in meeting specific requirements or for elective work and as prerequisites for graduate study in the field of certification as a School Psychologist. Psychology, however, is not recognized as a teaching field by the State Department of Education. Prospective teachers will be encouraged to take several courses in this field.

## NURSING EDUCATION

The University of Akron began a cooperative program with the hospitals of the city of Akron in 1943. Under this program the University provided a preclinical curriculum. Later on it was decided to provide students with an opportunity to become nurses and obtain a degree under the auspices of the University. Provision was also made for the degree B.S. in Nursing Education for registered nurses who wished to continue and complete the requirements for a Bachelor's degree. The hospital schools of nursing affiliated with the University in the preclinical program are Akron City, Akron General and St. Thomas in Akron and Massillon City Hospital in Massillon.

## NURSING ADVISORY COMMITTEE

Mrs. Julia B. Fishbaugh R.N., B.S., M.A. Ed., Director, Akron General Hospital School of Nursing.

Mrs. Julia Hrdina R.N., Ph.B. (B.S.), M.S., Director, Massillon City Hospital School of Nursing.

Mary J. Knapp R.N., B.S.N., Executive Director, Visiting Nurse Service of Summit County.

Ella Mae Murdie R.N., B.S., M.S., Director, Akron City Hospital School of Nursing.

Sister Mary Esther R.N., B.S.N., Director, St. Thomas Hospital School of Nursing.

*Required Physical Education courses for 24-credit teaching field.
**Required if student wishes to teach the academic minor as well as in the major field.

## BASIC NURSING PROGRAM LEADING TO A DIPLOMA IN NURSING

Student nurses are regularly enrolled in the University, with college credit for these two semesters.

Applications for this program are handled through the hospital schools of nursing.

The following courses constitute two semesters work on campus:

| | First Semester | Credits |
|---|---|---|
| 3:47 | Anatomy & Physiology | 3 |
| 5:25 | Chemistry | 3 |
| 30:21 | Psychology or 22:23 Sociology | 3 |
| 13:43 | Foods or 3:33 Microbiology | 3 |
| 31:59 | History of Nursing or | 2 |
| 1:1 | Written English | 3 |
| | | 14-15 |

| | Second Semester | Credits |
|---|---|---|
| 3:48 | Anatomy & Physiology | 3 |
| 30:21 | Psychology or 22:23 Sociology | 3 |
| 13:43 | Foods or 3:33 Microbiology | 3 |
| 1:1 | Written English or | 3 |
| 31:50 | History of Nursing | 2 |
| | | 11-12 |

## LEADING TO B.S. DEGREE IN NURSING

This five-year basic program permits candidates to be admitted directly to the University. The first two years and second semester of the fifth year are spent on the campus. The remaining time is spent in hospitals and allied health centers. This program includes general cultural courses and courses directly related to nursing. Clinical experience in medical, surgical, pediatric, communicable disease, tuberculosis, psychi- and health centers. No new students will be admitted to this program, which was and health centers. No new students will be admitted to this program, which is being discontinued effective September, 1957.

## ADVANCED PROFESSIONAL PROGRAM FOR GRADUATE NURSES

Advanced study programs are available for graduate nurses leading to the degree of Bachelor of Science in Nursing. The professional objectives of this program are to supplement for the graduate nurse of the three-year program in basic nursing the academic and professional courses required for the Bachelor of Science in Nursing degree and to prepare her to assume responsibility in the administration of patient care and assist in clinical instruction. Special programs may be arranged for graduate nurses interested in public school teaching certificates.

Candidates must present evidence of graduation from an approved school of nursing. They are required to complete at least 128 credits which include 18 credits in professional nursing courses. Required courses include:

| GENERAL COURSES | | |
|---|---|---|
| 1:1 through 1:19 | Courses | 36 |
| 30:52 | Educational Psychology | 3 |
| 30:115 | or 116 Psychology | 3 |
| 27:105 | Tests & Meas. | 2 |
| | Chemistry, Physics, Bacteriology or Physiology | 6-8 |

| PROFESSIONAL COURSES | | |
|---|---|---|
| 31:100 | Nursing Trends | 3 |
| 31:105 | Prin. & Meth. of Teaching Nursing | 3 |
| 31:106 | Ward Mgt. & Tchg. | 3 |
| 31:113 | Public Health Nursing Practice | 3 |
| 31:114 | Comprehensive Nursing Care | 3 |
| 31:115 | Comprehensive Nursing Practice | 3 |

Graduate nurses are allowed some credit for their professional education in nursing. This is dependent upon the quality and quantity of work completed in various subjects and the results of the National League of Nursing Graduate Nurse Qualifying Examination. The number of electives will depend on the credit allowed the individual student for her basic professional program.

# COLLEGE OF BUSINESS ADMINISTRATION

WARREN W. LEIGH, PH.D., *Dean*

## HISTORY OF THE COLLEGE

The College of Business Administration was established at The University of Akron, February 18, 1953, effective September 1, 1953. It embodies curriculums previously taught in Buchtel College of Liberal Arts, in the Departments of Commerce (established in September, 1919), Industrial Management, and Secretarial Science.

The College maintains an Advisory Committee of prominent leaders from various fields of business and labor who periodically meet to counsel the staff relative to proper college objectives, programs, and special community educational efforts. The members of this Committee are:

Mr. L. S. Buckmaster, President, United Rubber, Cork, Linoleum & Plastics Workers of America.

Mr. F. J. Carter, Vice President of Industrial Relations, Goodyear Tire & Rubber Company.

Mr. George Daverio, C.P.A., Partner, Chilton, Stump & Daverio.

Mr. John N. Hart, Controller, The B. F. Goodrich Company.

Mr. M. S. Richardson, President, Bank of Akron.

Mr. J. E. Trainer, Executive Vice President, Firestone Tire & Rubber Company.

Mr. E. D. Warner, Managing Director and President, A. Polsky Company.

## OBJECTIVES OF THE COLLEGE

The College of Business Administration is for men and women who plan to enter the fields of business administration, accounting, marketing and advertising, industrial management, or secretarial science. In addition to the four-year curriculums, short-term educational programs are offered in the day and evening sessions.

The management of business enterprise requires a broad social, economic, and political background; a trained mind; an inquiring attitude; a thorough knowledge of business fundamentals and skill in the uses of management tools and techniques. A program of business training directed toward the development of a high degree of intellectual and professional competence is therefore essential.

The primary aim of the College is to provide professional or technical education at the upper university level. The lectures, problems, and inspection trips integrate theory and practice and assure thorough preparation. A capstone of business experience will provide professional background and bring out qualities of leadership. For those students who plan to teach or pursue advanced study, a solid educational foundation is provided.

The College maintains a sound balance between liberal education and professional courses. Students plan their programs so that approximately 50 per cent of their courses fall in the area of liberal education, about 25 per cent in general business subjects, and not more than 25 per cent in the specialized field of interest.

## REQUIREMENTS FOR ADMISSION

The College of Business Administration accepts students after they have completed two years of General College work. The admission of a student will depend upon his preparation, ability to do college work, his interests, moral character, and fitness for an effective business or professional career. The entrance requirements to the College are:

1. Completion of 64 credits with an average of "C" in all work taken, or permission of the Dean.
2. A general educational background as indicated by the satisfactory completion of the General College program as specified for the various areas of Business Administration.
3. Evidence of satisfactory competence in oral and written English, applied mathematics and typing.

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

To undertake a major leading to the Business Administration or the Industrial Management degree, the student must have a "C" average with not more than one "D" in the "pillar" courses which consist of Accounting 22, Economics 45-46, Production Management 62, Marketing 183, and Business Finance 171.

## DEGREES

Degree programs, as well as short certificate plans, are provided by several of the departments in the evening as well as in the day sessions.

Degrees granted by the College of Business Administration are: Bachelor of Science in Business Administration, Bachelor of Science in Industrial Management, Bachelor of Science in Secretarial Science, Master of Science in Business Administration.

## REQUIREMENTS FOR GRADUATION

1. A minimum of 128 credits, including the work in the General College. Not more than two credits of physical education activities, eight credits of applied music, four credits of typing (except toward a Secretarial Science degree or program), or 8 hours of advanced ROTC may be included.
2. Other requirements, including the residence requirement, listed in this catalog.
3. At least a "C" average in (a) the major—the pillar courses and all courses taken in the College and (b) all courses undertaken here and elsewhere.
4. Recommendation of the student's department head.

## BASIC CURRICULUM PATTERN FOR BUSINESS ADMINISTRATION

### PRE-BUSINESS PREPARATION TWO YEARS

*Liberal Education — to Provide:*

1. Facility in use of English — oral and written.
2. Knowledge of basic mathematics — the quantitative measuring tool.
3. A basic understanding of the reasoning and analytical methods of science.
4. Knowledge of man's moral, social, cultural, and religious development.

*Business Foundation Courses*

1. Business Organization
2. Economics
3. Accounting
4. Selling
   Typing

### BUSINESS ADMINISTRATION MAJOR

*Junior Year*

1. Principles of business operation:
   Production
   Marketing
   Finance
   Personnel Relations
2. Measurement and control tools:
   Accounting
   Costs-budgets
   Statistics
   Operating standards

*Senior Year*

Major of 15 credits — sufficient concentration for the student to appreciate and understand one given area of business.

Electives in Liberal Arts in:

a. Economics, social sciences, literature, etc.

b. Bus. Adm. Courses (limited in quantity)

Business Policy (3 credits) integrates, evaluates and applies the materials learned.

## DEPARTMENTS OF INSTRUCTION

### GENERAL BUSINESS

The General Business Department develops and applies the principles and techniques of economics, administration, and operation which are common to all business and industrial organizations. The Department offers majors in three fields: General Business; Advertising, Marketing, and Merchandising; and Finance.

Programs in the Department are adapted for students preparing for careers in business operation, marketing and merchandising, advertising, sales, retailing, finance, transportation, or foreign trade.

The Department also provides business training for students majoring in Liberal Arts but seeking careers in business, and for students majoring in textiles but seeking positions in merchandising.

It is suggested that students in the Department who have no definite specialized interest take General Business. Before undertaking a major in any area, students should discuss their capacities and prospects for success in that field with the head of the department.

The Department's Sales and Merchandising Laboratory makes it possible for the latest developments and practices in the marketing field to be brought into classrooms on retailing, advertising, accounting, and selling.

### REQUIREMENTS FOR GENERAL BUSINESS

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | English | 3 | 1:2 | English | 3 |
| 1:11 | Numbers Communication and | 2 | 40:61 | Business Organization | 3 |
| 43:25 | Machine & Slide Rule | 1 | | or | |
| | or | | 1:11 | Numbers Communication and | 2 |
| 40:61 | Business Organization | 3 | 43:25 | Machine & Slide Rule | 1 |
| 1:19 | Personal Development | 2 | 1:6 | Effective Speaking | 2 |
| 1:21 | Physical Education | ½ | 1:22 | Physical Education | ½ |
| 39:21 | Accounting 21 | 3 | 39:22 | Accounting | 3 |
| | ROTC 11 or 13 | 1½ | | ROTC 12 or 14 | 1½ |
| 1:13 | R & U in Science | 3 | 1:14 | R & U in Science | 3 |

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:3 | English | 2 | 1:4 | English | 2 |
| 1:7 | Speech | 2 | | Academic Elective | 2 |
| 1:15 | Institutions in U. S. | 3 | 1:16 | Institutions in U. S. | 3 |
| 6:45 | Economics | 3 | 6:46 | Economics | 3 |
| 40:54 | Economic Geography | 3 | 40:62 | Production Mgmt. | 3 |
| | or | | | or | |
| 40:62 | Production Mgmt. | 3 | 40:54 | Economic Geography | 3 |
| | ROTC 43 or 53 | 1½ | | ROTC 44 or 54 | 1½ |
| 43:31 | Typing or | 2 | 40:81 | Selling* or | 2 |
| 40:81 | Selling | | 43:31 | Typing | |

Students electing Advanced ROTC should take Marketing 183 and Business Finance 171 in the Summer Session at this point.

*Changes are being made in the Business Administration curriculums applicable to the entering class of September, 1958, which changes will affect their course programs beginning with September, 1959.

*Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Cultural Traditions | 3 | 1:18 | Cultural Traditions | 3 |
| 40:183 | Marketing* | 3 | 39:124 | Managerial Accounting | 3 |
| 40:171 | Business Finance | 3 | 40:147 | Statistics | 3 |
| 40:141 | Business Law | 3 | 40:142 | Business Law | 3 |
| | Elective or ROTC** | 3 | | Elective or ROTC** | 3 |

During the last half of his Junior year, the student will elect a "major" or field in which he desires to specialize. He must complete a minimum of 15 hours of work in his "major," including two 3-credit courses on the 200 level, excluding Business Policy 268.

*Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| | Major | 9 | | Major | 6 |
| 1:101 | Senior Course | 2 | 40:268 | Business Policy | 3 |
| | Social Science or Business | 3 | | Social Science or Business | 3 |
| | Elective or ROTC | 2 | | Humanities or Social Science | 4 |

Three fields of specialization are available: Finance; Marketing, Merchandising and Advertising; and General Business. The courses designated under each major with an asterisk (*) are required while the others are applicable toward that major. The aim is to permit the major to be shaped to the student's individual needs. The student should select his major courses and have them approved by his adviser.

## FINANCE

| Courses | Credits | Courses | Credits |
|---|---|---|---|
| Economics 208 | 3 | *Investments 172 | 3 |
| Principles of Insurance 158 | 3 | Economics 204 | 3 |
| Banking Practice and Management 176 | 3 | Security Analysis 277 | 3 |
| | | *Problems in Finance 279 | 3 |

## MARKETING, MERCHANDISING AND ADVERTISING

| | | | |
|---|---|---|---|
| Sales Promotion 287 | 2 | Retailing 192 | 3 |
| Retail Advertising 187 | 2 | Art 131-132 | 4 |
| *Sales Administration 291 | 3 | Economics 268 | 3 |
| Market Analysis 296 | 3 | | |
| *Problems in Marketing 293 | 3 | | |

## GENERAL BUSINESS

| | | | |
|---|---|---|---|
| Accounting 124 or 27 | 3 | Purchasing 189 | 2 |
| Transportation 151 | 3 | Problems in Finance 279 | 3 |
| Personnel Management | 2 | *Sales Administration 291 | 3 |
| Personnel Relations 264 | 3 | Economics 294 | 3 |
| | | Advanced Statistics 247 | 3 |

The degree of Bachelor of Science in Business Administration will be granted to those students who complete the prescribed work, including a problems course or seminar in the major area.

## ACCOUNTING DEPARTMENT

The Accounting Department offers majors in Public, Industrial, and General Accounting. The department provides professional training to those who (a) plan to engage in public practice, (b) wish to serve a single concern exclusively, or (c) expect to enter the general field of business.

The Department has been very successful in providing the educational background and theory essential for passing the examinations required for the Certified Public Accountant certificate.

The CPA certificate is awarded by the boards of accountancy of the various states. In Ohio a candidate is eligible if he is a citizen of the United States, or has duly declared his intention of becoming a citizen; is not less than twenty-one years of age; of good moral character; a high school graduate or equivalent; has had three years of experience, and passes the examination administered by the Ohio State Board of Accountancy. Since 1948 this examination has been the uniform one prepared by the American Institute of Accountants.

The Department's curriculum is designed to give thorough training in accounting together with a well-balanced background in business and cultural fields. Trained accountants are qualified for positions as auditors, income tax accountants, cost accountants, budget officers, controllers, and for managerial positions.

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**Students in Business Administration may count only 8 hours of Advanced ROTC toward their graduation requirement.

*Changes are being made in the Business Administration curriculums applicable to the entering class of September, 1958, which changes will affect their course programs beginning with September, 1959.

## REQUIREMENTS FOR ACCOUNTING

### *First and Second Years*

The program is identical with that for General Business with two exceptions in the second year. Instead of Elective 3 credits and Production Management 62, Accounting majors take:

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| Accounting 43 | 3 | Accounting 44 | 3 |

Students electing Advanced ROTC should take Marketing 183 and Business Finance 171 in the summer session at this point.

### *Third Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:17 | Cultural Traditions | 3 | 1:18 | Cultural Traditions | 3 |
| 40:62 | Production Mgt. | 3 | 40:147 | Statistics | 3 |
| 40:141 | Business Law | 3 | 40:142 | Business Law | 3 |
| 40:171 | Business Finance | 3 | 40:183 | Marketing | 3 |
| 39:27 | Cost Accounting | 3 | | Elective or ROTC | 3 |
| | Elective or ROTC | 3 | | | |

### *Fourth Year*

| | | | | | |
|---|---|---|---|---|---|
| 39:237 | Auditing | 3 | 39:238 | Auditing | 3 |
| 1:101 | Senior Course | 2 | 40:268 | Business Policy | 3 |
| 39:233 | Federal Taxation | 3 | | Elective-Academic Course | 3 |
| | Elective — Academic Course | 3 | | Other Electives | 5 |
| | Major Elective | 3 | | | |
| | Electives or ROTC | 2 | | | |

Students interested in majoring in Accounting should score well in the Level I Achievement test supplied by the American Institute of Accountants. This test is required of all students before credit will be granted for Accounting 22. The Level II Accounting test is required of all students taking Auditing 238 before credit will be allowed.

In the field of specialization the student must take not less than 25 hours of accounting (including the basic nine credits required of all students) and not more than 31 credits.

The following accounting courses are required of all majors: Accounting 21-22, Cost Accounting 27, Intermediate Accounting 43-44, Auditing 237 and 238, Federal Taxation 233.

Students preparing for public practice are advised to take Accounting 231. Accounting majors preparing for careers in industrial cost accounting should take Advanced Cost Accounting 228, Budgeting 123, and some advanced courses in the Industrial Management area.

## INDUSTRIAL MANAGEMENT

The University of Akron was one of the first colleges to establish an Industrial Management curriculum. The location of the University in a major industrial area and the trend of the times were important factors in the decision to establish such a program.

This emphasis of education for management is the result of several factors: First, management people are becoming increasingly conscious of the nature of their responsibilities. Second, the management job is becoming much more complex in terms of number of activities, volume of work, and the broader impact of managerial decisions and activities. Third, it is more and more recognized that industrial management requires people of specific qualifications and preparation. It is essential that the status of management as a profession, a science and an art be recognized, and that those in management positions possess the requisite skills and tools.

The past decade has brought about a tremendous expansion in industry and business—in the number of enterprises, in facilities, and in the number of management jobs. Graduates with industrial management degrees find many employment opportunities, especially with industrial firms, in staff positions in production control, quality control, time study, personnel, and factory supervision.

## REQUIREMENTS FOR INDUSTRIAL MANAGEMENT

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| | *First Year* | | | | |
| 1:1 | English | 3 | 1:2 | English | 3 |
| 1:11 | Numbers Communication | 2 | 1:6 | Effective Speaking | 2 |
| 1:13 | Science | 3 | 1:22 | Physical Education | ½ |
| 1:19 | Personal Development | 2 | 39:22 | Accounting | 3 |
| 39:21 | Accounting or 121* | 3 | | ROTC 12 or 14 | 1½ |
| | ROTC 11 or 13 | 1½ | 40:61 | Business Organization | 3 |
| | | | 1:14 | Science | 3 |
| | *Second Year* | | | | |
| 1:21 | Physical Education | ½ | 1:4 | English | 2 |
| 1:3 | English | 2 | 30:31 | Psychology | 3 |
| 1:7 | Speech | 2 | 1:16 | Institutions in U. S. | 3 |
| 1:15 | Institutions in U. S. | 3 | 39:27 | Cost Accounting | 3 |
| 40:62 | Production Mgmt. | 3 | 6:46 | Economics | 3 |
| 6:45 | Economics | 3 | 21 | Drawing | 1 |
| 18 | Algebra | 3** | | ROTC | 1½ |
| | ROTC | 1½ | | | |
| | *Third Year* | | | | |
| 1:17 | Cultural Traditions | 3 | 1:18 | Cultural Traditions | 3 |
| 42:101 | Industrial Plants | 3 | 40:163 | Personnel Management | 2 |
| 40:148 | Statistics | 4 | 40:166 | Motion & Time Study | 4 |
| 40:183 | Marketing† | 3 | 40:171 | Business Finance | 3 |
| | Electives or ROTC | 3 | | Major Elective or ROTC | 4 |

During the last semester of his third year and in his fourth year, the Industrial Management student must take 9 credits of major course work. Of this requirement, four credits only shall be in specialized major courses.

| | | | | | |
|---|---|---|---|---|---|
| | *Fourth Year* | | | | |
| 1:101 | Senior Course | 3 | 42:209 | Quality Control | 3 |
| 42:103 | Production Control | 3 | 40:268 | Business Policy | 3 |
| 40:141 | Business Law | 3 | 42:256 | Ind. Management Problems | 3 |
| | Major Elective | 3 | | Major Elective | 2 |
| | Gen. Elective or ROTC | 4*** | | General Elective | 4*** |

### SPECIALIZED MAJOR COURSES

| | | | |
|---|---|---|---|
| Industrial Safety 107 | 2 | Job Evaluation 165 | 2 |
| Purchasing | 2 | Budgeting 123 | 3 |
| Plant Maintenance 109 | 2 | | |

### GENERAL MAJOR COURSES

| | | | |
|---|---|---|---|
| Collective Bargaining 260 | 3 | Analytical Economics 241 | 3 |
| Personnel Relations 264 | 3 | Psychological Testing 207 | 3 |
| Labor Problems 106 | 3 | Industrial Psychology 116 | 3 |
| Investments 272 | 3 | Transportation 151 | 3 |
| Sales Administration 291 | 3 | Government and Business 110 | 3 |
| | | Physics 51 | 4 |

## SECRETARIAL SCIENCE DEPARTMENT

Students preparing for executive secretarial and office positions may choose between two programs offered in Secretarial Science: a two-year course leading to a certificate, and a four-year course leading to the Bachelor of Science degree in Secretarial Science. Both programs are combinations of technical subjects and Liberal Arts subjects. Degree students have an opportunity to concentrate in special fields of interest.

*Combination Courses:* Two special five-year programs are available, each leading to two degrees: (1) Secretarial Science—Liberal Arts, and (2) Secretarial Science—Education. Those interested should confer with the head of the department.

*Special Fields:* For those interested in preparing for such specialties as that of medical secretary, chemical secretary, engineering secretary, political secretary, social secretary, or legal secretary, special programs may be arranged.

*Shorthand and Typewriting:* Those who have had shorthand and typewriting before entrance will begin these courses in college at such point as their degree of proficiency permits as indicated by placement tests. Full credit will not be granted where undue repetition exists.

*If 121 is taken Accounting 22 is not required.

**Industrial Management students must take Algebra 18 in the first or second year unless they have had 1½ units of Algebra in high school.

***Students in Business Administration may count only 8 hours of Advanced ROTC toward their graduation requirement.

†Changes are being made in the Business Administration curriculums applicable to the entering class of September, 1958, which changes will affect their course programs beginning with September, 1959.

## REQUIREMENTS FOR SECRETARIAL SCIENCE

Degree candidates must meet regular University requirements and must meet departmental standards in skill subjects at time of graduation. At least 60 credits must be earned in academic subjects.

*Curriculum:* In addition to the required courses in general education, the following subjects are required, although the arrangement may be varied:

| First Year | Credits | Second Year | Credits |
|---|---|---|---|
| Typewriting 51-52 | 4 | Shorthand 65-66 | 9 |
| Filing Systems 27 | 2 | Accounting | 6 |
| Machines & Slide Rule Calculation 25 | 1 | Secretarial Training 74 | 2 |
| Secretarial Procedure 23 | 2 | Bus. Org. and Mgt. 61 | 3 |
| **Third Year** | **Credits** | **Fourth Year** | **Credits** |
| Shorthand 67-68 | 10 | Office Practice 293-294 | 6 |
| Business Law 51 or 141 | 3 | Office Org. and Mgt. 296 | 3 |
| Business Correspondence 133 | 3 | | |
| Economics | 3 | | |

## ONE-YEAR SECRETARIAL CERTIFICATE PROGRAM FOR COLLEGE GRADUATES

A special program has been designed for young men and women who already hold baccalaureate degrees, especially the Bachelor of Arts, and who have one year of shorthand and typewriting, or the equivalent.

This program may be adjusted to meet the needs of individuals who wish to attend on a part-time basis in either the day or the evening sessions.

| Fall Semester | Credits | Spring Semester | Credits |
|---|---|---|---|
| Shorthand 67 | 5 | Shorthand 68 | 5 |
| Secretarial Procedure 23 | 2 | Filing Systems 27 | 2 |
| Business Org. and Mgt. 61 | 3 | Office Org. and Mgt. 296 | 3 |
| Accounting | 3 | Accounting | 3 |
| Business Correspondence 133 | 3 | Machine and Slide Rule Calc. 25 | 1 |
| | | Secretarial Training 74 | 2 |

## SPECIAL TWO-YEAR CERTIFICATE COURSE IN SECRETARIAL SCIENCE

A special two-year course (at least 64 credits) is offered for those who feel unable to spend more than two years in college. This curriculum may be modified in the case of students who have had commercial courses prior to entering the University.

*First Year*

| | First Semester | Credits | | Second Semester | Credits |
|---|---|---|---|---|---|
| 1:1 | Writing | 3 | 1:2 | Writing | 3 |
| 1:19 | Personal Development | 2 | 1:6 | Speaking-Listening | 2 |
| 1:21 | Physical Educ. | ½ | 1:14 | Reasoning & Understanding | 3 |
| 1:13 | Reasoning & Understanding | 3 | 1:22 | Physical Educ. | ½ |
| 43:51 | Typewriting | 2 | 43:52 | Typewriting | 2 |
| 43:65 | Shorthand | 4 | 43:66 | Shorthand | 5 |
| 43:27 | Filing Systems or | | 43:17 | Filing Systems or | |
| 43:23 | Secretarial Procedure | 2 | 43:23 | Secretarial Procedure | 2 |

*Second Year*

| | | | | | |
|---|---|---|---|---|---|
| 1:15 | Institutions in the U. S. | 3 | 1:11 | Numbers Communication | 2 |
| 1:3 | Writing | 2 | 1:16 | Institutions in the U. S. | 3 |
| 1:7 | Speaking-Listening | 2 | 1:4 | Writing | 2 |
| 43:67 | Shorthand | 5 | 43:68 | Shorthand | 5 |
| 43:93 | Business Letters | 2 | 43:74 | Secretarial Training | 2 |
| 39:21 | Accounting | 3 | 43:25 | Machine & Slide Rule Calc. | 1 |

# DIVISION OF GRADUATE STUDY

ERNEST H. CHERRINGTON, JR., PH.D., *Director*

Buchtel College of Liberal Arts offers programs of advanced graduate study leading to the degree of Doctor of Philosophy in chemistry. The staff and facilities of the Institute of Rubber Research, which has conducted contract research on campus since 1943, are available to qualified students pursuing this objective. Both the Department of Chemistry and the Institute of Rubber Research are housed in Knight Hall. The Library of the Division of Rubber Research of the American Chemical Society, which is located on campus, and proximity to the home plants and research centers of leading rubber manufacturers facilitate the study.

The several colleges of The University of Akron offer programs of graduate study leading to the degrees of Master of Arts and Master of Science with majors in the following areas: Business Administration, Chemistry, Economics, Education, Engineering, English, History, Physics, Political Science, and Psychology.

Several other departments offer a limited amount of work which may be undertaken on the graduate level. Such courses may supplement the major program of study and may constitute the minor subject for students who do not devote their entire attention to one field.

Graduate work is characterized by quality as well as quantity. Although a minimum list of credits, certain courses, and a minimum period of research may be specified for an advanced degree, it should be understood that such minimum attainment constitutes a necessary but by no means sufficient condition for the awarding of the degree. A high level of achievement in the field must be demonstrated.

## REQUIREMENTS FOR ADMISSION

The applicant for admission to graduate study must show that he has received the Bachelor's degree from a regionally accredited college or university. This he will do by making certain that the Registrar of such college or university sends directly to the Registrar of The University of Akron a complete transcript of his undergraduate record. If he has taken undergraduate and/or graduate work at more than one college or university, official, final transcripts of all such work must be so provided.

It is the further responsibility of the applicant to make certain that all necessary transcripts reach the Registrar no less than one week prior to the official registration period published on the University Calendar. Failure to do so may result in deferment of admission to a later semester.

The applicant also will fill out the application form for admission to the Graduate Division. On it he will outline his academic background (to be substantiated by the official transcripts of his record), and he will indicate his desire to become a candidate for an advanced degree. It is essential that every student who may wish to qualify for an advanced degree indicate his intention at the earliest possible date. Otherwise he may later find that in the absence of guidance he has wasted time and credits.

The Registrar, upon examination of the official transcripts of record, will admit the applicant to graduate study provided that his record shows an overall quality point average of no less than 2.5 (2.0 is "C"; 3.0 is "B") and the necessary background courses for the graduate program which he wishes to pursue, and further provided that he has met such specific requirements as are listed in the section of this catalog devoted to the college in which the desired program is offered.

Applicants whose records fall short of such minimum requirements may be admitted on provisional graduate status by the Director of Graduate Studies upon recommendation of the Dean or Department Head concerned and in accordance with the policy established by the Committee on Graduate Study.

The Committee on Graduate Study reserves the right to require any applicant to prove that he has acquired a satisfactory background for graduate work by taking and passing such examinations as may be indicated.

Any college graduate or qualified adult may enroll in any graduate course offered by the University provided he can show that he has successfully completed the prerequisite courses therefor or that he has attained their equivalent through experience. However, such privilege does not admit the individual to a graduate degree program or to any work beyond the course in question.

## STUDENT CLASSIFICATION

A *graduate student* is a student who holds a Bachelor's degree from an accredited college or university and who is enrolled for credit in one or more courses on the graduate level.

A *postgraduate student* is a student who holds a Bachelor's degree from an accredited college or university and who is enrolled in credit courses on the undergraduate level only.

## THE MASTER'S DEGREE

General requirements for the degree of Master of Arts, Master of Science, or Master of Business Administration are:

1. A minimum of 30 credits of graduate work.
2. A quality point ratio of at least 3.0 ("B" average) must be maintained in all work taken for the degree. No graduate credit will be given upon completion of courses numbered from 300 to 499 if the final grade earned is lower than "C," and no more than six credits of such work of "C" quality will be accepted in fulfillment of the minimum credit requirement for the degree. All other work presented must be of "A" or "B" quality.
3. A comprehensive final examination may be required. Such examination may be oral, written, or a combination of both. For detailed information the head of the major department should be consulted.
4. A thesis or formal problem report, prepared in accordance with the rules of the Committee on Graduate Study, must be submitted in duplicate to the Dean of the College not later than May 15 (of the year in which the degree is desired) bearing the approval of the thesis adviser and department head. These official copies will be bound and placed in the University Library. The research project and thesis or report will comprise from two to six of the required credits.

5. Up to a maximum of 10 credits of graduate work taken at a properly accredited graduate school may be transferred in partial fulfillment of the requirements for the degree upon recommendation of the major department head and the Dean of the College with the approval of the Director of Graduate Studies, except in the College of Education where the maximum is six credits. All work so transferred must be of "A" or "B" quality and must form an integral part of the student's program of study in The University of Akron.

6. All work offered in fulfillment of the minimum credit requirement must have been taken within the five-year period immediately preceding the date on which the last requirement is completed. When graduate study is interrupted by military service the five year limit may be extended by the amount of time in service to a maximum of three years.

7. Degree candidates must attend and participate in the Baccalaureate and Commencement exercises at which the degree is conferred and must discharge all University obligations.

8. Additional requirements, if any, are listed hereafter under the college in which the program contemplated is offered.

## MAJOR AND MINOR

The program of study leading to a graduate degree may be composed of work in one or more departments of the University depending upon the purpose and need of the student.

If it is agreed in conference with the major department head that some work will be taken in other departments, the minor or minors should be selected and planned to constitute an integrated program of advanced study. Furthermore, the student must demonstrate that he has had sufficient undergraduate work, or its equivalent, in the proposed major and minor areas to qualify him for study on the graduate level therein.

## FEES

A resident of Akron who enrolls in graduate courses or in "200" level courses for graduate credit shall pay a fee of $22.00 per credit for all such credit work.

A nonresident of Akron who enrolls in graduate courses or in "200" level courses for graduate credit shall pay a fee of $27.00 per credit for all such credit work.

An auditor shall pay the same fee as a student enrolled for credit.

Students taking work for graduate credit shall be subject to whatever other special and miscellaneous fees published in the University Catalog may be applicable to their respective cases.

## FELLOWSHIPS AND SCHOLARSHIPS

The Firestone Tire & Rubber Company, the Goodyear Tire & Rubber Company, and The American Viscose Corporation have each provided a fellowship for graduate study leading to the Master of Science degree in rubber and polymer chemistry. Each of the three fellowships carries an annual stipend of $1,500. In addition, tuition and all fees are remitted by the University to the recipient of each fellowship in return for nine hours of work per week as a laboratory assistant.

Several research assistantships, carrying stipends of $3,300 to $3,600 per year, are offered jointly by the Institute of Rubber Research and the Chemistry Department. Recipients devote about 20 hours per week to work

on sponsored research contracts and about 15 hours per week to undergraduate laboratory supervision. Frequently the contract research performed is applicable, at least in part, to the requirements for a graduate degree. Enrollment in evening graduate courses usually enables the research assistant to complete the work for the Master's degree in two years.

For further information concerning financial assistance available to students see the booklet prepared by the University Committee on Scholarships, Awards and Grants.

## ADVANCEMENT TO CANDIDACY

A graduate student who wishes to qualify for an advanced degree should make his desire known to the head of his major department during, if not prior to, his first semester of enrollment in graduate courses. At that time his complete academic record will be reviewed by the dean of the college or the department head, and his program of study will be outlined provided he meets the standards set forth in this publication.

A student working toward the Doctor's degree will file with the Director of Graduate Studies an application for advancement to candidacy upon successful completion of his comprehensive examinations. The application will bear the approval of the major department head and will list all requirements that remain to be completed.

A student working toward the Master's degree will file with the Director of Graduate Studies a similar application when he has completed all but his last semester of work. This application must be filed no later than the first week of the student's last semester. It must bear the recommendation of the dean or major department head, as well as the statement of work to be completed.

Each candidate for an advanced degree must file with the Registrar a diploma order not later than April 1 of the year in which the degree is expected, at which time he will pay thesis binding fees (currently $2.50 per copy) and thesis fee (currently $10.00). The latter fee will be collected only in cases where the thesis has *not* resulted from enrollment in a research course carrying the amount of credit assigned to the thesis.

## BUCHTEL COLLEGE OF LIBERAL ARTS

### THE DOCTOR OF PHILOSOPHY DEGREE

Programs of advanced study leading to the Ph.D. degree are offered by the Department of Chemistry in collaboration with the Institute of Rubber Research. The degree will be awarded to students who show a mastery of the field, who demonstrate their ability to pursue independently and carry to successful conclusion a significant piece of original research, and who have met the following requirements:

1. An applicant for admission to the program must satisfy the Committee on Graduate Study and the head of the Chemistry Department that all required secondary and college credits have been secured and that the candidate has received a Bachelor's degree from a regionally accredited institution. The applicant may be required to prove that he has a satisfactory background for the program by passing such examinations as the Committee on Graduate Study may prescribe. It is further required for admission to full graduate standing that the applicant show at least a 2.50 quality point

ratio for all undergraduate work and a 2.75 quality point ratio in the major field. Otherwise, the applicant may be placed on provisional status by the Director of Graduate Studies.

2. The candidate for the degree must spend at least one calendar year in full-time residence research.

3. The candidate for the degree must complete satisfactorily in the judgment of the Head of the Chemistry Department and the Director of Graduate Studies a minimum of 48 credits in graduate courses. Twelve credits a semester shall be considered a normal load. At least 24 credits of graduate work must be completed at The University of Akron.

4. The candidate for the degree must give evidence of ability to use in his work at least two modern foreign languages approved by the head of the Chemistry Department.

Language examinations are given once each semester on a date announced by the department head. The candidate must pass the language examinations before taking the comprehensive examination.

5. The candidate for the degree will be required to pass satisfactorily a comprehensive examination covering his course work approximately at the time of the completion of his courses. The time for each candidate's examination shall be established by the head of the Chemistry Department. The candidate also will be required to pass satisfactorily an examination on his research dissertation upon its completion and acceptance.

6. The candidate for the degree will be required to prepare a dissertation based upon original research which has been approved by the head of the Chemistry Department. The dissertation must be a contribution to knowledge worthy of publication and unrestricted in circulation except for unforeseen limitations that may arise out of national security regulations. The dissertation, prepared in accordance with the rules of the Committee on Graduate Study, must be submitted in duplicate to the Dean of the College no later than May 15 (of the year in which the degree is desired) bearing the approval of the adviser and department head. These official copies will be bound and placed in the University Library. Credit for the dissertation will be established by enrollment in Chemistry 401, and shall be equivalent to 36 credits of graduate work and shall be in addition to the 48 credits of graduate courses mentioned in "3." The amount of credit for the dissertation in each academic semester or term shall be determined by the head of the Chemistry Department.

7. In general, the candidate must complete the work and examinations for the degree within ten years from the date of admission to the program, unless excused from this requirement by the head of the Chemistry Department and the Director of Graduate Studies.

### THE MASTER'S DEGREE

Programs of advanced study leading to the Master's degree are offered by the Departments of Chemistry, Economics, English, History, Physics, Political Science, and Psychology. Before undertaking such a program the student must show that he has:

1. Met the general requirements for admission to graduate study.

2. Met the standard requirements for an undergraduate major in the area of proposed graduate specialty or that he has performed work which the department head approves as equivalent to an undergraduate major.

3. Attained a quality point ratio of at least 2.75 in his undergraduate major field.

General requirements for the degree are listed on preceding pages.

Additional requirements in effect in the several departments offering graduate programs follow:

Chemistry: A minimum of 12 credits of work, including at least two credits of laboratory must be offered from the following list of courses: 307, 309, 311-312, 319-320, 321-322, 331-332, 303-304, or 333-334, 335-336, 337-338. The research project (Enrollment in 365-366) and resulting thesis will constitute four to six of the credits required for the degree. Attendance and participation in seminar-type discussions scheduled by the department are required. Demonstration, prior to last semester of enrollment, of reading proficiency in a foreign language appropriate to the field of study.

Economics: The thesis project normally will constitute four of the required credits.

English: Unless previously taken, the following courses must be included in the program: 201, 209, 231-232, 301. Three credits will be earned in 301. Demonstration, prior to last semester of enrollment, of reading proficiency in a foreign language appropriate to the field of study.

History: Completion of 301 for a total of three credits.

Physics: The following courses must be included in the program: 317-318, 309-310.

Political Science: Completion of 311 for a total of three credits.

Psychology: Completion of 317 and 402.

## THE COLLEGE OF ENGINEERING

A program of advanced study leading to the Master's degree in General Engineering is offered.

In addition to the general requirements for admission to graduate status, an applicant for graduate study in Engineering is required to hold a Bachelor's degree in a curriculum accredited by the Engineers' Council for Professional Development at the time of his graduation. Applicants holding other Bachelor's degrees in Engineering will be considered for provisional graduate status.

Additional College requirements may be specified.

In addition to the general requirements for the degree, which are listed on preceding pages, the student must include in his program approved courses as follows:

a. 5 to 10 credits in Mathematics.
b. 5 to 10 credits in Physics.
c. At least 15 credits in Engineering courses including the following three courses:
   33 :301. Computers and Computer Methods, 3 credits.
   33 :302. Engineering Analysis, 3 credits.
   33 :303. Data Analysis, 3 credits.
d. The remaining credits in approved Engineering courses.

## THE COLLEGE OF EDUCATION

Programs of advanced study leading to the degree of Master of Arts in Education (for candidates holding the B.A. degree) and Master of Science in Education (for candidates holding a B.S. or B.E. degree) are offered in the College of Education.

Students who expect to earn the Master's degree for advancement in the field of teaching must have met the general requirements for admission to graduate study and must be qualified to hold a standard teaching certificate. Exceptions to this latter requirement will be made for qualified students who do not wish to teach or perform duties in the public schools, provided they present or acquire an appropriate background of study or experience. Students who expect to earn the Master's degree in personnel and administration also should have some successful teaching experience. A physical examination may be required if and when indicated. Any student who exhibits a deficiency in English or other skills may be required to correct the same before recommendation for an advanced degree.

The general requirements for the degree, listed on preceding pages, must be met.

All graduate degree programs must be approved by the Dean of the College of Education and must include the following courses which will comprise 12 to 14 of the 30 credits required:

30 :303 Advanced Educational Psychology or 30 :308 Advanced Child and Adolescent Psychology.
27 :311 Statistics in Psychology and Education
27 :323 History of Educational Thought
27 :324 Contemporary Philosophies of Education
27 :425 Techniques of Research
27 :450 Research Problem

In addition to the required courses listed above, the following course lists are published as guides to graduate students selecting work in areas of their interest:

### ELEMENTARY EDUCATION

27 :330 Elementary School Curriculum and Teaching
27 :313 Diagnostic Testing and Remedial Teaching
27 :312 Techniques of Evaluation
27 :322 Supervision of Instruction
27 :436 Seminar in Elementary Education

A minor of 12 credits in an academic field or Psychology or 12 credits elected from courses in Education.

This is intended primarily for the student who expects to progress as a teacher in elementary schools. Students who look forward to an elementary school principalship will qualify by electing courses in Administration.

### SECONDARY EDUCATION

27 :319 Secondary School Curriculum and Teaching
27 :302 Principles of Guidance
27 :312 Techniques of Evaluation
27 :322 Supervision of Instruction
27 :437 Seminar in Secondary Education

A minor of 12 credits in an academic field is recommended for teachers of academic subjects.

ELEMENTARY SCHOOL PRINCIPAL

27 :345-346 Public School Administration
27 :331 Elementary School Administration
27 :322 Supervision of Instruction
27 :330 Elementary School Curriculum and Teaching
27 :436 Seminar in Elementary Education
27 :312 Techniques of Evaluation
27 :313 Diagnostic Testing and Remedial Teaching
30 :310 Principles of Psychotherapy

SECONDARY SCHOOL PRINCIPAL

27 :345-346 Public School Administration
27 :320 Secondary School Administration
27 :322 Supervision of Instruction
27 :319 Secondary School Curriculum and Teaching
27 :437 Seminar in Secondary Education
30 :305 Psychology of Learning
27 :302 Principles of Guidance
27 :312 Techniques of Evaluation
30 :208 Principles and Techniques in Personnel Counseling

SCHOOL SUPERINTENDENT

27 :345-346 Public School Administration
27 :331 Elementary School Administration
27 :320 Secondary School Administration
27 :322 Supervision of Instruction
27 :330 Elementary School Curriculum Teaching
27 :319 Secondary School Curriculum and Teaching
27 :302 Principles of Guidance
27 :312 Techniques of Evaluation

SUPERVISOR

Supervisory certificates are issued for the elementary and the secondary school levels. Details of the requirements may be obtained in consultation with an adviser. The School Superintendent certificate is valid for supervisory duties at either level.

GUIDANCE COUNSELOR

Prerequisites:

30 :206 Normal and Abnormal Personality
30 :207 Psychological Testing in Personnel
30 :208 Principles and Techniques in Personnel Counseling

Courses Required for Guidance Certificate:

27 :319 Secondary School Curriculum and Teaching or 27 :330 Elementary School Curriculum and Teaching
27 :313 Diagnostic Testing and Remedial Teaching
27 :320 Secondary School Administration or 27 :331 Elementary School Administration
27 :302 Principles of Guidance
27 :304 Techniques of Guidance
27 :309 Vocational Guidance and Occupational Information
30 :310 Principles of Psychotherapy
30 :312 Clinical Study of Exceptional Children
27 :315 Practicum in School Counseling

SCHOOL PSYCHOLOGIST

30 :206 Normal and Abnormal Personality
30 :207 Psychological Testing in Personnel
30 :211 Psychological Factors in Marital and Home Adjustment (Sex Education)
30 :301 Advanced General Psychology
30 :302 Advanced Social Psychology
30 :310 Principles of Psychotherapy
27 :313 Diagnostic Testing and Remedial Teaching

Individual Practicums in Clinical Psychology:

A. 30 :320 Diagnostic Techniques (100 hours)
B. Remedial Techniques in subject disabilities (100 hours)
C. Treatment Procedures in Personal, Education and Vocation Guidance (100 hours)

27 :330 Elementary School Curriculum and Teaching
30 :306 Individual Psychological Testing

Recommended background courses not necessarily for graduate credit:

Education and Psychology

30 :208 Principles and Techniques of Personnel Counseling
27 :302 Principles of Guidance

Sociology Department

22 :117 Child Welfare
22 :206 Community Organization
22 :213 The Juvenile Delinquent
22 :217 Race Relations

Speech Department

24 :271 Speech Correction and 24 :273 Clinical Practice
24 :272 Speech Correction and 24 :274 Clinical Practice

Only students with an excellent undergraduate background will be accepted into this program.

If possible, the student should complete the courses at the 200 level as part of his undergraduate background.

## THE COLLEGE OF BUSINESS ADMINISTRATION

Programs of advanced study leading to the degree of Master of Business Administration are offered in the College of Business Administration. Before undertaking such a program the student must show that he has:

1. Met the general requirements for admission to graduate study.

2. Met the standard requirements for an undergraduate major in the area of proposed graduate specialization or that he has completed in a satisfactory manner such background courses as may be prescribed by the faculty of the college to provide adequate basis for graduate study. The necessary background courses may total up to 30 credits of undergraduate level work for those whose academic records show no courses in economics or business administration.

3. Attained a quality point ratio of at least 2.75 in his undergraduate major field (or in economics and business administration courses taken as an undergraduate or in the background program).

General requirements for the degree are listed on preceding pages. In addition to these the student must follow a graduate study program approved by the department in which he desires to pursue advanced study.

Upon completion of not less than 15 credits of graduate work with a point average of no less than 3.0 the student may apply for advancement to candidacy for the degree.

The degree program consists of work in three areas to be selected as follows:

1. *Business Administration Core Courses*
   a. Functional Courses consisting of three of the following:
      39:327 Accounting Management and Control ..... 3 cr.
      40:374 Financial Management and Policy ..... 3 cr.
      40:390 Marketing Management and Policy ..... 3 cr.
      42:363 Industrial Relations ..... 3 cr.
   b. Administration Courses as follow:
      40:366 Management Behavior—Methods ..... 3 cr.
      40:369 Organizational Theory and Policy Formulation ..... 3 cr.

2. *General Courses as follow:*
   40:350 Administrating Costs and Prices ..... 3 cr.
   6:241 Economic Analysis ..... 3 cr.
3. *Concentration Courses amounting to 9 credits in one of the following areas:*
   a. Accounting
   b. General Business (including Marketing-Merchandising or Finance)
   c. Industrial Management

Students with undergraduate majors in business administration may have some of the requirements under group 1. a. above waived, the credits to be made up in additional courses under group 2. Following course 6:241 such students should take either 6:294 National Income and Its Variation or 6:293 Development of Economic Thought. Under group 3, students may elect 9 credits in course work or may include in the 9 credits either Seminar and Report up to 3 credits or Seminar and Thesis up to 4 credits.

## GRADUATE COURSES

All courses bearing a course number higher than 299 carry graduate credit automatically upon successful completion. Courses numbered 300 to 399 are open also to senior undergraduate students of exceptional ability who, with approval of their advisers, wish to include a few such courses in their Bachelor's degree programs or wish to start on graduate degree programs. Courses numbered 400 to 499 are open only to students who hold the Bachelor's degree.

Enrollment in all courses is subject to the provisions of paragraph two of the section of this bulletin headed "Major and Minor."

### ACCOUNTING

39:321 39:327 39:398

### BIOLOGY

3:367-368

### CHEMISTRY

| | | | | | |
|---|---|---|---|---|---|
| 5 :307-308 | 5 :319-320 | 5 :335-336 | 5 :301-302 | 5 :327-328 | 5 :333-334 |
| 5 :309 | 5 :321-322 | 5 :337-338 | 5 :303-304 | 5 :329-330 | 5 :343-344 |
| 5 :310 | 5 :325 | 5 :339 | 5 :326 | 5 :331-332 | 5 :365-366 |
| 5 :311-312 | | | | | 5 :401 |

### CIVIL ENGINEERING

34:302 34:303 34:304

### EDUCATION

| | | | | | |
|---|---|---|---|---|---|
| 27 :302 | 27 :312 | 27 :319 | 27 :324 | 27 :341 | 27 :433-434 |
| 27 :304 | 27 :313 | 27 :320 | 27 :330 | 27 :345-346 | 27 :436 |
| 27 :309 | 27 :315 | 27 :322 | 27 :331 | 27 :425 | 27 :437 |
| 27 :311 | 27 :317 | 27 :323 | 27 :335 | 27 :427 | 27 :450 |

### ELECTRICAL ENGINEERING

35:300 35:301 35:302 35:303

### ENGLISH

7:301

### GENERAL BUSINESS

40:350 40:369 40:390
40:366 40:374 40:398

### GENERAL ENGINEERING

33:301 33:302 33:303

HISTORY
12:301

INDUSTRIAL MANAGEMENT
42:307 42:363 42:398

MECHANICAL ENGINEERING
36:300 36:301 36:302 36:303

PHYSICS

| | | | | | |
|---|---|---|---|---|---|
| 20 :301 | 20 :304L | 20 :306L | 20 :309-310 | 20 :314L | 20 :333 |
| 20 :304 | 20 :306 | 20 :307 | 20 :311-312 | 20 :317-318 | 20 :351 |
| | | | 20 :314 | 20 :331-332 | 20 :352 |

POLITICAL SCIENCE

| | | | | | |
|---|---|---|---|---|---|
| 21 :301 | | 21 :302 | | 21 :303 | 21 :311 |

PSYCHOLOGY

| | | | | | |
|---|---|---|---|---|---|
| 30 :301 | 30 :305 | 30 :308 | 30 :310 | 30 :314 | 30 :401 |
| 30 :302 | 30 :306 | 30 :309 | 30 :312 | 30 :317 | 30 :402 |
| 30 :303 | 30 :307 | | | 30 :320 | |

SPEECH
24:393

## COURSES IN WHICH GRADUATE CREDIT MAY BE EARNED

Courses bearing course numbers from 200 to 299 inclusive are senior undergraduate courses. However, a graduate student, *with the approval of his adviser and the department head concerned,* may establish graduate credit through enrollment in certain courses numbered from 200-299 provided he:

1. Declares at registration his intention to earn graduate credit in the course.
2. Makes certain that the course is entered on his enrollment blank with a 500 instead of a 200 number (e.g., Course 39:230 taken for graduate credit would be entered as 39:530).
3. Pays the fee for graduate credit.
4. Informs the instructor at the first meeting of the class that he is enrolled for graduate credit.
5. Performs the additional assignments given him by the instructor (approximately one-third more work than is required of the undergraduate student).
6. Earns an "A" or "B" in the course.

Enrollment in all courses is subject to the provisions of paragraph two of the section of this bulletin headed "Major and Minor."

The following 200 level courses may be taken for graduate credit:

ACCOUNTING

| | | | | | |
|---|---|---|---|---|---|
| 39 :230 | 39 :231-232 | 39 :233-234 | 39 :236 | 39:237-238 | 39 :299 |

ART
2 :203-204 2 :225-226

BIOLOGY

| | | | | | |
|---|---|---|---|---|---|
| 3 :215-216 | 3 :235 | 3 :256 | 3 :258 | 3 :265 | 3 :267-268 |
| 3 :217 | | | | | |

CHEMISTRY
5 :201

ECONOMICS

| | | | | | |
|---|---|---|---|---|---|
| 6 :204 | 6 :241 | 6 :293 | 6 :295-296 | 6 :298 | 6 :299 |
| 6 :239 | 6 :260 | 6 :294 | | | |

EDUCATION

27 :204 27 :234 27 :235 27 :251-252

ENGLISH

7 :201 7 :205 7 :209 7 :213 7 :217 7 :222 7 :231-232
7 :202 7 :207 7 :212 7 :214 7 :221 7 :223 7 :240

GENERAL BUSINESS

40 :248 40 :268 40 :277 40 :291 40 :296 40 :297-298
40 :264 40 :272 40 :279 40 :293

HISTORY

12 :219 12 :223 12 :225 12 :242 12 :245 12 :251
12 :222 12 :224 12 :246 12 :261

INDUSTRIAL MANAGEMENT

42 :256 42 :260

MATHEMATICS

17 :201 17 :205 17 :207 17 :209 17 :211 17 :257
17 :204 17 :206 17 :208 17 :210

PHILOSOPHY

19 :221-222 19 :224 19 :229 19 :241 19 :242

PHYSICS

20 :201 20 :202 20 :204 20 :205 20 :235

POLITICAL SCIENCE

21 :205 21 :207 21 :212 21 :220
21 :206 21 :211 21 :213-214 21 :243

PSYCHOLOGY

30 :206 30 :207 30 :208 30 :211 30 :214 30 :216

SOCIOLOGY

22 :202 22 :206 22 :213 22 :216 22:219-220 22 :221
22 :204 22 :210 22 :215 22 :217

SPEECH

24 :271-272 24 :273-274 24 :277 24 :290 24 :291-292

# EVENING AND ADULT EDUCATION DIVISION

D. J. GUZZETTA, ED.D., *Dean*

The Evening and Adult Education Division offers educational opportunities for study in the following areas.

*The Evening College Program* provides students opportunities to improve themselves in their employment, to study toward college degrees in liberal arts and sciences, engineering, education, and business administration, and to expand their knowledge in special fields of interest. Both undergraduate and graduate credit courses are offered in the Evening College.

*The Community College Program* includes non-credit courses planned to meet specific needs and interests of those persons who prefer less extensive study. These courses are conducted largely on the group conference or discussion basis with emphasis in the areas of culture, business and industry, self-improvement and avocational. A recent addition to this program provides opportunities for informal adult study. This is accomplished through Discussion Programs dealing with a number of topics designed to arouse individual intellectual curiosity.

*The Institute for Civic Education* serves as the community service arm of the Division, providing special services and programs for groups and organizations in the greater Akron area. Conferences, workshops and special educational programs are conducted either for particular vocational or professional groups or for the citizens of the entire community. The Institute also provides a program service for organizational leaders, including advice on speakers, audiovisual aids, and methods for improving the quality of programs.

Announcements of courses and programs may be obtained from the Evening Division office in Buchtel Hall. Catalogs for the evening program include the necessary information concerning admissions, prerequisites, student course loads, absences, withdrawals, grades, and other aspects of the evening program.

Evening student activities provide opportunity for the extra-curricular interests associated with college life. An evening Student Council directs extra-curricular affairs. Other organizations include a theatre group, the national scholastic honorary fraternity, Alpha Sigma Lambda, the evening local sorority, Gamma Beta, the evening social fraternity, Chi Sigma Nu, and the Alpha Epsilon Honorary Fraternity.

# SUMMER SESSION

D. J. GUZZETTA, ED.D., *Director*

Opportunities for Summer study, day and/or evening, are provided through the University Summer Session. Its program is designed chiefly for:

1. Teachers who wish to obtain emergency certificates or renew certificates, or those who are working toward the Bachelor or Master's degree.
2. High school graduates who want to begin their University courses immediately following graduation in June.
3. Regular cooperative engineering students whose program requires Summer Session attendance.
4. Transient students from other institutions.
5. Regular University students who wish to continue their course work throughout the Summer.

The thirty-seventh annual Summer Session (1958) is organized as follows:

1. Six-Week Day Session ..... June 16 — July 25
2. Eight-Week Engineering College Program ..... June 16 — August 8
3. Eight-Week Evening Session ..... June 16 — August 8
4. Post-Session ..... July 28 — August 22

## REQUIREMENTS FOR ADMISSION

Applicants for admission to the Summer Session must meet the same entrance requirements as established by the University for attendance during the regular academic year.

Students who expect to complete the requirements for degrees or certificates at the close of the 1958 Summer Session should inquire at the office of the Director during the first week of classes.

## STUDENT TEACHING

All requests for student teaching should be made to the Dean of the College of Education by May 15. A deposit of $10 is required with each formal application. Student teaching in the 1958 Summer Session is scheduled as follows:

Spicer Elementary, Barberton Elementary ..... June 16 — July 25
Barberton High School ..... June 16 — July 25
Akron Central High School ..... June 9 — August 1

# RESERVE OFFICERS' TRAINING CORPS

The United States Government established a unit of the Reserve Officers' Training Corps at The University of Akron in 1919. Instruction is divided into two parts: the basic course of the first two years, and the advanced course of the last two years.

In 1946, the United States Air Force established a unit of the Air Force Reserve Officers' Training Corps at the University.

## OBJECTIVES OF THE ROTC PROGRAM

1. To develop character and good moral habits.
2. To inculcate good habits of citizenship in young men and acquaint them with the duties, responsibilities, and obligations of citizens.
3. To make ROTC an integral and useful part of the college and community.
4. To produce qualified career officers for the U. S. Army and U. S. Air Force.
5. To produce qualified reserve officers for the U. S. Army and U. S. Air Force.

## THE BASIC COURSE

A two-year basic course in ROTC is required of all physically fit male students during the freshman and sophomore years with the following exceptions:

a. Aliens.
b. Men physically disqualified, carrying less than eight hours, or with more than one year prior honorable military service.
c. Men above 23 years of age or enrolled in short professional or pre-professional courses not leading to degrees.
d. Men who have completed 48 credits at another accredited college or university.
e. Men who submit written declaration of valid religious or conscientious objections to military service.

During the basic course, uniforms and equipment are issued to students, and returned at the end of the year, or upon leaving the program. Each student pays a $4 fee and is responsible for loss or damage to government property issued to him.

# ARMY

## GENERAL MILITARY SCIENCE

The Army ROTC at The University of Akron is a General Military Science type unit. This means that graduates of the Army program may be commissioned in any of the arms and services of the U.S. Army. The determination in which service the graduate will be commissioned will coincide with the desires of the student, the major field in which the academic degree was earned, and the needs of the Army.

## THE ADVANCED COURSE

The Army ROTC program consists of five hours per week during the junior and senior years. The advanced course is open to all students who have satisfactorily completed the basic course and veterans who have been honorably discharged or transferred to the Enlisted Reserve Corps and relieved from active duty, provided that they are selected by the President of the University and the Professor of Military Science and Tactics.

While the student is enrolled in the advanced course, the government pays a total of $100 toward the purchase of a complete, individually tailored uniform that becomes the property of the cadet upon graduation and may be worn upon entry to active duty. In addition, the government pays the cadet a monetary allowance.

The Army unit requires that the student must be eligible to qualify for a commission prior to attaining the age of 28.

Once the student enters the advanced course, he must complete it to qualify for a University degree unless excused by the President of the University.

The Army ROTC student qualifies for his commission in the Army Reserve Corps by completing the advanced course and by completing the academic requirements for a Bachelor's degree.

On the basis of scholastic attainment and demonstrated leadership, students will be designated distinguished military students and will be given an opportunity to qualify for a regular Army commission upon graduation.

The Army ROTC allows credit for RFA training for six months.

The Army now has a contract with the National Advisory Council for Aeronautics for assignment in Aeronautical Research for Army ROTC Graduates with degrees in Engineering or Physical Science. They work with outstanding men in the field of Aeronautical Research, perform no military duty, receive all rights and benefits of officers and reduce their obligation for military services.

Any graduate may be deferred from call to Active Duty up to three years to work on a Master's or a Doctor's Degree.

The Army trains and utilizes hundreds of pilots each year and has need for Engineers in the Ordnance, Signal, Transportation, and Chemical Corps as well as the Missile Program and the Corps of Engineers.

## THE ADVANCED CAMP

Six-week Advanced ROTC camps are conducted each Summer. Students will be required to attend one Summer camp program unless sooner discharged from the ROTC. The student will receive the pay of the first enlisted grade while at the advanced camp, and he will be reimbursed for his travel to and from the camp.

## AIR FORCE

As a permanent program of instruction at civilian educational institutions, it is the mission of the AFROTC to select, educate, and motivate students to serve as commissioned officers in the regular and reserve components of the United States Air Force. Specialized training in USAF occupational career fields is no longer incorporated into the AFROTC program. Under

the new generalized curriculum, the basic program serves two purposes: (1) The education, motivation, and selection of potential junior officers for the advanced phase and, (2) It provides an opportunity to offer an air-age citizenship course to a large segment of the male undergraduate population of the University.

## THE ADVANCED COURSE

The advanced program consists of five class hours per week during the junior and senior years.

The advanced program is open to men who are physically qualified and are interested in flying with the United States Air Force, either as a pilot or observer, and to a limited number of selected engineering and science majors. Entrance into the advanced phase is limited to men who have successfully completed the basic course, will be in upper college at the time of entrance, who are in phase scholastically, and to veterans who have been honorably discharged from the Armed Forces or transferred to the Enlisted Reserve Corps and relieved from active duty.

Air Force directives now require all veterans enrolling at universities or colleges, who plan to enter the advanced phase of AFROTC, to attend basic AFROTC class. However, the Professor of Air Science may waive so much of the basic course as he considers equivalent to the active service training provided that he does not waive any portion which the cadet can complete prior to entrance into the advanced course. To satisfy entrance requirements for the advanced course, veterans entering an institution at freshman or sophomore level who desire a commission through AFROTC will be required to take in phase with nonveteran contemporaries that portion of the basic program which remains. Final selection will be made by the President of the University and the Professor of Air Science.

The student must be less than 28 years of age at the time of graduation if enrolling as a Category II (engineering) applicant, or 27 years of age at the time of graduation, if enrolling as a Category I or IA (flight) applicant.

Once the student enters the advanced course, he must complete all requirements for a degree within two years (engineering students, three years) in order to qualify for a commission. Once a student enters the advanced course he must complete it to qualify for a University degree unless excused by the President of the University.

Senior AFROTC students who have been selected for pilot training receive 36½ hours of flight instruction from an approved flying school at no cost to the student. A private pilot's license is issued to those who complete this flying course.

## THE ADVANCED CAMP

A four-week Summer camp is conducted each Summer. Students will be required to attend one Summer camp, usually between the junior and senior year, unless sooner discharged from the AFROTC program. Students will receive the pay of an airman basic while at camp and will be reimbursed for their travel to and from camp.

# STUDENT ACTIVITIES AND SERVICES

## COUNSELING

The Student Personnel Office coordinates the counseling services of the University and, in cooperation with the faculty, contributes to the development of students in the University, and in later life by helping them recognize and solve their problems.

## HEALTH SERVICE

The University Health Service maintains complete physical records of all students. The University physician and registered nurse are on duty daily. Psychiatric service also is available.

## STUDENT EMPLOYMENT

The Student Personnel Office operates a placement bureau for both full-time and part-time student employment.

## EXTRA-CURRICULAR PROGRAM

The University of Akron offers a well-rounded student program of extra-curricular activities through such organizations as the Student Council, Women's League, YMCA and YWCA, departmental clubs, religious groups, sororities, and fraternities. Opportunities for personal development in special fields are afforded through participation in athletics for men and women, campus radio, drama, debate, musical events, student newspaper and yearbook.

Activities are held in Memorial Hall (health and physical education), Kolbe Hall (theatre and radio studios), Firestone Conservatory of Music, and the Student Center (publications offices, lounge, etc.).

# STUDENT ORGANIZATIONS*

## HONORARY

Alpha Chi Sigma (N) Chemistry; Alpha Lambda Delta (N) Freshman Scholastic; Alpha Sigma Lambda (N) Evening; A. E. Honorary Fraternity (L) Evening; Arnold Air Society (N) Advanced Air Force ROTC; Beta Delta Psi (L) Commerce; Kappa Delta Pi (N) Education; Omicron Delta Kappa (N) Men's Activities; Pershing Rifles (N) Basic Military; Phi Alpha Theta, (N) History; Phi Eta Sigma (N) Freshman Scholastic; Phi Sigma Alpha (L) Liberal Arts Scholastic; Phi Sigma Society (N) Biological; Pi Kappa Delta (N) Forensic; Pi Omega Pi (N) Business Education; Pi Sigma Alpha (N) Political Science; Pierian (L) Senior Women's Activities; Psi Chi (N) Psychology; Sabre Squadron (L) Basic Military; Scabbard and Blade (N) Advanced Military; Sigma Pi Epsilon (L) Education; Sigma Tau (N) Engineering; Sigma Theta Tau (L) Secretarial Science; Sigma Xi Club (N) Tau Kappa Phi (L) Home Economics.

## STUDENT CLUBS

American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; Association for Childhood Education; Art Club; Biology Club; Blue and Gold Music Association; Chemistry Club; Commerce Club; Economics Association; Future Teachers of America; History Club; Home Economics Club; Independent Student Or-

Note: N means National. L means Local.
*A detailed description of the objectives and purposes of these organizations is given in the "A" book, a handbook of student rules and regulations.

ganization; Industrial Management Club; Johnson Club; LeCercle Francais; Marketing Club; Newman Club; Ohio Society of Professional Engineers; Philosophy Club; Physical Education Club; Physical Education Society; Physics Club; Political Science Club; Psychology Club; Radio and Television Workshop; Secretarial Science Club; Sociology Club; Speech Club; Tertulia Espanola; University Christian Fellowship; University Theatre; Varsity "A" Club; Women's Athletic Association; YMCA; YWCA.

### SORORITIES

Kappa Kappa Gamma (N) Chartered 1877; Delta Gamma (N) Chartered 1879; Phi Mu (N) Chartered 1912; Alpha Gamma Delta (N) Chartered 1922; Zeta Tau Alpha (N) Chartered 1929; Theta Phi Alpha (N) Chartered 1931; Alpha Delta Pi (N) Chartered 1938; Theta Upsilon (N) Chartered 1939; Gamma Beta (L) Evening Session, Chartered 1935.

### FRATERNITIES

Alpha Epsilon Pi (N) Chartered 1941; Alpha Phi Alpha (N) Chartered 1957; Lambda Chi Alpha (N) Chartered 1919; Phi Delta (N) Chartered 1875; Phi Kappa Tau (N) Chartered 1938; Phi Sigma Kappa (N) Chartered 1942; Pi Kappa Epsilon (L) Chartered 1882; Tau Kappa Epsilon (N) Chartered 1948; Theta Chi (N) Chartered 1942; Chi Sigma Nu (N) (Evening Session) Chartered 1932.

## INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

### STATEMENT OF POLICY ON ATHLETICS

The University of Akron is aware that it must be concerned for the physical well-being in addition to the mental development of its students. Accordingly, it provides physical and health education for both men and women students. Intercollegiate and intramural sports are important features of this physical education program. The program also serves as a laboratory for students preparing for careers as elementary and secondary teachers in this field, or as leaders in recreation and health activities.

Intercollegiate athletics are directed and controlled by the faculty in the same manner as all other academic and extra-curricular activities. The Director of Athletics and the coaches of intercollegiate teams are members of the faculty holding academic rank.

The principal difference between the intramural and the intercollegiate programs is that the former provides wholesome recreation and physical exercise for all able-bodied men and women students, whereas the latter necessarily is limited to those who have special skills and aptitudes. But participants in both must be college students whose fundamental aim is to obtain a sound college education.

To aid in the administration of its program of intercollegiate athletics, the University has a faculty Committee on Athletics, appointed by the President. This Committee is responsible for the conduct of the program, including the approval of schedules, coaching personnel, budgets, etc.

The University believes that a well-balanced program of intercollegiate sports is important so long as it remains in its proper focus as an adjunct to the real purpose of the institution — teaching and research; so long as it is under academic control; so long as the players are bona fide college students; and so long as the coaches strive to instill qualities of honor, sportsmanship, and clean play. The University is conducting its program of intercollegiate athletics in accordance with these principles.

## ALUMNI ASSOCIATION

The University of Akron Alumni Association consists of the graduates and former students of the University, and the Alumni Office serves as liaison between the University and its alumni.

## COMMUNITY SERVICES

The University of Akron, as a municipal institution, aims to serve the community in every way consistent with its educational philosophy. In addition to the regular civic contribution of each college by way of teaching, research, consultation, and cultural and scientific talks and demonstrations, there are special courses through the Evening and Adult Education Division, University-sponsored conferences on various phases of public welfare, and radio and television broadcasts on educational subjects.

Of significance are the following special services:

Located in Knight Hall, the Institute of Rubber Research supervises and sponsors fundamental and applied research in synthetic and natural rubbers, based on contracts with government agencies, foundations and private industry.

The Institute for Civic Education, a part of the Evening and Adult Education Division, located in Buchtel Hall, sponsors special community conferences and workshops, as well as opportunities for informal adult study.

The Physical Testing Laboratory in Simmons Hall provides clinical and physical testing facilities for various public services and agencies and commercial organizations.

Psychological Services at 381 Carroll Street provides testing and counseling services to members of the community at a nominal fee. Students may take advantage of this service by making application at the Student Personnel Office in Buchtel Hall.

The Speech and Hearing Clinic in Kolbe Hall is available to all citizens of Akron to provide guidance and assistance in the diagnosis and treatment of all kinds of voice and speech disorders.

The University presents various types of cultural opportunities for the community such as the "Town and Gown" series of lectures, musical presentations, etc., the University film series, "World at Our Door" travel movies, and varied conferences, discussions, and forums.

## BUILDINGS

The University campus, bounded by E. Buchtel Avenue, Brown, Carroll and Sumner Streets, is half a mile east of the city's business center, on a bus line, and comprises 20 acres, including adjacent parking facilities.

The principal buildings include:

Ayer Hall, named in honor of Frederic E. Ayer, the first Dean of the College of Engineering, provides offices, classrooms and laboratories for the College.

Buchtel Hall, commemorating the name of John R. Buchtel, contains the administrative offices of the President, Financial Vice President, Treasurer, Dean of Administration, Registrar, Director of Student Personnel, Dean of the Evening and Adult Education Division, and Director of University Relations.

Education Building provides offices and classrooms for the College of Education.

Firestone Conservatory of Music, a gift of the Harvey S. Firestone family, includes two buildings located at East Market and Forge Streets, which house the Department of Music.

Home Management House, a two-story dwelling at 184 Elwood Avenue, gives Home Economics majors an opportunity to learn to manage a home.

Knight Hall, named for C. M. Knight, head of the first Science Department and a President of Buchtel College, houses the Chemistry Department and Institute of Rubber Research.

Parke R. Kolbe Hall, named for the first President of the Municipal University, includes the offices and classrooms of the Buchtel College of Liberal Arts. The University Theatre and Speech Clinic also are located in this building, as well as the Biology and English Departments.

The University Library (Bierce Library) is housed in Carl F. Kolbe Hall, as is the Audio-Visual Aids Department. General L. V. Bierce was a friend of the University; Carl F. Kolbe, father of Parke R. Kolbe, was a foreign languages professor. The Library's book collection approximates 113.000 volumes, with periodicals totaling more than 780 titles, including the unique library of the Rubber Division of the American Chemical Society.

Memorial Hall, dedicated to the memory of Summit County men and women who died in World War II, contains gymnasiums, physical education offices, classrooms, swimming pool, and University Health Service.

Olin Hall, named in honor of Charles R. Olin and Oscar Olin, houses the departments of Home Economics and Industrial Management. Charles Olin was Secretary-Treasurer of the University; Oscar Olin was Professor of Philosophy.

The Student Center includes dining facilities, student and faculty lounges, the University Bookstore and Post Office, Alumni Office, Spanton Memorial Room, University Duplicating Department and offices for student publications and organizations.

Simmons Hall, named for former President H. E. Simmons, contains offices and classrooms of the College of Business Administration, some laboratories of the College of Engineering, and the City Testing Laboratory.

The Air Force R. O. T. C. offices are located across Buchtel Avenue, opposite Knight Hall.

Crouse Gymnasium, now used only for lectures, named in 1888 for George W. Crouse, Sr., a Buchtel College Trustee, and the ROTC Armory are located toward the west end of the campus.

Buchtel Field is about four blocks south of the campus at Wheeler and Kling Streets. Its Athletic Building services the teams and physical education program.

Spicer School, an elementary school under the Akron Board of Education, is used by the College of Education for student teachers and is located east of the campus at Carroll and Elwood Streets.

# SCHOLARSHIPS, FELLOWSHIPS, AWARDS, GRANTS-IN-AID, AND LOANS

Scholarships are awarded by the Scholarship Committee of the University. Application for a scholarship should be addressed to the Chairman of the Scholarship Committee at The University of Akron. Applications may be obtained at the Office of the Chairman of the Scholarship Committee.

## AKRON EDUCATIONAL SCHOLARSHIPS

Two scholarships a year are sponsored jointly by The University of Akron, the Akron Board of Education and the Akron Educational Association to cover maintenance fees. The scholarships will be awarded to students planning to enter the teaching profession. The awards will be granted by the University Scholarship Committee upon recommendation of a committee of the Akron Educational Association and representatives of the College of Education.

## AKRON RUBBER GROUP SCHOLARSHIPS IN CHEMISTRY

An award of $200 a semester is available for entering students and undergraduate students majoring, or intending to major, in Chemistry. Outstanding ability in science and chemistry will be given primary emphasis in the award of these scholarships. The award for the second semester and renewal of the scholarship for succeeding years is contingent upon satisfactory scholarship.

## AKRON SECTION OF THE AMERICAN CHEMICAL SOCIETY AWARD

The award of student memberships and subscriptions to two of the Society's official publications is made to two chemistry major students of Junior rank on the basis of scholarship.

## AKRON SOAP BOX DERBY SCHOLARSHIP

An award of $500 to the winner of the Akron Soap Box Derby is made by the Chevrolet Dealers of the Akron area. The scholarship is payable at the time the winner becomes enrolled as a full-time student at The University of Akron.

## ACME-ZIP MATCHING SCHOLARSHIP FUND

This scholarship fund has been established from the proceeds of the Acme-Zip football games. Scholarships will be awarded to worthy students by the University Committee on Scholarships, Awards and Grants, with an equal amount going to the University General Fund. Special consideration will be given to requests from students enrolled in the Colleges of Business Administration and Engineering.

## ALPHA LAMBDA DELTA AWARD

The National Chapter of Alpha Lambda Delta, scholastic honorary for women, awards a book to the graduating Senior member with the highest scholastic average.

## AMERICAN INSTITUTE OF CHEMISTS AWARD

A student membership in the American Institute of Chemists and a medal are given to an outstanding student majoring in Chemistry. This award is granted upon the recommendation of the head of the department.

## AMERICAN VISCOSE CORPORATION FELLOWSHIP IN CHEMISTRY

The American Viscose Corporation has made available a fellowship in the amount of $1,500 per year in the Department of Chemistry, with remission of all University fees. This fellowship is open to a graduate of a standard American college or university.

### ASHTON PRIZES

A fund of $3,000 was established in 1887 by Oliver C. Ashton of Bryan, Ohio, endowing the O. C. Ashton Prizes for excellence in reading and speaking. Three contests are held during the year, one in original oratory and one in interpretative reading and extemporaneous speaking. The amounts of the prizes awarded at each contest vary from $5 to $30.

### THE SUMMERFIELD BALDWIN III SCHOLARSHIP AND BOOK FUND

This fund was established by the family of Summerfield Baldwin III. The income is to be used to assist a student in the Junior class who is majoring in the field of History and who scholastically and intellectually proves that he or she intends to pursue studies in this field, preferably to the graduate level. All awards will be made by the University Scholarship Committee.

The Book Fund is to be used for the purchase of History books for the Library, with special emphasis on Medieval History.

### BETA SIGMA PHI SCHOLARSHIP

This scholarship was created by the Beta Sigma Phi International Sorority and covers the fees and books for a four-year period. The grant is made to a young Akron woman on the basis of her interest and progress in college training, and is for one who otherwise might not be able to attend college.

### MILDRED HETER BUCKINGHAM MEMORIAL SCHOLARSHIP

The Mildred Heter Buckingham Memorial Scholarship Fund was established in 1954 by Mr. Lisle M. Buckingham in memory of his wife, Mildred Heter Buckingham. The income from this fund shall be used to assist any full-time student at the University who shows promise in the field of applied music and who is recommended for the scholarship by the Music Department. Music majors are to receive preference if equally well qualified. Final approval will rest with the University Committee on Scholarships.

### HOMER C. CAMPBELL FUND

A fund established under the will of the late Homer C. Campbell provides for assistance by loan or gift from its income to needy students dependent on their own resources. Preference is given to young men who have been newsboys in Akron.

### COLLEGE CLUB OF AKRON SCHOLARSHIP

An award of $100 sponsored by the College Club of Akron is given annually to a woman selected from the Junior class in the College of Education. It is to be used by the recipient as an aid in financing the expense of her Senior year at the University.

A scholarship in the amount of fees for an entering woman student is awarded that student who qualifies on the basis of scholastic achievement and need. Application is made in the Spring of each year.

### COOPER TIRE AND RUBBER COMPANY SCHOLARSHIPS

Two scholarships in the amount of $125 per semester are made available by The Cooper Tire and Rubber Company to two outstanding Seniors majoring in the College of Business Administration. Applicants will be judged on the basis of likelihood of success in business, scholarship, personality, and performance records at the University as manifested by campus and extra-curricular activities, and personal conditions. The award for the second semester is contingent upon satisfactory scholarship and performance during the first semester. Applications for this scholarship may be obtained from the Dean's office, College of Business Administration.

### DELTA GAMMA — RUTH K. BILLOW MEMORIAL SCHOLARSHIP

Established by Akron Alumnae Chapter of Delta Gamma, this scholarship will provide $100 or more per semester (and is renewable), on the basis of need, to a visually handicapped undergraduate or graduate student who is a resident of Summit County. The applicant need not be a full-time student, but must be approved by the University and the Akron Delta Gamma Alumnae Scholarship Committees.

### DELTA KAPPA GAMMA SCHOLARSHIP

This scholarship is offered by the Delta Kappa Gamma Society. An award of $200 annually is granted to a woman in her Junior or Senior year who expects to enter the field of teaching. The University Scholarship Committee will make the award upon the recommendation of the Scholarship Committees of the Delta Kappa Gamma Society.

### DELTA PI IOTA SORORITY SCHOLARSHIP

This scholarship of $100 a year is available to full-time women students. Either entering or continuing students are eligible. The candidate must have a satisfactory scholastic record, and evidence of need, good character, and leadership will be considered. A committee of Delta Pi Iota shall nominate a list of candidates for this annual award with the cooperation of the Scholarship Committee of the University.

### RUTH DUGAN AERONAUTIC SCHOLARSHIP

This scholarship is offered by the Akron Women's Chapter of the National Aeronautics Association. A sum, not less than $100 a year, may be awarded to an undergraduate or graduate student who is a resident of Summit County, Ohio. Upon recommendation of the Scholarship Committee of the Chapter, the University Scholarship Committee will make the award.

The scholarship is to assist a student who is primarily interested in studying some phase of aeronautics in an accredited university for a period of one year, and, with the supplementary recommendation and approval, for an additional period of one year.

### EAST AKRON BOARD OF TRADE SCHOLARSHIP

A four-year scholarship in the amount of $200 a semester for a high school graduate from one of the east Akron high schools, including East, Ellet, Springfield or Hoban High (the graduate from Hoban must be a resident of East Akron). Scholarship recipient will be judged on scholarship, need, and leadership.

### FIRESTONE AND GOODYEAR FELLOWSHIPS

Fellowships in the Department of Chemistry are offered by the Firestone Tire and Rubber Company and the Goodyear Tire and Rubber Company for the study of the chemistry and technology of rubber. These fellowships are open to graduates of standard American colleges and universities and are of the value of $1,700 per year, with remission of all University fees.

### DR. E. B. FOLTZ PRE-MEDICAL PRIZE

Under the provisions of the will of the late Dr. E. B. Foltz a fund was established to provide for a pre-medical prize of $100, which is awarded each year to that member of the graduating class who makes the highest average grade in all work taken in the four-year pre-medical course and who plans to enter medical college the following year. The name of the winner is announced at Commencement, but the actual award is not made until the winner has enrolled in medical college.

### ARTHUR L. FOSTER SCHOLARSHIPS

In January 1951, the Board of Directors of the University voted to establish a maximum of 12 scholarships per year to be awarded to graduates of Akron high schools in the amount of $140 per semester. Principals of high schools in Akron may submit names of three candidates for these scholarships for the Freshman year. The candidate must be in the upper third of his graduating class and must become a full-time student. Scholastic achievement, citizenship, promise, and leadership are the qualities used as the basis for the award, which is made by a committee of the University. Applications are made at the office of the high school principal in the last semester of the Senior year. The award for the second semester is contingent upon satisfactory scholarship for the first semester.

### ERVIN D. FRITCH AND ADA B. FRITCH SCHOLARSHIP FUND

Four scholarships in the amount of fees are awarded to worthy and capable young women and men selected by the University Scholarship Committee on the basis of scholarship, financial need, moral character and ability.

### M. M. HARRISON MEMORIAL CHEMISTRY SCHOLARSHIP FUND

The income from this fund is to provide an annual scholarship for male Chemistry students, Sophomore or above.

### THE OTIS C. HATTON SCHOLARSHIP

A four-year scholarship in the amount of $125 per semester is awarded for the purpose of aiding a graduate of an Akron public high school who is planning to enter the educational profession. Preference will be given to well-qualified male students. Candidate must be in upper third of high school graduating class. The scholarship was established by the Akron Council of Parent Teachers Association in honor of Otis C. Hatton, former Superintendent of Schools.

### ALICE HESLOP HOOVER SCHOLARSHIP

This scholarship is to be used for the purpose of aiding talented young women at The University of Akron studying voice culture who merit assistance.

### CLARENCE L. HYDE MEMORIAL SCHOLARSHIP

The Clarence L. Hyde Memorial Scholarship was created in 1946 by Mrs. Harriet Williams and Mrs. E. B. Perrin. The scholarship shall be a living memorial to Dr. Hyde and his service to humanity. The sum of $125 is to be awarded each year to a Senior student residing in Akron, and shall be determined by scholarship and by need on the part of the student. Race, color, creed, or sex shall not be considered by the committee in making the award.

### INLAND MANUFACTURING DIVISION SCHOLARSHIP FUND

The Inland Manufacturing Division of General Motors Corporation of Dayton, Ohio, has established a scholarship fund of $4,500 for two five-year scholarships in Mechanical Engineering. The candidates participate in a cooperative work-study training program. A gentleman's agreement exists between the students and the company that the students will remain with the company a minimum of 18 months after graduation from the program. The scholarship agreement between the company and the student will remain in effect as long as the student remains in good standing.

### JUNIOR WOMEN'S CIVIC CLUB SCHOLARSHIP

An annual scholarship of $170 a semester is awarded to a deserving student in the upper third of his high school class. The scholarship may be awarded either to a resident or a non-resident of Akron.

### LUBRIZOL AWARD

An award to a chemistry student, with no restriction as to year of study. $100 a semester is awarded to the recipient, with a matching amount put into the General Fund.

### C. BLAKE McDOWELL FUND

The proceeds from this fund will be used for the benefit of any person attending The University of Akron. The recipient of this assistance will be selected by the Scholarship Committee.

### LEON F. MOLDAVSKY SCHOLARSHIP

This scholarship will be awarded to an outstanding Sophomore student majoring in the biological sciences. Candidates will make application to the University Scholarship Committee, and must have at least a 3 point average for all work taken in the Freshman year. In addition to scholarship the student must have demonstrated high quality of citizenship, good moral character, and high aptitude and motivation in his major field. Financial need also will be considered.

### VICTOR I. MONTENYOHL SCHOLARSHIP

The Victor I. Montenyohl Scholarship Fund for advanced study was established in 1946 by Mrs. Elizabeth Montenyohl, his wife, and his son and daughter, Victor and Patricia, in memory of Victor I. Montenyohl, in recognition of Mr. Montenyohl's devotion to the rubber industry, and his belief that The University of Akron offered a unique opportunity for rubber research. It is considered appropriate that the income from this fund be made available whenever possible to a student well qualified and interested in the field of rubber chemistry.

### JULIUS MUEHLSTEIN AWARDS

These awards amount to $250 a year and are given to help promising students continue their education in the field of rubber chemistry on the basis of need and satisfactory work. The committee shall make no discriminations as to race, color, or creed.

### NATIONAL RUBBER MACHINERY SCHOLARSHIPS

An annual scholarship of $500 has been established by the National Rubber Machinery Company, with a matching amount going to the University General Fund. Recipients must be entering Freshmen planning to enter the field of Mechanical or Electrical Engineering. The University Scholarship Committee shall select those who appear to be best qualified, for approval by National Rubber Machinery.

### NATIONAL SECRETARIES ASSOCIATION SCHOLARSHIP

In 1951, Tire Town Chapter of the National Secretaries Association established an annual scholarship of $280 for an outstanding Junior woman in the Department of Secretarial Science to defray normal collegiate expenses in the Senior year. The student

is selected by the Department on the basis of criteria mutually acceptable to the Department and to The Akron Chapter, N. S. A. This scholarship is known as the Louise Gamble Memorial Scholarship.

### WILLIS NEUENSCHWANDER SCHOLARSHIP

A four-year scholarship of $1,600 will be awarded to the winner of a Summit County-wide driving contest which will consist of a written test and a driving test. This scholarship is awarded by the Akron Automobile Dealers Association and the New Car Dealers of Summit County, for the purpose of encouraging skillful, courteous, and safe driving among high school students of Summit County.

### OHIO STATE UNIVERSITY GRADUATE SCHOLARSHIP

In the Spring of 1935 a number of graduate scholarships were established by Ohio State University, one to be assigned to each of the Ohio colleges fully accredited by the North Central Association of Colleges and Secondary Schools. The scholarship entitles the student to the exemption of tuition and fees of all kinds except a matriculation fee. Selection is left to the individual colleges.

### M. O'NEIL COMPANY SCHOLARSHIPS

The M. O'Neil Company has established four scholarships in the amount of $280 a year each to be awarded to two students from the Junior class and two students from the Senior class who are preparing to enter the field of retail business. In succeeding years the scholarships will be awarded to two Juniors annually. The scholarships are renewable each semester upon satisfactory performance, scholarship, and the student's continued preparation for a career in retail business. Students selected shall have a minimum of a 2.5 quality point ratio for all previous college work. Achievement, citizenship, leadership, and promise of success in the business field will be used as a basis for making the awards.

### OPTIMIST CLUB OF AKRON SCHOLARSHIP

The scholarship of $200 a year is awarded to a full-time University student who was in the upper half of his graduating class. No restriction as to course of study, sex, race, religion or national origin.

### PANHELLENIC COUNCIL SCHOLARSHIP

The Panhellenic Council of The University of Akron has established a scholarship of $125 a year for a woman student, to be applied entirely on the payment of fees. This scholarship shall be awarded by the Scholarship Committee to a full-time student irrespective of race, religion, creed, field of study, or sorority membership, after completion of at least one semester's work (12 or more credits) at The University of Akron, and shall be on the basis of scholarship and need. A ratio of at least 3 point in the major and 2.5 in over-all scholarship is required.

### RAYMOND B. PEASE AWARD OF THE AKRON MANUSCRIPT CLUB

The Raymond B. Pease award was established in 1946 by the members of the Akron Manuscript Club. The sum of $25 is to be awarded annually to that Junior at The University of Akron who has been consistently outstanding in the field of creative writing during his three years at the University. In the selection of the recipient there shall be no consideration of race, sex, nationality, or creed. The recipient shall apply the award toward fees in his Senior year at the University.

### PIERIAN SCHOLARSHIP

This scholarship is awarded to a full-time woman student at the University, in the amount of $60 a semester for two consecutive semesters. She must have a 2.63 or better over-all average, and will be chosen on the basis of leadership, scholarship, activities, democratic ideals, and personality. Recommendations will be made by Pierian.

### PIXLEY SCHOLARSHIPS

In accordance with the will of Isabel McRoy Pixley, wife of Frank Pixley, class of 1887, a fund of $50,000 was established in 1931. Awards are made each semester to students of outstanding ability and promise in the fields of literature, music, and speech. To be eligible for one of these awards the student must be enrolled in an upper college or qualified to enter an upper college and must be a major in the department in which the scholarship is awarded, or a divisional major in the humanities division. The awarding of these scholarships is made by a University committee. To be eligible for a Pixley Scholarship, a student must have a quality point ratio of at least 2 in all work taken; in the field of the award the quality of scholarship is expected to be much higher.

### A. POLSKY COMPANY SCHOLARSHIPS

Four scholarships of $280 each have been established by the A. Polsky Company. These scholarships will be awarded to two students from the Junior class and two students from the Senior class who are preparing to enter the field of retail business. In succeeding years the scholarships will be awarded to two Juniors annually. The students selected shall have a minimum of a 2.5 quality point ratio for all previous college work. Achievement, citizenship, leadership, and promise of success in the business field will be the basis for making the awards, which are renewable each semester upon satisfactory performance, scholarship and the student's continued preparation for a career in retail business.

### GEORGE E. PRICE, JR. MEMORIAL AWARD

The George E. Price, Jr. Memorial Award was established in 1949 by the Purchasing Agents Association of Akron to serve as a living commemoration of George E. Price, Jr. and his contribution to the field of industrial purchasing. Mr. Price was one of the founders of the local Association and a president of the National Association of Purchasing Agents. An award of $100 is made to the outstanding Junior in the field of purchasing and a $50 award is made to the outstanding Senior in the field of purchasing. The purpose of this award is to promote a greater interest in the field of purchasing among the students in the College of Business Administration.

### MERLE DAVID RIEDINGER SCHOLARSHIP

A scholarship in the amount of $100 per semester is awarded to a student from the Akron area. Although unrestricted as to field of study, students in retail merchandising will be given preference, all other qualifications being equal. Candidates will be chosen on the basis of scholarship, character, and need.

### ROBINSON CLAY PRODUCT FUND

This fund was established in 1952 by The Robinson Clay Product Company. A portion of the income will be used annually for a cash award to the outstanding Senior student in the College of Engineering.

### FRANK ROSENBLUM ANNUAL SCHOLARSHIP

The Frank Rosenblum Annual Scholarship of $500 is open to all greater Akron Union members, their children or grandchildren, who are, or who desire to become, full-time students at The University of Akron. Candidates must be graduates of an accredited high school, or attending The University of Akron or another university. The selection of candidates is based on character and superior quality of citizenship, seriousness of purpose, sound scholarship and ability to do college work, and financial need. Award will be made by the University Scholarship Committee.

### SENIOR ALUMNI PRIZE

A fund has been established by the Alumni Association for the purpose of awarding an annual cash prize of $50 to that Senior student who has completed the regular undergraduate curriculum with the highest average grade for the work taken, having carried an average load of 12 credits per semester.

### SINGLETON & MACK, INC. SCHOLARSHIP IN CHEMISTRY

This scholarship is awarded to any male student majoring in Chemistry who is a Junior or higher, including post-graduate work. The award is based on need, character, and ability, regardless of race, color or creed. It is awarded by the University Scholarship Committee and a representative of the Chemistry Department.

### SOUTH AKRON BOARD OF TRADE SCHOLARSHIPS

The South Akron Board of Trade has established three scholarships to be awarded to an outstanding graduate from South. Garfield, and St. Mary's High Schools in the amount of $150 per year, payable at $75 a semester. The award for the second semester is contingent upon satisfactory scholarship for the first semester. The principal of each high school may submit the names of three scholarship candidates for the Freshman year at the University.

The candidate must be in the upper third of his graduating class and must become a full-time University student. Scholastic achievement, citizenship, promise, and leadership are the qualities used as the basis for the awards. Applications are made at the office of the high school principal in the last semester of the Senior year. Recommendations of the high school principals will be considered by the University Scholarship Committee on or about May 1 each year.

### TOUCHDOWN CLUB SCHOLARSHIPS

The Touchdown Club Scholarships are awards of $140 a semester for four years. The scholarships are renewable each semester contingent upon satisfactory performance and scholarship. Candidates must be in the upper half of their high school graduation class and must become full-time students at The University of Akron. Scholastic achievement, citizenship, athletic ability, need, and leadership will be used as a basis for making the awards.

### TUESDAY MUSICAL CLUB SCHOLARSHIP

An award of $50 a semester is made to a full-time student who is a resident of Summit County, contingent upon satisfactory scholarship, evidence of need, good character, and leadership. It is limited to persons who show promise in the field of applied music. Music majors will receive preference if equally well qualified.

### LYNN F. (PINDY) WAGNER SCHOLARSHIPS

These scholarships amount to $280 a year each and are awarded to High School Senior men and women who are candidates for admission to The University of Akron. They extend over two school years.

To qualify the individual must be a member of the Akron Junior Bowling Congress and must be a high school student in his final semester. For each later semester the award is contingent upon satisfactory performance in college. The applicant must be of good repute, and recommended by his high school. The applicant must be in the upper half of his class and accepted for admission to The University of Akron. He must enroll as a full-time student. Decision as to the winner is made jointly by a committee of the Akron Junior Bowling Congress and the Scholarship Committee of The University of Akron.

The award will be made regardless of race, creed, color, national origin, or course of study and will be made jointly by the above awards committee each Spring.

### WOMEN'S AUXILIARY OF THE AKRON DISTRICT SOCIETY OF PROFESSIONAL ENGINEERS SCHOLARSHIP

An award of $280 a year is made to a Sophomore in the College of Engineering who has acquired a minimum of 28 credits at The University of Akron. The student selected must be enrolled as a full-time student and will be selected on the basis of scholarship, leadership, and need. The second semester award is contingent upon satisfactory achievement in the first semester. The award will be made by the Scholarship Committee of the University upon recommendation of the Dean of the College of Engineering.

## LOAN FUNDS

The University will assist worthy students to finance their education through its loan funds. Application should be made through the Office of the Treasurer or the Director of Student Personnel well in advance of the beginning of each semester. Loans for emergency purposes will be considered during the academic year.

### AKRON COLLEGE CLUB LOAN FUND

The Akron College Club maintains a loan fund known as the Elizabeth A. Thompson Scholarship Fund. Loans are made to deserving women students of the University.

### AKRON COUNCIL OF PARENT-TEACHER ASSOCIATIONS LOAN FUND

This fund was established in 1925. Loans are made from this fund to Juniors and Seniors of the University.

### MAXWELL P. BOGGS MEMORIAL FUND

This fund was established in memory of Maxwell P. Boggs, Treasurer of The University of Akron (1932-1950), to aid faculty members who may need financial assistance in emergency situations. The President of the University administers the fund and receives contributions from those who wish to help in this endeavor.

### HOMER C. CAMPBELL FUND

A fund established under the will of the late Homer C. Campbell provides for assistance by loan or gift from its income to needy students dependent on their own resources. Preference is given to young men who have been newsboys in Akron.

### KATHERINE CLAYPOLE LOAN FUND

This fund was established by a number of women's organizations of the city and dedicated as a memorial to Mrs. Katherine Claypole, wife of Dr. E. W. Claypole, former Professor of Natural Science of Buchtel College. The principal of the fund is lent to students, "who in mid-semester, as often happens, find themselves without sufficient means to complete the year's work."

### CUYAHOGA PORTAGE CHAPTER D. A. R. LOAN FUND

The money in this fund was donated by the Cuyahoga Portage Chapter of the Daughters of the American Revolution for the purpose of aiding deserving men and women students of the University.

### EVENING SESSION LOAN FUND

By voluntary contributions since February, 1933, the evening students have accumulated this fund to aid Evening Division students. Loans are made for short periods to students who have attended this division of the University for at least one year.

### HARRIET HALE LOAN FUND

The money in this fund was given to the University by the trustee of the Harriet Hale estate to be used in the furtherance of education in music. Loans for the payment of fees are made to students specializing in music.

### HERMINE Z. HANSEN LOAN FUND

A trust fund, established under the will of the late Hermine Z. Hansen, provides for a share of the distribution of its income to be used for the benefit of needy and deserving students during their attendance at the University. At the discretion of the trustees of the fund, money is available through loans to needy students for purposes which will assist in completing their studies. Repayments are returned to the income of the trust fund.

### INDIAN TRAIL CHAPTER OF DAUGHTERS OF THE AMERICAN COLONISTS LOAN FUND

The money in this fund was donated by the Indian Trail Chapter of Daughters of the American Colonists for the purpose of making loans to students of the University.

### LICHTER FOUNDATION LOAN FUND

The aid rendered by this fund is in the form of loans in such amounts as the loan committee may decide. No interest is required, but the principal is to be repaid at face value. The recipient must be properly recommended and must be qualified as a student in good standing. It may be used for an entering Freshman, a transfer, or an advanced student.

### MABEL JANE ROGERS MEMORIAL FUND

The Mabel Jane Rogers Memorial Fund, amounting to $100, was given by the alumnae of Flora Stone Mather College, Western Reserve University, in memory of Miss Mabel Jane Rogers, who was instructor in Spanish at The University of Akron for eight years. It is used for short emergency loans to women students.

### HENRY STRONG EDUCATIONAL FOUNDATION

To assist students to complete their education, application may be made for an allotment of funds for a loan through the Henry Strong Educational Foundation. Undergraduate students beyond the Freshman year and graduate students under the age of twenty-five are eligible. Repayment is required over a period of four years after graduation. The fund is administered by the Trustees of the Foundation in Chicago. Full particulars may be obtained at the Office of the Treasurer of the University.

### THOMAS-LITCHFIELD LOAN FUND

This fund was established by two directors of the University, Mr. John W. Thomas and Mr. P. W. Litchfield, in 1932. Money for the payment of fees is loaned for short periods of time to upperclassmen who are residents of Akron.

### RICHARD J. WITNER LOAN FUND

A fund has been established by the parents and wife of Captain Richard James Witner, who was killed in action in North Africa on March 28, 1943. The principal of this fund is to be used for loans to worthy students to finance their education.

# Subjects of Instruction

## THE GENERAL STUDIES

1 :1-2. WRITTEN ENGLISH. *Each semester. 3 credits.*

1 :1 is prerequisite to 1 :2. 1 :6 must be taken concurrently with 1 :2.

1 :3-4. WRITTEN ENGLISH. *Each semester. 2 credits.*

1 :2 is prerequisite to 1 :3. 1 :3 is prerequisite to 1 :4. 1 :7 must be taken concurrently with 1 :3.

These courses are intended to enable the student to obtain proficiency in the reading and writing of English. The reading materials used will be, primarily, outstanding literary works of our Western tradition.

Through these courses the student will gain competence in reading and writing. He will improve his writing skill through short expository papers (writing at least one a week), including a documented paper in 1 :1; and, in the following courses, progress to writing longer and more complex critical and analytical pieces, including, in 1 :2, a longer documented paper. He will improve his reading skill through reading, analyzing, and discussing selected materials arranged in order of increasing difficulty and through critical analysis and appraisal of his own and other students' compositions.

1 :6-7. EFFECTIVE SPEAKING. *Each semester. 2 credits.*

1 :6 is prerequisite to 1 :7. 1 :6 must be taken concurrently with 1 :2. 1 :7 must be taken concurrently with 1 :3.

Through these courses the student will acquire speaking-listening proficiency; he will develop an awareness of and skill in the use of accurate language and learn to relate fundamentals of effective speaking to certain aspects of reading, writing, and listening. He will use understandable English in content, and demonstrate an appropriate degree of speaking effectiveness. These courses will be devoted to developing speaking-listening skills in courses closely co-ordinated with the writing courses offered in those semesters. Thereby the student will have a unified experience in increasing his skill in written and in spoken English.

1 :11. NUMBERS COMMUNICATION. *2 credits.*

Through this course in the language of quantitative relationships the student will develop his ability to receive and to express ideas in mathematical symbols, increase his appreciation of the methods of mathematical reasoning, and come to understand and think creatively about the quantitative aspects of the world in which he lives. One lecture and two participation-discussion periods each week.

1 :13-14. REASONING AND UNDERSTANDING IN SCIENCE. *Each semester. 3 credits.*

1 :13 is prerequisite to 1 :14. Primary objectives of this course are to enable the student to grasp the processes of accurate thinking and to understand the principles used in science as illustrated in the study of natural phenomena. The study of the use of the method will be emphasized, rather than of the end products obtained by its use. This procedure will involve the use of case histories chosen from the various fields of science. Three lectures and a voluntary discussion period a week.

1 :15-16. INSTITUTIONS IN THE UNITED STATES. *Each semester. 3 credits.*

1 :15 is prerequisite to 1 :16. Primary objective of this course is to enable the student to achieve an understanding of human relationships through a comparative descriptive, and analytical study of institutions of the United States. An exposition of basic institutional principles will be followed by a discussion of these principles in the light of both the student's reading and the student's direct contact with institutional reality. One lecture and two discussion periods each week.

1 :17-18. WESTERN CULTURAL TRADITIONS. *Each semester. 3 credits.*

Prerequisites: 1 :2 or permission. 1 :17 is prerequisite to 1 :18. Primary objectives of this course are to enable the student to understand human experience, both individual and group, of the past, so that he may develop an intelligent and constructive standard of personal behavior and may become a responsible member of society. To achieve these objectives, it is necessary for the student to grasp the essential features of the traditions of Western civilization as manifested in its outstanding accomplishments and creative endeavors in letters, music, and the visual arts. It is not intended that this course give a complete portrayal or minute development of any one of these fields, but rather that certain particularly important eras which have special significance for our time should be chosen. Two lectures and two participation-discussion periods each week.

1 :19. PERSONAL DEVELOPMENT. *2 credits.*

Primary objectives of this course are to enable the student to acquire the knowledge involved in maintaining and improving physical and emotional well-being and personal relationships, including those concerned with the family, the home, and his vocational future. To achieve these objectives, it is necessary that the student have an understanding of physiology and health laws, insight into human behavior, and acquaintance with mental processes and fundamentals of personality development. One lecture and one discussion period each week.

1 :21-22. PHYSICAL EDUCATION. *Each semester. 1/2 credit.*

Participation in individual and group sports, with each individual to acquire knowledge and skill in activities which can be of value and satisfaction to him throughout his life. Two periods each week.

1 :101. SENIOR COURSE. *2 credits.*

Prerequisite: Senior standing. An analytical examination of significant, current problems and issues, including their origin and development, and the consideration of possible solutions for them. Each student must satisfactorily complete this course before graduation and should take it in either one of his last two semesters preceding graduation.

# BUCHTEL COLLEGE OF LIBERAL ARTS

## ART

### GENERAL COLLEGE

2 :21. DESIGN. *Either semester. 2 credits.*

Basic principles of creative design and color theory. Discussion and studio.

2 :22. DESIGN. *Either semester. 2 credits.*

Prerequisite, 21. Advanced design problems, two- and three-dimensional; creative use of a variety of media and materials; individual expression. Discussion and studio.

2 :23-24. COSTUME - STYLES AND FASHION. *Each semester. 2 credits.*

Desirable that 22 precede this course. Design as applied to costume, contributing influences, the human figure, occasion and personality. Discussion and studio. No credit toward major.

2 :29-30. ART APPRECIATION. *Each semester. 2 credits.*

A foundation for critical evaluation of visual arts, through basic principles of design as applied to our environment, past and present, possibilities and limitations of materials in relation to design. Lecture and discussion.

2 :33-34. HOUSE PLANNING AND DECORATION. *Each semester. 2 credits.*

Desirable that 22 precede this course. Historic and contemporary styles in housing, interiors, furniture, textiles, etc. Discussion and studio. No credit toward major.

2 :37-38. DESIGN AND COMPOSITION IN COMMERCIAL ART. *Each semester. 2 credits.*

Desirable that 22 or 46 precede this course. Principles of design as applied to commercial art, color theory, lettering, layout, reproduction processes. Discussion and studio. No credit toward major.

2 :43. INDUSTRIAL DESIGN. *2 credits.*

Prerequisites, 22 and Engineering Drawing 25. Materials and process requirements necessary to design for mass production. Discussion and studio.

2 :45-46. DRAWING. *Each semester. 2 credits.*

Creative pictorial composition and individual expression, use of variety of media and techniques. Studio.

2 :50-51. DRAWING AND PAINTING. *Each semester. 2 credits.*

Desirable that 46 precede this course. An introduction to painting, understanding and appreciation through application of fundamentals of color and composition. First semester, oil; second semester, water color. Studio. No credit toward major.

2 :59. CERAMICS. *2 credits.*

Prerequisite, 22. Design through the use of forming processes (hand-built and wheel), decorating, glazing, firing processes. Studio.

2 :60. CERAMICS. *2 credits.*

Prerequisite, 59. Advanced work in ceramic design, sculpture, molds, and glazes. Studio.

2 :70. CRAFTS. *2 credits.*

Prerequisite, 22. Three-dimensional design using diversified materials and processes. Studio.

2 :75. HISTORY OF ART, ANCIENT, CLASSICAL AND MEDIEVAL. *2 credits.*

Architecture, painting, sculpture, and minor arts, from prehistoric times to close of Middle Ages. Lecture. No credit toward major.

2 :76. HISTORY OF ART, RENAISSANCE AND BAROQUE. *2 credits.*

Arts of Western Europe (with exception of France) from close of Middle Ages to 1850. Lecture. No credit toward major.

2 :77. HISTORY OF ART, MODERN. *2 credits.*

Arts of France from Gothic to present, art in United States, contemporary movements. Lecture. No credit toward major.

UPPER COLLEGE

2 :102. CRAFTS. *2 credits.*

Prerequisite, 70. Advanced problems in three dimensions, creative use of materials and structural processes. Studio.

2 :105. GRAPHIC ARTS. *2 credits.*

Prerequisite, 46. Design related to screen printing (film and touche), wood cut, wood engraving, acid and dry point etching. Studio.

2 :106-107. WEAVING. *Each semester. 2 credits.*

Prerequisite, 22. Design related to weaving processes, warping and threading of looms, plain and pattern weaving, use of different looms and materials. Studio.

2 :108-109. METAL CRAFT. *Each semester. 2 credits.*

Prerequisite, 22. Creative design in terms of metals and processes, hammering, piercing, etching, stone setting, enameling. Studio.

2 :115-116. PAINTING. *Each semester. 2 credits.*

Prerequisite, 46. Creative and individual expression through painting media, color and composition, experimentation in techniques. First semester, oil; second semester, water color. Studio.

2 :131-132. COMMERCIAL ART. *Each semester. 2 credits.*

Prerequisites, 22 and 45. Professional approach to creative advertising art, lettering, layout, "finished art" techniques, reproduction processes. Studio.

2 :151-152. COSTUME DESIGN. *Each semester. 3 credits.*

Prerequisites, 22 and 45. Professional creative dress design, historic costume as source material. Discussion and studio.

2 :171-172. INTERIOR DESIGN. *Each semester. 3 credits.*

Prerequisites, 22, 45, and Engineering Drawing 25. Professional approach to interior design, problems in house planning and furnishing, historic and contemporary furniture and interiors. Lectures, discussions, and studio.

2 :175-176. FIGURE DRAWING. *Each semester. 2 credits.*

Prerequisite, 46. The human figure in pictorial design, study from life of anatomy, perspective and the figure in action. Studio.

2 :179. BOOK ILLUSTRATION. *2 credits.*

Prerequisite or corequisite, 175. Professional approach to book illustration, different age levels, the book as an art form. Studio.

2 :200. HISTORY OF ART, ANCIENT, CLASSICAL AND MEDIEVAL. *3 credits.*

Architecture, sculpture, painting and the minor arts in environments of Prehistoric, Egyptian, Mesopotamian, Aegean, Greek, Roman, Early Christian, Byzantine, Romanesque, and Gothic civilizations. Lecture.

2 :201. HISTORY OF ART, RENAISSANCE AND BAROQUE. *3 credits.*

The arts in Italy, Spain, Flanders, Holland, Germany, and England within their respective backgrounds. Lecture.

2 :202. HISTORY OF ART, MODERN. *3 credits.*

The arts in France from Gothic period, art in United States, influences leading to contemporary movements. Lecture.

2 :203-204. HISTORY OF ART SEMINAR. *Each semester. 3 credits.*

Prerequisite, permission of Head of Department. A restricted field of study to be selected.

2 :225-226. SPECIAL PROBLEMS IN ART. *Each semester. 3 credits.*

Prerequisite, permission of Head of Department. Problems of an advanced nature in the field of special interest. Studio.

## BIOLOGY

### GENERAL COLLEGE

3 :33. MICROBIOLOGY. *3 credits.*

Bacteria and other micro-organisms in their relation to man. Two lectures and one 2-hour laboratory period a week.

3 :35. NATURE STUDY. *3 credits.*

Common plants and animals of this region, their life, habits and inter-relations. Adapted to use of teachers of nature study. Some field trips.

3 :41-42. GENERAL GEOLOGY. *Each semester. 4 credits.*

The earth, its materials, surface features, and changes during the ages. Three lectures and one 3-hour laboratory period a week.

3 :47-48. ANATOMY AND PHYSIOLOGY. *Each semester. 3 credits.*

Anatomy of human body, chiefly gross anatomy of all organ systems, and their functions or processes. Two lectures and one 2-hour laboratory and demonstration period a week. Not open to biology and pre-medical majors.

3 :51-52. GENERAL BOTANY. *Each semester. 4 credits.*

Plants, their anatomy, physiology, and a survey of plant groups and evolution in plant kingdom. Two lectures and three 2-hour laboratory periods a week.

3 :61-62. GENERAL ZOOLOGY. *Each semester. 4 credits.*

Animals, their general characteristics and functions; sequential study of animal phyla capped by an explanation of evolution and heredity. Two lectures and three 2-hour laboratory periods a week.

3 :77-78. INTRODUCTORY BACTERIOLOGY. *Each semester. 4 or 2 (lecture only) credits.*

Micro-organisms in nature, industry and disease. Morphology, physiology, cultural and serological techniques. Two lecture hours and two 3-hour laboratories a week, on two evenings. Students getting credit for 77-78 cannot take 107-108 for credit.

3 :82. CONSERVATION OF NATURAL RESOURCES. *3 credits.*

Principles and practice of conservation of mineral, plant, and animal resources.

3 :91. INTRODUCTORY HUMAN PHYSIOLOGY. *4 credits.*

Physiology or functioning of human body. Processes operating in organ systems. Not open to pre-medical majors. Two lectures and two 2-hour laboratory and demonstration periods a week.

## UPPER COLLEGE

3 :107-108. BACTERIOLOGY. *Each semester. 4 credits.*

Prerequisite, 52, 62, or Chemistry 21-22. Micro-organisms in nature, industry and disease. Morphology, physiology, cultural and serological techniques. Two lecture hours and three 2-hour laboratory periods a week.

3 :113-114. FIELD BOTANY. *Each semester. 3 credits.*

Classification and recognition of plants, principally seed plants of the region. Two lectures and three hours of laboratory a week. 52 is desirable as background.

3 :127. HISTOLOGICAL TECHNIQUE. *2 credits.*

Prerequisite, 62. Methods of preparation of tissues and other specimen materials for microscopical study. Six hours of laboratory work a week.

3 :128. HISTOLOGY. *3 credits.*

Prerequisite, 62. Study of animal tissues. Two lectures and one 3-hour laboratory period a week.

3 :135-136. HUMAN PHYSIOLOGY. *Each semester. 3 credits.*

Prerequisite, 62 or equivalent, and some beginning Chemistry. Physiology or functioning of human body, processes going on in all organ systems, including metabolism and blood. Not open to pre-medical majors. Two lectures and one 3-hour laboratory period a week.

3 :141. INVERTEBRATE ZOOLOGY. *4 credits.*

Prerequisite, 62. Invertebrate groups, their classification, anatomy, and life history of representative types. Two lectures and two 3-hour laboratory periods a week.

3 :144. GENERAL ENTOMOLOGY. *4 credits.*

Prerequisite, 62. Insects, their nature, structure, life history, and economic importance; insect orders, representative families and types. An insect collection is made.

3 :146. GENERAL GENETICS. *3 credits.*

Principles of heredity illustrated by plant and animal organisms. 62 or 52 or equivalent desirable as background.

3 :148. HUMAN GENETICS. *2 credits.*

Prerequisite, 62. Principles of heredity as illustrated by the human species, eugenics problems.

3 :151. ORGANIC EVOLUTION. *3 credits.*

Prerequisite, 62. History of the evolution concept, a study of the fields of evidence for evolution, trends of animal evolution through the ages, theories of methods of evolution.

3 :155. VERTEBRATE ANATOMY. *4 credits.*

Prerequisite, 62. Comparative study of all organ systems from fishes to mammals. Two lectures and two 3-hour laboratory periods a week.

3 :215-216. PLANT PHYSIOLOGY. *Each semester. 4 credits.*

Prerequisite, 52 and some knowledge of Chemistry. Water, soil, and mineral requirements of plants, and their metabolism, growth, response to stimuli. Two lectures and six hours of laboratory a week.

3 :217. PLANT ANATOMY. *4 credits.*

Prerequisite, 52. Structure of cells, tissues and organs of land plants, relation of structure to utilization of plants. Two lectures and six hours of laboratory a week.

3 :235. GENERAL PHYSIOLOGY. *3 credits.*

Prerequisite, Chemistry 44. Fundamental life processes as exhibited in organisms, especially in organ systems of higher vertebrates. Two lectures and one 3-hour laboratory period a week.

3 :256. EMBRYOLOGY OF VERTEBRATES. *4 credits.*

Prerequisite, 155. General embryonic development of vertebrates and relatives, detailed embryology of frog and chick. Two class periods and two 3-hour laboratory periods a week.

3 :258. VERTEBRATE ZOOLOGY. *3 credits.*

Prerequisite, 62. Classification of vertebrates, primitive fishes through mammals, classes, orders, families and representative types. Two lecture hours and one 3-hour laboratory period a week.

3 :265. BIOLOGY SEMINAR. *2 credits.*

Discussions and written reports on biological books and papers from current literature.

3 :267-268. BIOLOGICAL PROBLEMS. *Each semester. 1 to 3 credits.*

Individual problem work of laboratory type. Open to Seniors and, in exceptional cases to Juniors. Two continuous semesters are advisable.

3 :367-368. RESEARCH. *Each semester. 3 or more credits.*

Individual problem work of a more advanced nature.

## CHEMISTRY

### GENERAL COLLEGE

5 :21-22. GENERAL INORGANIC CHEMISTRY. *Each semester. 4 credits.*

Basic facts and principles of chemistry; occurrence, preparation, and properties of the elements, production and properties of more important compounds with emphasis on inorganic chemistry. Laboratory experiments illustrate principles studied.

5 :23-24. INORGANIC CHEMISTRY. *Each semester. 3 credits.*

Designed primarily for students in Home Economics and for laboratory technicians. Fundamental laws and theories of chemistry; the more important elements and their compounds. Laboratory.

5 :25. CHEMISTRY FOR NURSES. *3 credits.*

Planned especially for students taking nurses' training course in hospitals. Fundamentals of inorganic, organic, and physiological chemistry. Laboratory.

5 :27-28. GENERAL INORGANIC CHEMISTRY FOR ENGINEERS. *Each semester. 4 credits.*

See description for 21-22.

5 :43. QUALITATIVE ANALYSIS. *5 credits.*

Prerequisite, 22. Mathematical aspects of chemical equilibrium; semimicro method in the laboratory for separation and identification of ions.

5 :44. ELEMENTARY ORGANIC CHEMISTRY. *4 credits.*

Prerequisite, 22. Introduction to aliphatic and aromatic compounds. Laboratory.

5 :47-48. ANALYTICAL CHEMISTRY FOR LABORATORY TECHNICIANS. *Each semester. 4 credits.*

Prerequisite, 22 or 24. Intended primarily for students preparing to become laboratory or hospital technicians. Elementary theory and calculations in qualitative and quantitative analysis, laboratory exercises, methods and instruments used in hospital laboratories.

5 :55. ORGANIC CHEMISTRY. *3 credits.*

Prerequisite, 24. Designed especially for students in Home Economics. Laboratory.

5 :56. PHYSIOLOGICAL CHEMISTRY. *3 credits.*

Prerequisite, 55. Continuation of 55. Chemistry of digestion, absorption, and metabolism. Laboratory.

## UPPER COLLEGE

5 :105-106. QUANTITATIVE ANALYSIS. *Each semester. 4 credits.*

Prerequisite, 43. Theory, technique and calculations, acidimetry and alkalimetry, oxidation and reduction, volumetric precipitation; gravimetric methods, systematic analysis, analysis of common ores, minerals and alloys.

5 :107. INTERMEDIATE ORGANIC CHEMISTRY. *4 credits.*

Prerequisite, 44. Aliphatic and alicyclic compounds. Laboratory.

5 :108. ADVANCED ORGANIC CHEMISTRY. *4 credits.*

Prerequisite, 107. Aromatics, heterocyclics, special topics. Laboratory.

5 :118. CHEMICAL CALCULATIONS. *2 credits.*

Prerequisites, 43, 44, 105, Mathematics 46. Application of calculus to problems in physical chemistry; mathematical technique of correlating fundamentals of physics to chemistry.

5 :151-152. PHYSICAL CHEMISTRY. *Each semester. 5 credits.*

Prerequisites, 106, 107, 118, Physics 52, Mathematics 46. Gases, thermodynamics, thermochemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria, atomic and molecular structure. Laboratory experiments to illustrate principles.

5 :201. BIOCHEMISTRY. *3 credits.*

Prerequisite, 108. Constituents of cells and tissues, their organic and fundamental physical chemical properties. Proteins, enzymes, vitamins, carbohydrates, fats, energy relationships, intermediary metabolism.

5 :250. INDUSTRIAL CHEMISTRY. *2 credits.*

Prerequisites, 106, 107. Chemical engineering unit operations considered in non-mathematical language, basic principles of instrumentation, manufacture of various inorganic and organic chemicals.

## GRADUATE COURSES

5 :307-308. QUALITATIVE ORGANIC ANALYSIS. *Each semester. 2 credits.*

Prerequisites, 106, 108. Characterization and identification of organic substances, separation and identification of components of organic mixtures. Laboratory.

5 :309. MICRO-QUANTITATIVE ORGANIC ANALYSIS. *2 credits.*

Prerequisites, 106, 108, and permission. Micro-quantitative analytical methods for determination of carbon, hydrogen, nitrogen, sulfur, and halogens in organic substances. Laboratory.

5 :310. SPECIAL TOPICS IN ORGANIC CHEMISTRY. *2 credits.*

Prerequisite, 108. Topics in advanced organic chemistry such as terpenes, dyestuffs, medicinals, alkaloids, heterocyclic compounds, carbohydrates, proteins, etc.

5 :311-312. ADVANCED ORGANIC CHEMISTRY. *Each semester. 2 credits.*

Prerequisite, 108 and permission. Modern structural theory, resonance, reaction mechanisms, stereo-chemistry, rearrangements, free radicals, formation of carbon to carbon bonds.

5 :319-320. ADVANCED INORGANIC CHEMISTRY. *Each semester. 2 credits.*

Prerequisite, 152. Concepts of atomic structure integrated in systematic classification of elements, periodic table, study of elements and compounds according to periodic grouping.

5 :321-322. ADVANCED INORGANIC PREPARATIONS. *Each semester. 1 credit.*

Prerequisites, 106, 152. Methods for preparing and purifying inorganic compounds, crystallization, distillation, sublimation, precipitation, and liquefaction. Laboratory.

5 :325. COLLOID CHEMISTRY. *2 credits.*

Prerequisites, 106, 107. Properties of colloids, kinetic, interfacial and electrical, stability, Lyotropic series applied to emulsoids and suspensoids, Gels, emulsions and foams, size-shape relationships.

5 :335-336. ADVANCED PHYSICAL CHEMISTRY. *Each semester. 2 credits.*

Prerequisite, 152. Thermodynamics, fugacity solutions, partial molar quantities, atomic-molecular structure, quantum-statistical principles.

5 :337-338. ADVANCED PHYSICAL CHEMISTRY LABORATORY. *Each semester. 1 credit.*

Prerequisite, 152. 335-336 must be taken concurrently. Laboratory experiments to illustrate topics listed under 335-336.

5 :339. ADVANCED CHEMICAL THERMODYNAMICS. *2 credits.*

Prerequisite, 336. Thermodynamics of solutions, calculation of thermodynamic functions from statistical data, activities of electrolytes and Debye-Huckel Theory, reaction kinetics, solution phase.

## COURSES IN RUBBER AND POLYMERS

5 :301-302. CHEMISTRY OF POLYMERS. *Each semester. 2 credits.*

Prerequisite, 108. Definitions and classification of polymeric substances into fibers, plastics and rubbers, sources, structures and properties of naturally occurring polymers, monomer, methods of preparation, structures and properties of organic and inorganic polymers, mechanism of condensation and addition polymerization reactions.

5 :303-304. CHEMISTRY OF POLYMERS LABORATORY. *Each semester. 2 credits.*

Prerequisite, 108. 301-302 must be taken concurrently. Preparation of different polymers to illustrate methods of polymerization and properties of polymers discussed in 301-302.

5 :326. CHEMISTRY OF LATEX LABORATORY. *2 credits.*

Prerequisite, permission. Chemical and physical properties of natural and synthetic latex, concentration, compounding, testing of cast and dipped films, preparation of foam rubber.

5 :327-328. CHEMISTRY OF RUBBER TECHNOLOGY. *Each semester. 2 credits.*

Prerequisites, 106, 107 or permission. First semester: molecular structure and chemical reactions of natural rubber, role of compounding ingredients and mechanism of vulcanization. Second semester: study of industrial methods of production of synthetic elastomers, and their properties.

5 :329-330. CHEMISTRY OF RUBBER LABORATORY. *Each semester. 2 credits.*

Prerequisites, 106, 107. Chemical analysis of rubber and rubber compounds, identification and chemical reactions of natural and synthetic rubbers, compounding, vulcanization, and testing of elastomers.

5 :331-332. PHYSICAL CHEMISTRY OF HIGH POLYMERS. *Each semester. 2 credits.*

Prerequisite, 152. Mechanism and kinetics of condensation polymerization, including molecular weight distribution and network formation. Kinetics of addition polymerization and copolymerization, including molecular weight distribution, three-dimensional polymerization and emulsion polymerization. Thermodynamics of dilute and concentrated solutions of high polymers. Solution methods for determination of molecular weight including osmotic pressure, light scattering, sedimentation and viscosity. Dimensions of polymer molecules in solution.

5 :333-334. EXPERIMENTAL PHYSICAL CHEMISTRY OF POLYMERS. *Each semester. 2 credits.*

Prerequisite, 152. 331-332 must be taken concurrently. Laboratory experiments to illustrate method and principles discussed in 331-332.

5 :343-344. MECHANICAL BEHAVIOR OF POLYMERS. *Each semester. 2 credits.*

Prerequisites, 332 or permission. Physical properties and mechanical behavior of elastomers, plastics and fibers, present-day theories, physical behavior of polymers related to their molecular constitution.

5 :365-366. RESEARCH. *Each semester. 1 to 3 credits.*

For properly qualified candidates for Master's degree. Supervised original research in fields of inorganic, analytical, physical, organic and polymer chemistry, depending on availability of staff and facilities.

5 :401. DOCTORAL RESEARCH. *Each semester. 1 to 16 credits.*

Open to properly qualified students accepted as candidates for the degree of Doctor of Philosophy in Chemistry. At the present time, supervised original research may be undertaken in organic, inorganic or physical aspects of Polymer Chemistry, depending on availability of staff and facilities.

## ECONOMICS

### GENERAL COLLEGE

6 :42. CURRENT ECONOMIC PROBLEMS. *3 credits.*

Inflation, unemployment, fiscal policy, industrial conflict, international trade. For students who do not plan to pursue further studies in Economics.

6 :44. DEVELOPMENT OF ECONOMIC INSTITUTIONS. *3 credits.*

Medieval and modern economic history; origins and growth of institutions of modern economic life.

6 :45-46. PRINCIPLES OF ECONOMICS. *Each semester. 3 credits.*

Economic activity in modern industrial society, preparation for responsible participation in process of shaping public policy. No credit to students who have received credit in Economics 41.

6 :82. CONSUMER ECONOMICS. *3 credits.*

Spending habits of American consumers, influences affecting their spending decisions, personal finance, budget planning, saving programs, installment buying, insurance, investments, housing finance.

UPPER COLLEGE

6 :106. LABOR PROBIEMS. *3 credits.*

Labor economics, principles, and public policy. Development of structure, objectives and policies of unions in the United States. Labor-management relation, negotiations of trade agreements, administration of grievance procedures, economic effects of union activities, problems of public control.

6 :148. MONEY AND BANKING. *3 credits.*

Institutions of money, banking, and credit, monetary expansion and contraction, public policies affecting this process, development of our money and banking system.

6 :204. MONETARY AND BANKING POLICY. *3 credits.*

Prerequisite, 148. Control over currency and credit, policies of control by central banks and governments, U.S. Treasury and Federal Reserve System.

6 :208. PUBLIC FINANCE. *3 credits.*

Tax systems and other sources of revenue of federal, state, and local governments; changing patterns of public expenditures; fiscal policy and debt management; economic effects of public policy .

6 :210. COMPARATIVE ECONOMIC SYSTEMS. *3 credits.*

Systems of economic organization, ranging from the theoretical extreme of unregulated private enterprise to that of Marxian communism. Comparison of actual system of mixed public and private enterprise in contemporary United States with the state socialism of the Soviet Union.

6 :239. LABOR AND THE GOVERNMENT. *3 credits.*

Prerequisite, 106. Development of public policy for control of industrial relations, from judicial control of 19th century to statutory and administrative controls of World War II and postwar periods. Economic effects of public control.

6 :241. ECONOMIC ANALYSIS. *3 credits.*

Processes of economic decision-making among individuals and business firms, by which resources are allocated and income is distributed.

6 :260. THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING. *3 credits.*

Prerequisite, 106 and General Business 264. Principles and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.

6 :265. SOCIAL SECURITY. *3 credits.*

Development of social security and social insurance programs, workmen's compensation, retirement and survivor's insurance, unemployment compensation, sickness and disability insurance, economic effect of these programs.

6 :268. INTERNATIONAL ECONOMIC RELATIONS. *3 credits.*

Theory of international trade and foreign exchange, policies of free and controled trade, international monetary problems, world economic planning.

6 :29. DEVELOPMENT OF ECONOMIC THOUGHT. *3 credits.*

Evolution of theory and method, relation of ideas of economists to contemporary conditions.

6 :294. NATIONAL INCOME AND ITS VARIATIONS. *3 credits.*

Changes in the national income, production, employment, price levels, long-term economic growth, short-term fluctuations of economic activity.

6 :295-296. THESIS. *Each semester. 2 credits.*

Research and writing of thesis. Senior or graduate standing required. Undergraduate students can receive only 2 credits.

6 :298. SEMINAR IN ECONOMICS. *3 credits.*

Opportunity for advanced students to study special fields of Economics.

6 :299. METHODS OF ECONOMIC RESEARCH. *3 credits.*

Prerequisites, 45-46, General Business 148 or Mathematics 57. Relationship between facts, measurement and explanation, index numbers and time-series analysis, national income accounts on current and stable dollar basis, trend and various oscillatory phenomena (seasonal, cyclical, etc.), statistical analysis of demand, supply and costs.

## ENGLISH

### GENERAL COLLEGE

7 :37-38. REPRESENTATIVE AMERICAN WRITERS. *Each semester. 3 credits.*

First Semester: to 1865; second semester: 1865 to the present. (37 may not be taken by students who have taken 47 or 219; 38 may not be taken by students who have taken 48 or 220.)

7 :41. SHAKESPEARE. *3 credits.*

Reading of 15 or more plays, with explanatory lectures and discussions.

7 :42. THE MAKING OF MODERN ENGLISH. *3 credits.*

Modern English usage, historical backgrounds, principles of descriptive grammar.

7 :44. APPRECIATION OF DRAMA. *3 credits.*

Courses 44, 45, 46 constitute an approach to critical reading.

7 :45. APPRECIATION OF FICTION. *3 credits.*

7 :46. APPRECIATION OF POETRY. *3 credits.*

7 :65-66. ENGLISH LITERATURE. *Each semester. 3 credits.*

English Literature from Anglo-Saxon to modern times.

7 :71. EUROPEAN BACKGROUNDS OF ENGLISH LITERATURE. *3 credits.*

Representative French, German, Italian, and Spanish works, medieval to nineteenth century, in translation.

7 :72. MODERN EUROPEAN LITERATURE. *3 credits.*

Representative European writers from about 1850 to present.

7 :73-74. THE ENGLISH BIBLE AS LITERATURE. *Each semester. 3 credits.*

Extensive readings in the Bible with reference to literary values. First semester: Old Testament, exclusive of Wisdom Books; second semester, Wisdom Books and New Testament.

### UPPER COLLEGE

7 :121-122. ENGLISH FICTION. *Each semester. 3 credits.*

First semester: Defoe to Scott; second semester, the Brontes to Hardy.

7 :150. ADVANCED COMPOSITION. *3 credits.*

Training in various forms of writing; frequent consultation with instructor.

7 :155. CONTINENTAL DRAMA. *3 credits.*

Masterpieces of the drama from the Greeks to the present. May not be taken by students who have had 103 or 104.

7 :162. HISTORY OF THE ENGLISH LANGUAGE. *3 credits.*

Development of English from Anglo-Saxon period to present.

7 :163-164. ENGLISH DRAMA. *Each semester. 3 credits.*
First semester: from the Middle Ages to 1642; second semester: from the Restoration to Shaw.

7 :201. CHAUCER. *3 credits.*
"The Canterbury Tales" as one of the masterpieces of English poetry and as a reflection of medieval life.

7 :202. SIXTEENTH-CENTURY LITERATURE. *3 credits.*
Non-dramatic literature of Tudor period.

7 :205. ANGLO-SAXON. *3 credits.*
Anglo-Saxon language and literature, linguistic studies of Old English as a predecessor of Modern English, readings in "Beowulf" and in Anglo-Saxon prose.

7 :207. MIDDLE ENGLISH. *3 credits.*
Language and literature of the 11th to the 15th centuries, exclusive of Chaucer.

7 :209. SHAKESPEARE. *3 credits.*
Concentrated study of a few plays.

7 :212. MILTON. *2 credits.*
Concentrated study of selected prose and major poems.

7 :213. SEVENTEENTH-CENTURY LITERATURE. *3 credits.*
Non-dramatic literature from Bacon to Dryden.

7 :214. EIGHTEENTH-CENTURY LITERATURE. *3 credits.*
Work of Pope, Johnson, and other writers of the period.

7 :217. NINETEENTH-CENTURY ENGLISH LITERATURE. *3 credits.*
Romantic and Victorian literature, exclusive of drama and fiction. May not be taken by students who have taken 215 or 216.

7 :221. AMERICAN LITERATURE I. *3 credits.*
Colonial to early Nineteenth Century.

7 :222. AMERICAN LITERATURE II. *3 credits.*
Hawthorne to Henry James.

7 :223. AMERICAN LITERATURE III. *3 credits.*
Twentieth Century. May not be taken by students who have taken 108.

7 :240. TWENTIETH-CENTURY ENGLISH LITERATURE. *3 credits.*
May not be taken by students who have taken 108.

7 :297-298. SEMINAR. *Each semester. 1 or 2 credits.*
Special studies, methods of literary research.

7 :301. RESEARCH. *3 credits.*
Writing of thesis for Master of Arts degree.

## JOURNALISM

(Written English 1 :2 is a prerequisite for all Journalism courses.)

### GENERAL COLLEGE

7 :31. NEWS WRITING. *2 credits.*
Writing of news stories; applying theory through discussions, illustrative material; actual writing for publication.

7 :32. NEWS WRITING. *2 credits.*
Continuation of 31.

7 :59. FEATURE WRITING. *2 credits.*
Short newspaper and magazine articles; preparation of articles for publication; human interest situations; extensive writing with class discussions.

7 :82. CONTEMPORARY NEWSPAPERS. *2 credits.*
Leading newspapers and newspapermen.

### UPPER COLLEGE

7 :133. EDITING. *2 credits.*

Prerequisite, 32 or equivalent. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.

7 :134. EDITING. *2 credits.*

Prerequisite, 133. Continuation of 133.

7 :157. EDITORIAL WRITING. *2 credits.*

Editorials as a special type of essay; logical reasoning, column writing, preparation of interpretative articles.

## HISTORY

### GENERAL COLLEGE

12 :41. THE UNITED STATES TO 1865. *3 credits.*

American history from period of Exploration and Discovery through the Civil War.

12 :42. THE UNITED STATES SINCE 1865. *3 credits.*

Reconstruction period to present.

12 :43. ORIENTAL AND GREEK CIVILIZATIONS. *3 credits.*

Development of Oriental and Greek civilizations; Greek political and historical thought, art, and ideals.

12 :44. ROMAN CIVILIZATION. *3 credits.*

Roman experience, historical, political, and cultural, from rise of Rome to early Christian times.

12 :45. MODERN EUROPE TO 1815. *3 credits.*

European history from Renaissance to Waterloo.

12 :46. MODERN EUROPE SINCE 1815. *3 credits.*

Waterloo to present.

12 :49. MEDIEVAL EUROPE. *3 credits.*

Middle Ages from Barbarian invasions to Renaissance; Christianity, Islam, feudalism, rise of nations, medieval heritage.

### UPPER COLLEGE

12 :118. RENAISSANCE AND REFORMATION. *3 credits.*

European history from 1400 to 1648; reawakening of intellectual interest, nation-states, religious struggles.

12 :151. ENGLAND TO 1689. *3 credits.*

Development of parliamentary government; constitution and common law.

12 :152. ENGLAND AND THE EMPIRE. *3 credits.*

Imperial expansion, policies; growth of Dominions; relations with India; Commonwealth since 1689.

12 :161. THE WESTERN HEMISPHERE. *3 credits.*

Latin America, Canada, European possessions in New World from discovery to present, correlating their history with that of United States to show element of unity in American history.

12 :219. ENLIGHTENMENT AND REVOLUTION, 1648-1815. *3 credits.*

Europe from Treaty of Westphalia to Treaty of Vienna; absolutism, enlightenment, French Revolution and Napoleon.

12 :222. FROM COLONY TO NATION, 1607-1789. *3 credits.*
The Colonial Period, the Revolution, the Confederation, adoption of the Constitution.

12 :223. THE CIVIL WAR. *3 credits.*
Slavery controversy, Civil War, Reconstruction.

12 :224. THE UNITED STATES AS A WORLD POWER. *3 credits.*
Rise of United States in 20th century to a place among Great Powers.

12 :225. THE OLD NORTHWEST. *3 credits.*
Prerequisite, 41. French and British occupation of Ohio Valley and Great Lakes region; Northwest Territory and the states made from it; Western Reserve and Ohio to 1860.

12 :242. HISTORIOGRAPHY. *3 credits.*
Prerequisite, 12 credits in history. Historical writing in Europe and America; experience in research.

12 :245. NINETEENTH CENTURY EUROPE, 1815-1914. *3 credits.*
Europe from Congress of Vienna to World War I; revolutions of 1848; unification of Germany, Italy; background and causes of World War I.

12 :246. THE AGE OF CONFLICT. *3 credits.*
The two World Wars, rise of Fascism, Nazism, and Communism; postwar adjustments.

12 :251. MODERN RUSSIA. *3 credits.*
Factors shaping development of present-day Russia.

12 :261. CHINA AND THE FAR EAST. *3 credits.*
Japanese imperialism; China's relation with Western World.

12 :301. RESEARCH. *3 credits.*
Writing of thesis for Master of Arts degree.

## HOME ECONOMICS

### GENERAL COLLEGE

13 :21. TEXTILES. *3 credits.*
National and man-made fibers, their color, design, finishes and wearing quality, selection, use and care.

13 :23. CLOTHING CONSTRUCTION. *3 credits.*
Fundamental principles in use of patterns. Construction and fitting of garments. Line, design, color in relation to choice of material and pattern. Two or three garments will be made.

13 :41. FOOD FOR THE FAMILY. *3 credits.*
For non-majors. Application of nutrition to meal planning; problems in selection and buying of food on a budget; methods of food preparation; table etiquette, meal service, entertaining. One hour lecture, four hours laboratory.

13 :42. FOOD FOR THE FAMILY. *3 credits.*
Continuation of 41. One hour lecture, four hours laboratory.

13 :43. FOODS AND NUTRITION. *3 credits.*

For student nurses. Principles of nutrition and cookery; selection and care of food; dietary requirements on various age levels, analysis of student's own diet, racial differences in dietary habits; cookery for the invalid, tray service. Two hours lecture, two hours laboratory.

13 :45. GENERAL FOODS. *3 credits.*

Composition of foods and principles involved in selection, purchase, and preparation. One hour lecture, four hours laboratory.

13 :46. GENERAL FOODS. *3 credits.*

Continuation of 45. Meats, other protein foods, pastries. One hour lecture, four hours laboratory.

13 :53. HOME ECONOMICS ORIENTATION. *1 credit.*

History and development of home economics; different fields of home economics.

13 :58. SELECTION OF HOUSE FURNISHINGS. *3 credits.*

Principles which contribute to a satisfactory selection and arrangement of home furnishings; selection of floor coverings, wall and window treatments, lighting, furniture, household textiles, china, glassware, silver, and accessories for the home in relation to styles of decoration, color, design, and cost.

13 :62. HOME MANAGEMENT. *3 credits.*

Operation and function of the home; human and material resources in the promotion of healthy family living; time, energy, and money management; purchase and use of household supplies and equipment.

13 :65. CHILD DEVELOPMENT. *3 credits.*

Physical, social, mental, and emotional development of the child in his first five years. Two hours lecture, two hours laboratory.

## UPPER COLLEGE

13 :105. TAILORING. *3 credits.*

Prerequisite, 23. Develops skill through construction of a wool suit, coat or ensemble with lining. One hour lecture, four hours laboratory.

13 :106. ADVANCED CLOTHING. *3 credits.*

Prerequisite 23. Principles of clothing design in wardrobe planning, selection of ready-to-wear garments and accessories. Advanced construction methods. Basic pattern used to develop skill in fitting garments.

13 :107. ADVANCED TEXTILES. *3 credits.*

Prerequisite, 21. Economic, social, and health aspects of buying and caring for the family wardrobe; selecting ready-to-wear garments.

13 :115. EXPERIMENTAL COOKERY. *3 credits.*

Techniques and methods used in experimental cooking; group and individual experiments. One hour lecture, four hours laboratory.

13 :117. HISTORIC COSTUME. *3 credits.*

Prerequisite, Art 21. Costume from ancient to modern times and its influence on present-day styles.

13 :118. MEAL SERVICE AND DEMONSTRATION FOODS. *3 credits.*

Prerequisite, 46. Problems in time, labor, money, and equipment in relation to planning, marketing, care of food, preparation and service of meals for the family group; appropriate forms of service for various types of meals, table etiquette; experience in planning and giving short demonstrations. One hour lecture, four hours laboratory.

13 :119. NUTRITION IN HEALTH. *3 credits.*

Prerequisite, 45-46 and Chemistry 55. Composition, metabolism, and physiological functions of food stuffs; nutritive requirements for individuals in different stages of development, and on various economic levels; results of dietary deficiencies. Two hours lecture, two hours laboratory.

13 :120. NUTRITION IN DISEASE. *3 credits.*

Prerequisite, 119. Application of principles of normal nutrition to diet in disease; construction of diets for specific disease conditions. Two hours lecture, two hours laboratory.

13 :121. FIELD WORK. *3 credits.*

Additional laboratory or apprentice experience in a specialized field of Home Economics. Open to Seniors in Home Economics. One hour conference, six hours practice.

13 :122. HOME MANAGEMENT RESIDENCE. *3 credits.*

Six weeks residence in the Home Management House; practical problems in management of time, energy, and money; experience in group living. Groups limited to four each for six weeks. Open to all upper college women, regardless of major field. Lab. fee.

13 :212. INSTITUTIONAL MANAGEMENT. *3 credits.*

Standards for good food service; food purchasing; time, labor, material, cost, equipment, and goodwill.

13 :215. HOUSEHOLD EQUIPMENT. *3 credits.*

Selection, use, and care of modern household equipment.

13 :216. QUANTITY COOKERY. *3 credits.*

Preparation of all types of food; care of equipment and utensils; layout of different types of food preparation and service centers. Six hours laboratory and conference.

## LATIN AND GREEK

Although language and literature are by no means neglected, there is a constant archaeological emphasis in most of these courses. Use is made of slides, photographs, maps, and other illustrative material to demonstrate the many aspects of ancient life and thought.

### GREEK

### GENERAL COLLEGE

11 :21-22. ELEMENTARY GREEK. *Each semester. 4 credits.*

Grammar and reading.

(Note: Second-Year Greek, given on demand, may be taken as Individual Reading or Research 131-132.)

11 :61. COMPARATIVE LITERATURE. *3 credits.*

Study of major Greek writers in translation, their influence on later European literature.

11 :99. CLASSICAL MYTHOLOGY. *3 credits.*

Legends and folklore of Greece and Rome, their rebirth in later literature and art.

### UPPER COLLEGE

11 :113. GREEK ARCHAEOLOGY. *3 credits.*

Daily life of Greeks, their achievements in the arts and sciences, archaeological aims and methods.

11 :131-132. INDIVIDUAL READING OR RESEARCH. *Each semester. 1 to 3 credits.*

Prerequisites depend upon subject, which may be either in language or archaeology.

## LATIN

### GENERAL COLLEGE

16 :21-22. ELEMENTARY LATIN. *Each semester. 4 credits.*

Grammar and reading.

16 :43-44. SECOND YEAR LATIN. *Each semester. 3 credits.*

Prerequisite, 21-22, or two years of high school Latin. Inscriptions, Letters of Pliny, selections from Vergil, or other material suited to needs or interests of students.

(Note: Students who have completed two years of high school Latin will enroll in 43. Those who have had one year or less will enroll in 21.)

16 :62. COMPARATIVE LITERATURE. *3 credits.*

Study of major Roman writers in translation, their influence on later European literature.

### UPPER COLLEGE

(Note: Some of the following courses will be given each year, according to demand. Latin 43-44 or equivalent is prerequisite for courses 103 to 111 inclusive.)

16 :103. ROMAN SATIRISTS. *3 credits.*

Horace, Persius, Juvenal, and Martial: history of satire, ancient and modern.

16 :104. ROMAN DRAMATISTS. *3 credits.*

Plautus, Terence, and Seneca; history of comedy and tragedy, stage antiquities.

16 :105. ROMAN HISTORIANS. *3 credits.*

Sallust, Livy, and Tacitus; historiography, philosophy of history.

16 :106. ROMAN PHILOSOPHICAL AND RELIGIOUS WRITERS. *3 credits.*

Lucretius, Cicero, Seneca, and Boethius; pagan syncretism and mystery religions.

16 :107. MEDIAEVAL LATIN WRITERS. *3 credits.*

St. Augustine or the other Fathers, the Goliards or other secular literature, Church Latin, letters of famous Humanists.

16 :108. ROMAN LYRIC AND ELEGIAC POETS. *3 credits.*

Catullus, Horace, Ovid, Propertius, and Tibullus.

16 :111. ROMAN NOVELISTS. *3 credits.*

Petronius and Apuleius, Milesian tale and Alexandrian romance.

16 :114. ROMAN ARCHAEOLOGY. *3 credits.*

No prerequisite. Daily life of Romans, their achievements in the arts and sciences, archaeological aims and methods.

16 :131-132. INDIVIDUAL READING OR RESEARCH. *Each semester. 1 to 3 credits.*

Prerequisites depend upon subject, which may be either in language or archaeology.

## MATHEMATICS

*17 :18. INTERMEDIATE ALGEBRA. *3 credits.*

Prerequisite, one year of high school algebra. Fundamentals, factoring, radicals, exponents, equations, graphing, etc. (No credit to those who have taken Algebra 17.)

*17 :24. COLLEGE ALGEBRA-TRIGONOMETRY. *4 credits.*

Algebra through quadratics, progressions, variation, binomial theorem, theory of equations, determinants, logarithms, function concept, trigonometric functions of any angle, solution of triangle problems by right triangle, sine law, cosine law method, radian measure, identities and formulas.

*Students planning to take either 18 or 24 must make a satisfactory score on a screening test (administered during Orientation Week) in order to continue in course selected.

17 :27. SPHERICAL TRIGONOMETRY. *2 credits.*

Prerequisite, 24 (or equivalent). Right and oblique spherical triangle, applications to aviation and astronomy.

17 :43. ANALYTIC GEOMETRY. *4 credits.*

Prerequisite, 24 (or equivalent). Geometrical properties of curves and surfaces, coordinate systems.

17 :45. DIFFERENTIAL CALCULUS. *4 credits.*

Prerequisite, 43. Theory of limits, development and use of differentiation formulas, use of derivative and differential in maxima and minima, time rates, curvature, motion, approximate error, expansion of functions in series, partial differentiation.

17 :46. INTEGRAL CALCULUS. *4 credits.*

Prerequisite, 45. Formal integration, definite integral application to areas, volumes, moments of inertia, centroids, approximation methods, multiple integral.

17 :66. ASTRONOMY. *3 credits.*

The earth as a body in space, other planets; the moon and other satellites; comets, meteorites; solar system and its motions; analysis of light; the sun and other stars, star clusters, nebulae, Milky Way, external galaxies; structure of universe.

17 :57. SOCIAL STATISTICS. *3 credits.*

Averages, measures of dispersion, graphical methods, normal curve and applications, linear correlation. Planned for students in the Social Science Division No credit to those who have taken 40:148.

17 :60. MATHEMATICS OF FINANCE. *3 credits.*

Prerequisite, 18. Interest procedures, annuities, amortization, sinking funds, bonds, stocks, depreciation.

## UPPER COLLEGE

17 :104. HISTORY OF MATHEMATICS. *3 credits.*

Prerequisite, 24 (or equivalent). Origin and development of mathematical ideas and processes.

17 :113. ADVANCED MATHEMATICS. *2 credits.*

Prerequisite 46. For engineering students. Complex numbers, determinants and matrices, empirical equations, theory of equations.

17 :114. ADVANCED MATHEMATICS. *2 credits.*

Prerequisite 113. For engineering students. Linear differential equations, Fourier series, and associated topics.

17 :121. MATHEMATICS OF INSURANCE. *2 credits.*

Prerequisite, 60. Formulas for life insurance premiums, valuation procedures, construction of mortality tables.

17 :130. EMPIRICAL EQUATIONS AND NOMOGRAPHY. *3 credits.*

Prerequisite, 43. Correlation of data involving two or three variables by empirical methods, nomographic methods for evaluation of empirical formulas.

17 :201. ADVANCED CALCULUS. *3 credits.*

Prerequisite, 46. Infinite series, infinite, multiple, line and surface integrals, maxima and minima of functions of several variables, partial differentiation.

17 :204. DIFFERENTIAL EQUATIONS. *3 credits.*

Prerequisite, 46. Methods of forming and solving some important types of ordinary and partial differential equations, their applications to science.

17 :205. THEORY OF EQUATIONS. *3 credits.*

Prerequisite, 45. Complex numbers, cubic and quartic equations, numerical approximation to the roots, theorems of Sturm, Budan, and Descartes, determinants and matrices, simultaneous linear equations, symmetric functions, resultants, discriminants.

17 :206. HIGHER GEOMETRY. *3 credits.*

Prerequisite, 45. Analytic geometry of space, topics in metric differential geometry.

17 :207. HIGHER ALGEBRA. *3 credits.*

Prerequisite, 45. Mathematical induction, partial fractions, complex number system, binomial theorem, multinomial theorem, summation of series, limits, infinitesimals, convergency and divergency of series, power series, inequalities, continued fractions and applications to indeterminate equations, theory of numbers, probability, method of least squares.

17 :208. VECTOR ANALYSIS. *3 credits.*

Prerequisite, 46. Vector algebra, differential vector calculus integration with applications to problems in geometry of two and three dimensions, differential geometry, mechanics, hydrodynamics and electrodynamics.

17 :209. PROJECTIVE GEOMETRY. *2 credits.*

Prerequisite, 206. Point sets on line, line pencils, line co-ordinates, homogeneous co-ordinates, transformations of planes, projective theory of conics.

17 :210. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. *3 credits.*

Prerequisite, 46. Complex numbers, analytic functions, elementary functions of a complex variable, mapping and geometry of elementary functions, theory of integrals, power series, residues and poles, conformal mapping.

17 :211. PARTIAL DIFFERENTIAL EQUATIONS. *2 credits.*

Prerequisite, 204. Partial differentiation and integration, Lagrange equations, linear partial differential equations, solution in series, Bessel, Legendre and Fourier Series, Laplace transform and its application to the solution of differential equations.

17 :257. INTRODUCTION TO STATISTICAL ANALYSIS. *3 credits.*

Prerequisite, 46. Representation of data, measures of central tendency and variability, probability and probability distributions, linear correlation, sampling and reliability.

## MODERN LANGUAGES

### GENERAL COLLEGE

8 :21-22. FIRST YEAR FRENCH. *Each semester. 4 credits.*

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

8 :43-44. SECOND YEAR FRENCH. *Each semester. 3 credits.*

Prerequisite, 22. Grammar review, practice in reading, writing, and speaking; short stories, plays, novels on intermediate level, outside reading.

10 :21-22. FIRST YEAR GERMAN. *Each semester. 4 credits.*

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

10 :43-44. SECOND YEAR GERMAN. *Each semester. 3 credits.*

Prerequisite, 22. Grammar review, practice in reading, writing, and speaking; short stories, plays, novels on intermediate level, outside reading.

23 :21-22. FIRST YEAR SPANISH. *Each semester. 4 credits.*

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

23 :43-44. SECOND YEAR SPANISH. *Each semester. 3 credits.*

Prerequisite, 22. Grammar review; practice in reading, writing, and speaking; short stories, plays, novels on intermediate level, outside reading.

### FRENCH

### UPPER COLLEGE

8 :101-102. THIRD YEAR FRENCH: THE FRENCH NOVEL. *Each semester. 2 credits.*

Prerequisite, 44. Study of novel of 19th Century with reading and class discussion in French of representative works.

8 :103-104. FRENCH COMPOSITION AND CONVERSATION. *Each semester. 2 credits.*

Prerequisite, 44. Advanced composition using French models, special attention to words and idioms, development of oral expression and conversational ability.

8 :105. FRENCH PHONETICS. *1 credit.*

Prerequisite, 44. Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation and intonation by use of phonograph records and individual tape recordings made by the student.

8 :209-210. NINETEENTH CENTURY FRENCH DRAMA. *Each semester. 3 credits.*

Prerequisite, 102 or 104.

8 :211-212. SURVEY OF FRENCH LITERATURE. *Each semester. 3 credits.*

Prerequisite, 102 or 104.

8 :213-214. FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. *Each semester. 3 credits.*

Prerequisite, 102 or 104.

8 :215-216. HISTORY OF THE FRENCH NOVEL TO THE NINETEENTH CENTURY. *Each semester. 3 credits.*

Prerequisite, 102 or 104.

## GERMAN

### UPPER COLLEGE

10 :101-102. GERMAN DAILY LIFE AND COMPOSITION. *Each semester. 3 credits.*

Prerequisite, 44.

10 :207-208. SCHILLER. *Each semester. 3 credits.*

Prerequisite, 44.

10 :209-210. GOETHE. *Each semester. 3 credits.*

Prerequisite, 44.

10 :211-212. SURVEY OF GERMAN LITERATURE. *Each semester. 3 credits.*

Prerequisite, 44.

10 :213-214. MODERN GERMAN DRAMA. *Each semester. 3 credits.*

Prerequisite, 44.

10 :215-216. FAUST. *Each semester. 3 credits.*

Prerequisite, 44.

10 :217-218. GERMAN SHORT STORY. *Each semester. 3 credits.*

Prerequisite, 44.

## SPANISH

### UPPER COLLEGE

23 :103-104. APPLIED SPANISH. *Each semester. 3 credits.*

Prerequisite, 44. Intensive reading of Spanish and Spanish-American stories, with class discussion in Spanish, independent reading of several novels.

23 :106. COMMERCIAL CORRESPONDENCE IN SPANISH. *3 credits.*

Prerequisite, 44. Translation of business letters from Spanish into English and from English into Spanish, with attention to advertising, and the rubber industry.

23 :207-208. MODERN SPANISH LITERATURE. *Each semester. 3 credits.*

Prerequisite, 44.

23 :209-210. SPANISH LITERATURE OF THE GOLDEN AGE AND EIGHTEENTH CENTURY (1550-1800). *Each semester. 3 credits.*

Prerequisite, 44.

23 :211-212. SURVEY OF SPANISH LITERATURE. *Each semester. 3 credits.*
Prerequisite, 44.

231-232. INDIVIDUAL READING IN FRENCH, GERMAN, OR SPANISH. *Each semester. 1 to 3 credits.*
Prerequisite, permission.

## MUSIC

### ORGANIZATIONS

No fee is charged for enrollment of qualified students in music organizations. Enrollment may be repeated each semester for credit as indicated. Students seeking the B.A. or B.S. degree in Buchtel College may include only 4 such credits in the minimum 128 credits required for graduation.

18 :1. UNIVERSITY SINGERS. *Each semester. 3 hours a week. 1 credit.*
A mixed chorus. Membership through audition. Numerous appearances throughout the year, on campus, at various civic organizations, broadcasting stations, and social groups, as well as public performances.

18 :2. UNIVERSITY CHORUS. *Each semester. 2 hours a week. 1 credit.*
Informal choral singing for mixed voices, designed for training and recreation of participants. No audition required.

18 :3. UNIVERSITY SYMPHONY ORCHESTRA. *Each semester. 2 hours a week. 1 credit.*
An organization devoted to study of orchestral literature, gives fall and spring concert and performs at special programs such as Christmas, Easter, and Commencement. Membership through audition.

18 :4. UNIVERSITY BAND. *Each semester. 1 credit.*
University Football Band is organized in the first semester and plays for all games. University Concert Band functions after football season. Study and performance of advanced literature. Membership in concert band through audition.

### APPLIED MUSIC

No credit hour fee is charged for enrollment in applied music. Fees are based on the number of private lessons per week and are listed in the section on "Fees and Expenses." Credit is given on the basis of 2 credits per semester for one 30-minute lesson per week and 90 minutes practice per day. Enrollment may be repeated each semester for credit. Students seeking the B.A. or B.S. degree in Buchtel College may include only 8 such credits in the minimum 128 credits required for graduation.

18:24. VOICE
18:25. PIANO
18:26. ORGAN
18:27. STRING INSTRUMENTS
18:28. BRASS INSTRUMENTS
18:29. WOODWIND INSTRUMENTS

### GENERAL COLLEGE

18 :22. THE ART OF MUSIC. *2 credits.*
Introduction to literature of music, using recordings as illustrative material.

18 :23. FUNDAMENTALS OF MUSIC. *2 credits.*
Functional introduction to music, notation, terminology, scale construction, simple melodic dictation, sightsinging, familiarity with piano keyboard, and experience in singing part songs.

18 :30. STUDENT RECITAL. *1 credit each semester.*
A weekly meeting of music students with members of the faculty, providing opportunity for experience in public performance before an audience, lecture and discussion of problems in the general area of performance, including ensemble playing and singing, conducting, accompanying, stage deportment, solo performance.

18 :41. THEORY I. *5 credits.*
Creative harmony and musicianship. Study of scales, intervals, chord formations, basic forms; creative use of these elements: sight-singing, melodic dictation, ear training.

18 :42. THEORY II. *5 credits.*

Continuation of Theory I, plus two and three-part dictation. Increase of the harmonic vocabulary through chromatic harmony and modulation.

18 :50. VOICE CLASS. *2 credits.*

Prerequisite, 23. Technique employed in choral conducting, securing attacks, releases, dynamic and tempo changes, voice classification, methods of securing correct intonation, analysis of choral literature.

18 :55-56. STRING CLASS. *2 credits each semester.*

Prerequisite, 23. Playing of string instruments with emphasis on violin. Materials and teaching techniques.

18 :57. WOODWIND CLASS. *2 credits.*

Prerequisite, 23. Playing of woodwind instruments with emphasis on clarinet. Materials and teaching techniques.

18 :58. BRASS AND PERCUSSION CLASS. *2 credits.*

Prerequisite, 23. Playing of brass and percussion instruments with emphasis on cornet. Materials and teaching techniques; rudimentary drumming.

18 :62. ELEMENTARY SCHOOL MUSIC LITERATURE AND APPRECIATION. *2 credits.*

Prerequisite, 23. Materials and methods for teaching music appreciation in the grades; serious music through recordings, films, and concerts.

## UPPER COLLEGE

18 :101-102. HISTORY OF MUSIC. *Each semester. 2 credits.*

Prerequisite, 22. Development of music from ancient to modern times; recordings as illustrative material.

18 :103. THEORY III. *3 credits.*

Prerequisite, 42. Study and composition of sixteenth century modal polyphony, and 18th century tonal counterpoint.

18 :104. THEORY IV. *3 credits.*

Prerequisite, 103. Analysis of form, rhythm, melody, harmony, and polyphony, in music of all eras. Creative work in various styles.

18 :110. CONDUCTING. *2 credits.*

Prerequisite, 23. Technique and practice in conducting.

18 :111. COMPOSITION. *2 credits.*

Study and creative use of the major styles and idioms of musical composition of the twentieth century.

18 :114. ORCHESTRATION. *2 credits.*

Prerequisites, 55, 56, 57, 58, 103. Theory of instrumentation from small ensemble to full band and orchestra arrangements.

18 :116. ADVANCED CONDUCTING. *2 credits.*

Prerequisites, 110, 114. Baton technique, practice in reading and interpretation of scores; organization of orchestra and band, problems in programming; practice conducting University ensembles.

18 :121. PRIMARY-ELEMENTARY MUSIC EDUCATION. *2 credits.*

Prerequisite, 23. Theory and practice of presenting vocal and instrumental music in the grades; Rote, observation, sight reading, part-songs, objectives and methods for grades I through VI.

18 :123. SECONDARY MUSIC EDUCATION. *2 credits.*

Prerequisite, 23. Procedures that give the Junior and Senior High School student balanced participation in applied and general music.

18 :130. STUDENT RECITAL. *1 credit each semester.*

(See 18:30 for description.)

**18 :201.** INTRODUCTION TO MUSICOLOGY. *2 credits.*
Prerequisites, 101, 102. Musical acoustics, psychology of music, comparative musicology, aesthetics, and other topics related to music.

18 :202. BIBLIOGRAPHY AND RESEARCH. *2 credits.*
Prerequisite, 18:101. Survey of available printed material in the field of music, and methods of use. Writing of a research paper.

## PHILOSOPHY

### GENERAL COLLEGE

19 :55. INTRODUCTION TO PHILOSOPHY. *3 credits.*
Nature of philosophy and philosophical methods, selected problems.

19 :56. INTRODUCTION TO LOGIC. *3 credits.*
Problems of meaning and definition; rules of correct reason, particularly the investigation of the syllogism; fallacies. A short survey of other forms of logic will also be given.

19 :57. ETHICS. *3 credits.*
Theories of value and moral obligation; inquiry into problems of moral conduct.

19 :63. COMPARATIVE RELIGION. *3 credits.*
Basic beliefs and practices of religions of the East.

19 :64. HISTORY OF WESTERN RELIGION. *3 credits.*
Development of religious ideas in the Judaeo-Christian tradition.

19 :65. PHILOSOPHY OF RELIGION. *3 credits.*
Prerequisite, 55 or 63 or 64. Basic problems of theology and religion.

### UPPER COLLEGE

19 :103. HISTORY OF ANCIENT PHILOSOPHY. *3 credits.*
History of Western thought including its connections with scientific, religious, social, and political circumstances from Pre-Platonic philosophers to Epicureans, Stoics, and Scholastics. Open to Sophomores with approval of department head.

19 :104. HISTORY OF MODERN PHILOSOPHY. *3 credits.*
Continuation of 103. From Descartes through Spinoza to Kant and his successors. Open to Sophomores with approval of department head.

19 :111. AESTHETICS. *3 credits.*
Nature of art, beauty, and aesthetic experience.

19 :112. PHILOSOPHY OF ART. *3 credits.*
Prerequisite, 111 or permission. Divisions and classifications of art, application of principles of aesthetics to the several arts.

19 :129. SYMBOLIC LOGIC. *3 credits.*
Prerequisite, 56 or permission. Introduction to mathematical logic, propositional and class logic, elementary logico-mathematical problems.

19 :158. ADVANCED ETHICS. *3 credits.*
Prerequisite, 57 or permission. Continuation of examination of ethical principles.

19 :221-222. PROBLEMS OF PHILOSOPHY. *Each semester. 3 credits.*

19 :224. CONTEMPORARY PHILOSOPHY. *3 credits.*
Prerequisites, 103-104 or permission. Nineteenth and 20th century philosophy.

19 :229. THEORY OF KNOWLEDGE. *3 credits.*

Prerequisite, 103-104 or permission. Nature of knowledge; nature and criteria of truth.

19 :241. PHILOSOPHY OF SCIENCE. *3 credits.*

Prerequisite, approval by instructor, based on a background in both philosophy and science. Origin, development, and influence of principles and presuppositions of science.

19 :242. PROBLEMS OF SCIENCE. *3 credits.*

Prerequisite, 241. Implications of contemporary science for philosophy; implications of contemporary philosophy for science.

## PHYSICS

### GENERAL COLLEGE

20 :31. MECHANICS, HEAT, AND SOUND. *5 credits.*

Co-requisite, Mathematics 45. For engineers. Four recitation and one laboratory period per week.

20 :32. ELECTRICITY, MAGNETISM, LIGHT AND MODERN PHYSICS. *5 credits.*

Prerequisite, 31, Co-requisite, Mathematics 46. Four recitation and one laboratory period per week.

20 :51. MECHANICS. *4 credits.*

Prerequisite, high school mathematics. Three recitation and one laboratory period per week. For science and education students.

20 :52. HEAT, ELECTRICITY AND MAGNETISM. *4 credits.*

Prerequisite, 51. For science and education students. Three recitation and one laboratory period per week.

20 :53. SOUND AND LIGHT. *4 credits.*

Prerequisite, 52, Mathematics 24. For science and education students. Three recitations and one laboratory period per week.

### UPPER COLLEGE

20 :150. MODERN PHYSICS. *2 credits.*

Prerequisites, 32, Mathematics 46. The atom and its nucleus, its use as a source of energy. Not open to Physics majors. Primarily for engineers.

20 :201. ELECTRICITY AND MAGNETISM. *4 credits.*

Prerequisite, 53, Mathematics 46. Magnetostatics, electrostatics, dielectrics, electrical images, uni-directional electric currents, their measurement and production, measurement of electrical properties of matter. Three recitation periods and one 3-hour laboratory per week.

20 :202. ELECTRICITY AND MAGNETISM. *4 credits.*

Prerequisite, 201. Currents in inductive circuits, inductance and capacitance, their effect on alternating currents, transmission of power, generators, transformers, motors, thermoelectricity, and electromagnetic waves. Three recitation periods and one 3-hour laboratory per week.

20 :204. INTRODUCTION TO ATOMIC PHYSICS. *3 credits.*

Prerequisites, 201, Mathematics 46 or permission. Advances in physics since 1890; electrons, X-rays, radioactivity, emission of light, atoms, relativity.

20 :205. MECHANICS AND SOUND. *3 credits.*

Prerequisites, 52, Mathematics 46. An intermediate course.

20 :209-210. PHYSICAL MEASUREMENTS. *Each semester. 2 credits.*

Laboratory course involving advanced laboratory techniques. For Physics majors in their Senior year.

20 :221-222. COLLOQUIUM. *Each semester. 1 credit.*

20 :235. RADIATION SAFETY. *1 credit.*

Prerequisite, 150 or 204. Types of radiation, units for measurement of radiation, biological effects of radiation, detection instruments and their calibration, calculation of radiation level, permissible radiation levels, shielding, safety rules and their importance.

## GRADUATE COURSES

20 :301. SELECTED TOPICS IN THEORETICAL PHYSICS. *3 credits.*

Prerequisites, 201, 204, Mathematics 204.

20 :304. ELECTRIC CURRENTS THROUGH GASES. *3 credits.*

Relation of current intensity to gaseous pressure and characteristics of the more important vacuum tube circuits. Foundation course for future work in electronics.

20 :304L. LABORATORY. *1 credit.*

Experiments involving use of electron tubes and electric circuits.

20 :306. PHYSICAL OPTICS. *3 credits.*

Physical theory of light including development of wave theory and wave mechanics, interference, diffraction, and polarization.

20 :306L. LABORATORY. *1 credit.*

Laboratory exercises in interference, diffraction, and polarization.

20 :307. ELECTRODYNAMICS. *3 credits.*

Mathematical theory of electric field based on Maxwell's equations, application and more recent findings of wave mechanics, to electric communication problems.

20 :309-310. ADVANCED PHYSICAL MEASUREMENTS. *Each semester. 1 to 3 credits.*

Graduate thesis course. Credit according to work done. Usually 2 credits per semester.

20 :311-312. THERMODYNAMICS. *Each semester. 3 credits.*

Mathematical course covering principles of thermodynamics and their physical applications.

20 :314. X-RAYS. *3 credits.*

Theory and applications of X-rays to physical and chemical problems; use of X-ray camera and interpretation of X-ray photographs.

20 :314L. LABORATORY. *1 credit.*

Laboratory practice in X-ray work.

20 :317-318. NUCLEAR PHYSICS. *Each semester. 3 credits.*

Prerequisites, 204 and Mathematics 46 or permission. Structure of the nucleus, radioactivity, detection devices, interactions of radiation with matter, particle accelerators, fission, fusion, nuclear energy, atomic reactors, tracer technique, radiation hazards.

20 :331-332. REACTOR PHYSICS. *3 credits each semester.*

Prerequisites, 204 and Mathematics 204. Nuclear physics, nuclear reactions, diffusion of neutrons, slowing down of neutrons, diffusion in the general case, reactor statics, reactor kinetics, reactor control, shielding, reactor accidents and excursions, transport theory.

20 :333. REACTOR LABORATORY. *2 credits.*

Prerequisites, 204 and Mathematics 204. Recommended to follow or accompany 331 or 332. Will consist of 1 hour recitation and 3 hours laboratory per week.

20 :351. ATOMIC SPECTRA. *3 credits.*

Prerequisites, 53 and 204. Atomic spectra and their relation to structure of matter, line spectra and development of theory, spectra, fine structure of lines.

20 :352. MOLECULAR SPECTRA. *3 credits.*

Prerequisite, 351. Molecular bands and development of theory, rotational, vibrational and electronic bands, Raman effect, Isotopic effect, intensity of bands, methods of determining the molecular constants from wave number measurements.

## POLITICAL SCIENCE

### GENERAL COLLEGE

21 :41. AMERICAN NATIONAL GOVERNMENT. *3 credits.*

Constitution, its distribution of powers; the President, Congress, courts and great administrative organization in its contacts with citizen.

21 :42. AMERICAN STATE AND LOCAL GOVERNMENT. *3 credits.*

State and local units of government, citizen participation; Akron, Summit County, and Ohio history and government.

21 :43. COMPARATIVE GOVERNMENT. *3 credits.*

Government of England, other governmental systems compared with England and with each other.

21 :44. AMERICAN DIPLOMACY. *3 credits.*

Machinery by which United States conducts its foreign relations; policies adopted toward major areas of world.

### UPPER COLLEGE

21 :101. MUNICIPAL GOVERNMENT. *3 credits.*

Development, composition, governmental organization of American city life.

21 :102. MUNICIPAL ADMINISTRATION. *3 credits.*

Organization of city government for performing services to public; police protection, supervised playgrounds, parks, etc.

21 :103. POLITICAL PARTIES. *3 credits.*

Party development, organization, and functions in United States; individual and group participation in political process.

21 :108. PARLIAMENTARY LAW AND LEGISLATIVE PROCEDURE. *3 credits.*

Drill in parliamentary law; modern legislative procedures and problems. Equal time for each part.

21 :109. GOVERNMENT AND SOCIAL WELFARE. *3 credits.*

The part government has come to play in social welfare field.

21 :110. GOVERNMENT AND BUSINESS. *3 credits.*

Relationship of government with business.

21 :111. INTERNATIONAL ORGANIZATION. *3 credits.*

Political organization among nations; United Nations.

21 :117-118. POLITICAL THEORY. *Each semester. 3 credits.*

First semester, political speculation of Classical Greeks, Romans; English, American, and French Revolutions. Second semester, post-revolutionary period to present time; American political speculation.

21 :205. CONSTITUTIONAL LAW. *3 credits.*

The Constitution and American Government in terms of Supreme Court decisions.

21 :206. MUNICIPAL CORPORATIONS. *3 credits.*

American city from the legal point of view.

21 :207. MUNICIPAL FINANCE. *2 credits.*

Municipal budgets, purchasing of materials, sources of municipal revenue, and problems of real estate tax.

21 :211. INTERNATIONAL RELATIONS. *3 credits.*

Political relations among nations, international political scene.

21 :212. INTERNATIONAL LAW. *3 credits.*

Established rules, practices, and conventions governing the relations of the several national states and their citizens with one another.

21 :213-214. PUBLIC ADMINISTRATION. *Each semester. 3 credits.*

Administrative organization, personnel recruitment, sound budget organization and procedure, public reporting, public relations.

21 :217-218. FIELD WORK. *Each semester. 3 credits.*

Open to Senior majors with six hours of Public Administration.

21 :220. ADMINISTRATIVE LAW. *3 credits.*

Rights of a citizen before government agencies, rights and duties of public official, customary procedures of government agencies, legal recourse of both agency and citizen in accomplishing their objectives.

21 :243. COMMUNIST GOVERNMENT AND POLITICS. *3 credits.*

Communist theory and practice in the governments of the Soviet Union, China, and the communist satellites.

21 :298. SEMINAR IN POLITICAL SCIENCE. *2 credits.*

Required for Senior majors planning graduate work.

21 :301. READINGS IN WORLD AFFAIRS. *1 to 3 credits.*

21 :302. READINGS IN PUBLIC ADMINISTRATION. *1 to 3 credits.*

21 :303. READINGS IN POLITICS AND PUBLIC AFFAIRS. *1 to 3 credits.*

(Not more than 6 credits may be earned in reading courses.)

21 :311. RESEARCH AND THESIS IN POLITICAL SCIENCE. *1 to 3 credits.*

## SOCIOLOGY

### GENERAL COLLEGE

22 :23. INTRODUCTION TO SOCIOLOGY. *3 credits.*

For Nurses. Personal adjustment of nurse to patient, patient to nurse; nurse's relationship to community.

22 :41. GENERAL SOCIOLOGY. *3 credits.*

Origin, development, structure, and function of social groups.

22 :42. SOCIAL ATTITUDES. *3 credits.*

Prerequisite, 41. Development of a person and personality as a function of social group.

22 :43. MODERN SOCIAL PROBLEMS. *3 credits.*

Social problems from sociological point of view.

22 :45. SOCIAL ANTHROPOLOGY. *3 credits.*

Fundamental concepts of our cultural heritage.

### UPPER COLLEGE

22 :104. LEADERSHIP. *2 credits.*

Leaders and leadership, problems, techniques, and processes of the same.

22 :109-110. SEMINAR AND THESIS. *Each semester. 2 credits.*

For Seniors only. Study of research techniques and preparation of a research paper.

22 :111-112. FIELD WORK. *Each semester. 3 credits. (150 hours of work at a recognized agency or institution.)*

Primarily for students interested in welfare or group work. Seniors only. Two semesters recommended.

22 :113. URBAN-RURAL SOCIOLOGY. *2 credits.*

Comparison and analysis of urban and rural life.

22 :114. CRIMINOLOGY. *3 credits.*

Background for delinquency and penology. Cause, treatment, and prevention of crime.

22 :116. THE AMERICAN INDIAN. *3 credits.*

His origin, distribution, culture, changing ways and influence on the white man.

22 :117. CHILD WELFARE. *3 credits.*

Relation and responsibility of state and community to child.

22 :202. COLLECTIVE BEHAVIOR. *3 credits.*

Group behavior in early stages of social movements; crowds, mobs, crazes, booms, panics, revolutions, etc.

22 :204. THE FAMILY. *3 credits.*

Family as a group of interacting personalities.

22 :206. COMMUNITY ORGANIZATION. *3 credits.*

Social, religious, educational, relief, and character building agencies of a community.

22 :210. POPULATION MOVEMENTS. *3 credits.*

Present movements of population: migration, refugee, urban and rural, with their sociological implications.

22 :213. THE JUVENILE DELINQUENT. *3 credits.*

The delinquent as a person, causes, treatment, and prevention.

22 :215. SOCIAL THEORY. *3 credits.*

Theoretical basis of modern social thinking, institutions, and organizations.

22 :216. SOCIAL INSTITUTIONS. *3 credits.*

Origin of social institutions, organizations, and systems of social thought.

22 :217. RACE RELATIONS. *3 credits.*

Minority groups, sociological interpretation of relationships between dominant and minority groups.

22 :219-220. COMMUNITY SOCIAL STUDIES. *Each semester. 3 credits.*

Community problems, research with reference to Census Tract Maps.

22 :221. SOCIAL CONTROL. *3 credits.*

Foundations, means, and techniques for controlling social behavior.

## SPEECH

### GENERAL COLLEGE

24 :41. PUBLIC SPEAKING. *3 credits.*

Training in types of public address; performance and individual criticism.

24 :42. ADVANCED PUBLIC SPEAKING. *3 credits.*

Prerequisite, 41. Additional training in public address.

24 :45-46. ORAL ARGUMENT. *Each semester. 2 credits.*

Theory of argument, analysis of logical processes in speech situation, practice in argument and discussion.

24 :47-48. BUSINESS AND PROFESSIONAL SPEAKING. *Each semester. 2 credits.*

Application of speech skills to business and professional life; practice in conference speaking and discussions.

24 :51. READING ALOUD. *3 credits.*

Oral interpretation of printed page; content and purpose of selections from poetry, prose, and drama as means of bringing literature alive for an audience.

24 :52. ADVANCED INTERPRETATION. *3 credits.*

Prerequisite, 51. Reading aloud, program building in reference to specific audiences and types of literature.

24 :53. INTRODUCTION TO THE THEATRE. *3 credits.*

Theatre arts, variety of crafts involved in dramatic production, plays and playwrights, scenery and lighting, costumes, make-up, directing, and acting.

24 :54. VOICE AND ARTICULATION. *2 credits.*

International phonetic alphabet, correct production of speech sounds.

24 :56. PUBLIC DISCUSSION AND GROUP PROCEDURES. *3 credits.*

Prerequisite, permission. Techniques of discussion in terms of skills of the effectve discussion leader and participant.

24 :57-58. INTERCOLLEGIATE DEBATE. *Each semester. 1 or 2 credits.*

Argument in its application to a particular question debated among unversities and colleges each year. A group is selected to comprise the University Debate Team, which fulfills intercollegiate engagements.

24 :76. FUNDAMENTALS OF SPEECH. *3 credits.*

Introduction to the speech and hearing mechanisms and to the speech problems of the speech handicapped school child.

24 :81. RADIO SPEAKING. *3 credits.*

Prerequisite, 51. Radio and television speaking, microphone and camera techniques, announcing.

UPPER COLLEGE

24 :114. TEACHING OF SPEECH. *2 credits.*

Methods to improve speech of elementary and secondary school child.

24 :151. LIP READING. *3 credits.*

History and methods of lip reading.

24 :161. PLAY PRODUCTION. *3 credits.*

Stage design, scenery construction, stage lighting, make-up, theatre management.

24 :162. ADVANCED PLAY PRODUCTION. *3 credits.*

Prerequisite, 161. Play direction.

24 :163. ACTING. *3 credits.*

Prerequisite, permission. Actor's approach to theatre, establishment of his character, his inner resources, stage practices, external acting techniques.

24 :164. ACTING. *3 credits.*

Prerequisite, 163. Advanced work in acting.

24 :167. HISTORY OF THE THEATRE. *3 credits.*

Significant theatrical eras from ancient Greek to contemporary stage, evolution of physical stage, scenic design, styles in acting and production, stage illumination, special effects.

24 :181. RADIO PRODUCTION. *3 credits.*

Prerequisite, 51, 81. Technique and performance of radio and television broadcasting; practice in dramatic production for radio and television.

24 :204. SPEECH PHONETICS. *2 credits.*

Phonetic transcription using International Phonetic Alphabet.

24 :271-272. SPEECH CORRECTION. *Each semester. 3 credits.*

First semester: etiology of speech disorders. Second semester: principles of speech therapy.

24 :273-274. CLINICAL PRACTICE IN SPEECH CORRECTION. *Each semester. 1 or 2 credits.*

Practice in clinical therapy. To be taken concurrently with 271-272.

24 :277. HEARING CONSERVATION AND AUDIOMETRY. *3 credits.*

History of hearing conservation and testing; administering simple audiometric tests.

24 :287. ADVANCED RADIO WRITING AND PRODUCTION. *3 credits.*

Practical experience in writing and adapting for radio and television. Opportunity is provided for performance from University studio over one of local stations.

24 :290. DEVELOPMENT OF RHETORICAL THEORY. *2 credits.*

Principles of speech making from time of Plato and Aristotle to present.

24 :291-292. SPEECH CRITICISM. *Each semester. 2 credits.*

First semester: rhetorical criticism of speeches by Fox, Pitt, Burke, and contemporary British speakers. Second semester: Webster, Clay, Calhoun, and contemporary American speakers.

24 :293. SPEECH SEMINAR. *2 credits.*

Special problems involving original research in one selected area of Speech.

24 :393. RESEARCH. *1 to 3 credits.*

# COLLEGE OF ENGINEERING

## BASIC ENGINEERING COURSES

### GENERAL COLLEGE

33 :20. DRAWING INTERPRETATION AND SKETCHING. *1 credit. (0-1)**

For Industrial Management students. Principles of projections. Freehand and scaled sketches. Dimensioning, cross sections, notes, and shop terms. Reading exercises on prints of machines, structures, and industrial layouts.

33 :23. SURVEY OF ENGINEERING. *0 credit. (1-0)*

Engineering as a profession, including personal aptitudes, educational requirements, scope of various branches, professional duties, responsibilities and ethics. Lectures by staff members and practicing engineers.

33 :25. ENGINEERING DRAWING. *3 credits. (1-2)*

Lettering and proper use of drawing instruments. Geometric drawing. Orthographic projection. Freehand sketching. Pictorial drawing. Cross sections. Threads and threaded fasteners. Dimensioning. Working drawings. Charts and graphs.

33 :26. MACHINE DRAWING. *Evening session. 2 credits. (0-2)*

Prerequisite, 33 :25. Detail and assembly drawings of machines and equipment. Technical sketching. Notes and specifications. Shop terms and methods.

33 :36. ENGINEERING MATERIALS. *3 credits. (3-0)*

Prerequisite, 5 :28. Manufacture, physical properties, and uses of ferrous and non-ferrous metals, wood, clay products, concrete, and plastics. Alloys and the equilibrium diagram. Heat treatment.

33 :43. DESCRIPTIVE GEOMETRY. *3 credits. (1-2)*

Prerequisite, 33 :25. Graphical methods of solving three-dimensional problems involving points, lines, planes, and solids. Intersection and development of surfaces. Application of graphical methods to solution of engineering problems.

33 :48. APPLIED MECHANICS I. *3 credits. (3-0)*

Prerequisite, 20 :31. Prerequisite or corequisite, 17 :46. Forces. Resultants. Couples. Equilibrium of force systems. Friction. First moments and centroids. Second moments of areas. Moments of inertia of bodies.

33 :49. APPLIED MECHANICS II. *3 credits. (3-0)*

Prerequisite, 33 :48. Motion of particles and of rigid bodies. Force, mass, and acceleration. Translation, rotation, and plane motion. Work. Potential and kinetic energy. Efficiency. Impulse, momentum, and impact.

### UPPER COLLEGE

33 :112. MANUFACTURING METHODS. *2 credits. (2-0)*

Prerequisite, 33:36. Production machine tools. Foundry methods and equipment. Stamping. Spinning. Welding. Precision measurement. Inspection. Safety.

17 :113. ADVANCED MATHEMATICS I. *2 credits. (2-0)*

Prerequisite, 17 :46. Complex numbers. Determinants and matrices. Empirical equations. Theory of equations.

17 :114. ADVANCED MATHEMATICS II. *2 credits. (2-0)*

Prerequisite, 17 :113. Linear differential equations. Fourier series. Laplace transform.

*Rec.-Lab. credit.

33 :113. TECHNICAL DISCOURSE I. *1 credit. (1-0)*

Prerequisite, 1 :2. Principles of technical report writing with emphasis on informative content in letters and memoranda. Readings in contemporary prose.

33 :114. TECHNICAL DISCOURSE II. *1 credit. (1-0)*

Prerequisite, 33 :113. Continuation of 33 :113 with emphasis on preparation of informal and formal technical reports. Readings in poetry.

33 :115. TECHNICAL DISCOURSE III. *1 credit. (1-0)*

Prerequisites, 1 :6, 33 :114. Principles of technical speech content and delivery.

33 :116. TECHNICAL DISCOURSE IV. *1 credit. (1-0)*

Prerequisite, 33 :115. Continuation of 33 :114. Readings in drama.

33 :117. TECHNICAL DISCOURSE V. *1 credit. (1-0)*

Prerequisite, 33 :116. Preparation of technical material for publication with emphasis on graphic representation. Preparation of technical material for oral delivery with emphasis on visual aids.

33 :128. ENGINEERING ECONOMY. *2½ credits. (2½-0)*

Prerequisite, Pre-Junior standing. Principles of engineering economy including equivalence, alternatives, costs, depreciation, valuation, and selected project studies.

33 :133. NON-FERROUS METALLURGY. *Evening session. 3 credits. (3-0)*

Prerequisite, 5 :22 or 5 :28, or permission of instructor. Physical properties of non-ferrous metals. Principles of alloying. Phase diagrams. White metals, light alloys, copper alloys. Die castings.

33 :134. FERROUS METALLURGY. *Evening session. 3 credits. (3-0)*

Prerequisite, 33 :133. Properties of pure iron and carbon steel. Effects of alloying elements and impurities. Heat treatment. Surface treatment. Cast steel. Welding. Cast iron. High alloy steels. Tool steels.

33 :135. PHYSICAL METALLURGY. *2½ credits. (2-½)*

Prerequisites, 5 :28, 33 :36. Principles of alloying. Alloy phase diagrams. Effects of alloying on physical properties. Crystal mechanism of metal processing. Powder metallurgy. Verification of principles by laboratory experiment.

33 :137. ENGINEERING MATERIALS LABORATORY I. *½ credit. (0-½)*

Prerequisite, 33 :36. Testing machines and techniques. Verification of physical properties as determined by tests of materials in tension, compression, bending and torsion.

33 :138. ENGINEERING MATERIALS LABORATORY II. *½ credit. (0-½)*

Prerequisite, 33 :137. Continuation of 137.

## GRADUATE COURSES

33 :301. COMPUTERS AND COMPUTER METHODS. *3 credits. (3-0)*

Prerequisite, 17:204. Construction and operation of analog and digital computers. Solution of equations. Numerical analysis principles. Programming. Special uses and techniques. Lectures, demonstrations, problems.

33 :302. ENGINEERING ANALYSIS. *3 credits. (3-0)*

Prerequisite, 17:204. The engineering method as typified by selection, application, execution and comparison of effective solution procedures. Accuracy considerations. Methods of checking. Analysis and interpretation of results. Lectures, discussions, problems.

33 :303. DATA ANALYSIS. *3 credits. (3-0)*

Prerequisite, 17:204. Analysis, interpretation and smoothing of engineering data through application of statistical and correlation theory. Use of probability papers in design for extremes. Study of measurement accuracy and reliability. Methods for deriving composite relations from empirical observations of segmental nature. Lectures, problems.

# CIVIL ENGINEERING COURSES

## GENERAL COLLEGE

34 :47. SURVEYING I. *2 credits. (1-1)*†

Prerequisite, 17 :24. Principles of plane surveying. Use of tape, level and transit. Computation of areas. Field problems involving measurement of horizontal and vertical distances and angles.

## UPPER COLLEGE

34 :101. MECHANICS OF MATERIALS I. *3 credits. (3-0)*

Prerequisite, 33 :48. Stress and strain caused by tension, compression, torsion and flexure. Riveted and welded joints. Shear and moment diagrams. Beams of two materials. Deflection of beams by integration. Combined direct and flexural stresses. Axially loaded columns.

34 :102. MECHANICS OF MATERIALS II. *1½ credits. (1½-0)*

Prerequisite, 34 :101. Deflection of beams by moment-area. Elastic energy. Impact. Combined stresses. Mohr's circle. Eccentrically loaded columns.

34 :105. STRUCTURAL ANALYSIS. *2½ credits. (2½-0)*

Prerequisite, 34 :101. Analysis of roof trusses, mill bents, and bridge trusses. Fixed and moving loads. Influence lines.

34 :106. INDETERMINATE STRUCTURES. *3 credits. (2½-½)*

Prerequisite, 34:105. Indeterminate beams, frames, and trusses. Moment-Area, Energy, Slope-deflection, Moment distribution, Williot-Mohr, and Column analogy methods. Laboratory work in deformeter analysis of structural models.

34 :107. HYDROLOGY. *2 credits. (2-0)*

Prerequisite, 36 :171. Factors affecting ground water and stream flow. Application of principles to problems of water supply and flood routing.

34 :109. SURVEYING II. *2 credits. (1-1)*

Prerequisite, 34 :47. Precise leveling. Triangulation. Theory and adjustment of errors in networks. Astronomic observations pertinent to surveying. Field adjustment of instruments. Topography.

34 :111. HYDRAULICS. *2 credits. (1-1)*

Prerequisite, 36 :171. Application of fluid mechanics principles to water flowing in pipes and open channels. Verification of fluid mechanics and hydraulics concepts in the laboratory.

34 :112. CONCRETE MIXTURES LABORATORY. *1 credit. (0-1)*

Prerequisite, Junior standing. Tests of cement, aggregates, and concrete in accordance with A.S.T.M. Standards. Design of concrete mixes.

34 :113. BITUMINOUS MIXTURES LABORATORY. *1 credit. (0-1)*

Prerequisite, 34 :112. A.S.T.M. tests of asphaltic materials. Design of bituminous mixtures.

34 :114. STEEL DESIGN I. *2½ credits. (2½-0)*

Prerequisites, 34 :102, 34 :105. Connections, beams, columns, tension members, base plates, floor systems, combined direct stress and bending.

34 :115. STEEL DESIGN II. *2½ credits. (2½-0)*

Prerequisite, 34 :114. Plate girders, roof trusses, and mill bents. Bridge trusses. Elementary plastic design principles.

34 :116. SURVEYING III. *2 credits. (1-1)*

Prerequisite, 34 :109. Surveying pertinent to highways. Circular, spiral and parabolic curves. Earthwork computations. Mass diagrams and establishment of final grade.

†Rec.-Lab. credit.

34 :117. REINFORCED CONCRETE DESIGN I. *2½ credits. (2½-0)*

Prerequisites, 34 :102, 34 :106. Prerequisite or corequisite, 34 :112. Flexural and web reinforcement of beams. Axial and eccentric columns. Footings. Elastic and ultimate strength design principles.

34 :118. REINFORCED CONCRETE DESIGN II. *3 credits. (3-0)*

Prerequisite, 34:117. Floor systems and building frames. Retaining walls. Prestressed concrete beams. Temperature and creep phenomena. Additional ultimate strength considerations.

34 :120. SOIL MECHANICS AND FOUNDATIONS. *3 credits. (2-1)*

Prerequisites, 34 :102, 36 :171. Soil identification and physical properties. Subsurface investigation. Types of foundations, basis of design, methods of construction. Laboratory tests of soil samples to determine physical properties and structural behavior.

34 :121. WATER SUPPLY. *2½ credits. (2½-0)*

Prerequisites, 34 :107, 34 :111. Quality and quantity requirements. Development of surface and ground water supplies. Treatment of domestic and industrial supplies. Distribution systems, including reservoirs and pumping stations. Principles of water works finance.

34 :122. SEWERAGE. *2½ credits. (2½-0)*

Prerequisites, 34 :107, 34 :111. Hydraulics of sewers. Quantity of domestic sewage and storm water. Collection by separate and combined systems. Treatment of domestic sewage.

34 :123. SANITARY LABORATORY. *1 credit. (0-1)*

Corequisite, 34 :122. Selected physical, chemical and bacteriological tests on raw and treated water and sewage.

34 :124. SANITARY DESIGN. *1 credit. (0-1)*

Prerequisite, 34 :122. Analysis of water distribution system. Water works finance, including least capitalized cost. Design of sanitary and storm water drains. Dimensional design of water and sewage treatment units.

34 :125. HIGHWAYS. *2 credits. (2-0)*

Prerequisites, 34 :112, 34 :116, 34 :120. Prerequisite or corequisite, 34 :113. Administration, planning, and finance of modern highways. Geometric and structural design of flexible and rigid pavements. Drainage. Stabilization. Surfaces. Maintenance.

34 :126. COMMUNITY PLANNING. *3 credits. (3-0)*

Prerequisite, Senior standing. History of community planning. Provisions for orderly and balanced development. Zoning. Benefits of planning as reflected in physical and mental health of residents. Requirements for streets, playgrounds, parks, transportation facilities. Development of residential, commercial, industrial and civic areas. Detailed study of a selected modern city plan.

34 :127. CIVIL ENGINEERING SEMINAR I. *½ credit. (½-0)*

Prerequisite, Senior standing. Discussion of current Civil Engineering papers, news, and activities. Selection of a Senior thesis topic.

34 :130. CIVIL ENGINEERING SEMINAR II. *2 credits. (1-1)*

Prerequisite, 34 :127. Discussion of current Civil Engineering papers, news and activities. Investigation or solution of an individual problem, including a formal report, as a Senior thesis.

34 :201. AIRCRAFT STRUCTURAL ANALYSIS. *3 credits. (3-0)*

Prerequisites, 34 :106, 34 :114. Shear center. Unsymmetrical bending. Buckling of thin plates. Semi-monocoque structures. Shear webs. General theory of indeterminate structures applied to rings and complex structures. Beam columns. Successive approximation applied to multi-cell structures.

## GRADUATE COURSES

34 :302. ELASTICITY AND PLASTICITY. *3 credits. (3-0)*

Prerequisites, 34:102 and 17:114 or 17:204. Theory of elastic and inelastic behavior of engineering materials. Applications of plastic behavior to structural use of materials. Phenomenologic, rheologic and structure-of-matter considerations.

34 :303. PLASTIC DESIGN OF METAL STRUCTURES. *3 credits. (3-0)*

Prerequisite, 34:115. Principles of plastic behavior of steel and aluminum. Plastic analysis of metal structures by the mechanism and equilibrium methods. Design of structural elements and connections. Advantages and limitations of plastic considerations.

34 :304. ADVANCED REINFORCED CONCRETE DESIGN. *3 credits. (3-0)*

Prerequisite, 34:118. Ultimate strength design of reinforced concrete members. Analysis and design of prestressed concrete beams and frames.

## ELECTRICAL ENGINEERING COURSES

### GENERAL COLLEGE

35 :30. DIRECT CURRENT AND ALTERNATING CURRENT PRINCIPLES. *2 credits. (1½-½)*†

Prerequisite, 20 :32. For C.E. and M.E. students. Principles of direct current circuits, generators, and motors. Principles of alternating current circuits and instruments.

35 :31. ELECTRICAL ENGINEERING FUNDAMENTALS. *3 credits. (2½-½)*

Prerequisite, 20:32. Fundamental units of electricity. Basic laws of Ohm, Kerchhoff, Ampere and Lenz. Analysis of series and parallel circuits. Direct current transients.

### UPPER COLLEGE

35 :132. ELECTRICAL MACHINERY. *2½ credits. (2-½)*

Prerequisite, 35 :30. For M.E. and C.E. students. Study of principles, characteristics and applications of A.C. and D.C. machinery.

35 :133. ALTERNATING CURRENT CIRCUITS I. *3 credits. (2½-½)*

Prerequisite, 35 :31. Vector analysis of alternating current, voltage and power. Complex operator. Real and apparent power. Series and parallel circuits. Network theorems. Coupled circuits.

35 :134. ALTERNATING CURRENT CIRCUITS II. *3 credits. (2½-½)*

Prerequisite, 35:133. Balanced and unbalanced polyphase circuits. Study of circuit response to voltages having harmonic components.

35 :135. ILLUMINATION. *2 credits. (2-0)*

Prerequisite, 20 :32. Fundamentals of illumination and principles underlying specifications and designs for adequate electrical lighting.

35 :136. ELECTRICAL MEASUREMENTS I. *1½ credits. (1½-0)*

Prerequisite, 35 :31. Measurement of high and low resistance. Galvanometer fundamentals. Magnetic tests. D. C. meters. Potentiometers.

35 :137. ELECTRICAL MEASUREMENTS II. *1½ credits. (1½-0)*

Prerequisites, 35:134, 35:136. Alternating current bridges. Alternating current instruments and instrument transformers.

35 :138. ELECTRICAL MEASUREMENTS III. *1½ credits. (1½-0)*

Prerequisite, 35:137. Collection, interpretation and presentation of data obtained in scientific measurements.

35 :139. ELECTROMAGNETIC FIELDS. *2 credits. (2-0)*

Prerequisite, 35:133. Electrostatic fields. Coulomb's Law and Gauss's Law. Magnetostatic fields. Time varying fields. Faraday's Law and Ampere's Law. Boundary conditions. Introduction to Maxwell's Equations.

35 :140. ELECTRICAL TRANSIENTS. *2½ credits. (2½-0)*

Prerequisite, 35 :133. Solution of general impedance function equation to establish steady state and transient responses of complex circuits. Use of operational methods.

35 :143. ELECTRICAL MACHINERY I. *1½ credits. (1½-0)*

Prerequisite, 35:133. Generation of voltage in machines. Transformers, D. C. machines, A. C. machines, windings, rotating field. D. C. machine characteristics.

†Rec.-Lab. credit.

35 :144. ELECTRICAL MACHINERY II. *1½ credits. (1½-0)*
Prerequisite, 35:143. Transformers. Induction motors. Equivalent circuits and characteristics.

35 :146. ELECTRICAL MACHINERY III. *1½ credits. (1½-0)*
Prerequisite, 35:144. A. C. generator and synchronous motor characteristics. Generator regulation. Synchronous motor applications.

35 :147. ELECTRICAL MACHINERY IV. *1½ credits. (1½-0)*
Prerequisite, 35 :146. Principles and applications of power and fractional horsepower single-phase motors.

35 :149. INDUSTRIAL INSTRUMENTATION. *2 credits. (2-0)*
Prerequisite, 35 :132 or 35 :143. Principles of electric indicating, recording and control instruments as applied to temperature, pressure, and fluid flow. Detailed analysis of measuring characteristics of such instruments.

35 :154. ELECTRONIC FUNDAMENTALS. *2½ credits. (2-½)*
Prerequisite, 35 :132. For M.E. students. Characteristics of vacuum and gas tubes. Amplifiers, power supplies, oscillators, polyphase rectifiers. Industrial electronic control circuits.

35 :158. TRANSMISSION LINES AND NETWORKS. *2½ credits. (2½-0)*
Prerequisite, 35:140. Steady-state and transient solutions of distributed constant circuits. Application of transmission line at power, audio and radio frequencies.

35 :161. ELECTRONICS I. *1½ credits. (1½-0)*
Prerequisites, 35:134 and 35:139, 17:114. Physics of electron devices. Electron ballistics and emission. Vacuum and gas tubes. Semiconductors. Rectification and filtering.

35 :162. ELECTRONICS II. *1½ credits. (1½-0)*
Prerequisite, 35:161. Industrial electronics. Tubes in A. C. circuits. Time delay. Photoelectric applications. Motor and generator control.

35 :164. ELECTRONICS III. *1½ credits. (1½-0)*
Prerequisite, 35:162. Circuit analysis of electron devices in frequency domain. Equivalent circuits. Amplifiers. Oscillators. Modulation and detection.

35 :167. ELECTRICAL ENGINEERING PROBLEMS. *1 credit. (0-1)*
Prerequisite, Senior standing. Selected comprehensive problems. Supervised discussion and computation periods.

35 :168. ULTRA HIGH FREQUENCIES. *3 credits. (3-0)*
Prerequisites, 35:158, 35:169. Maxwell's Equations. Wave equations. Field analysis of waveguides. Microwave components. Klystron and magnetron oscillators.

35 :169. ELECTRONICS IV. *1½ credits. (1½-0)*
Prerequisites, 35:164 and 35:140. Transient circuit analysis of electron devices. Relaxation circuits. Wave shaping and generation. Pulse amplifiers. Instrumentation and systems.

35 :170. COMPUTERS. *2 credits. (2-0)*
Prerequisites, 35:164 and 35:140. Fundamentals underlying the use, construction and operation of analog and digital computers.

35 :171. SERVO-MECHANISMS. *3 credits. (3-0)*
Prerequisites, 35:164 and 35:140. Study of electromechanical systems through an analysis of the dynamic equations. Consideration of closed loop systems involving feedback.

35 :175. ELECTRICAL LABORATORY I. *½ credit. (0-½)*
Corequisites, 35:134, 35:139, 35:143.

35 :176. ELECTRICAL LABORATORY II. *1½ credits. (0-1½)*
Prerequisite, 35:175. Corequisites, 35:136, 35:144, 35:161.

35 :177. ELECTRICAL LABORATORY III. *1½ credits. (0-1½)*
Prerequisite, 35:176. Corequisites, 35:135, 35:137, 35:146, 35:162.

35 :178. ELECTRICAL LABORATORY IV. *1½ credits. (0-1½)*
Prerequisite, 35:177. Corequisites, 35:138, 35:140, 35:147, 35:164.

35 :179. ELECTRICAL LABORATORY V. *1½ credits. (0-1½)*
Prerequisite, 35:178. Corequisites, 35:149, 35:158, 35:169, 35:170.

35 :180. ELECTRICAL LABORATORY VI. *3 credits. (0-3)*
Prerequisite, 35:179. Corequisites, 35:168, 35:171.

Experiments in each of the above laboratory courses are correlated with content from several theory courses as a means of demonstrating interrelationships.

35 :181. INDUSTRIAL INSTRUMENTATION LABORATORY. *½ credit. (0-½)*
Corequisite, 35:149. For M. E. students. Experimental analysis of different systems of control.

GRADUATE COURSES

35 :300. ADVANCED CIRCUIT THEORY. *3 credits. (3-0)*
Prerequisites, 35:134 and 17:114 or 17:204 and one additional mathematics course. Steady state and transient response of circuits and filters to continuous and pulse voltages. Use of time vs. frequency domain analysis. Introduction of pole and zero concept in circuit analysis.

35 :301. SERVO-MECHANISMS. *3 credits. (3-0)*
Prerequisite, 35:300. Formulation of integro-differential equations of linear electrical and mechanical systems, the LaPlace transform, dynamics of closed loop systems, the K G locus, representation of the G function, the stability problem and Nyquist criterion.

35 :302. NETWORK ANALYSIS. *3 credits. (3-0)*
Prerequisite, 35:300. Use of pole and zero concept in the analysis of active and passive two and four terminal networks. Stability considerations.

35 :303. ELECTROMAGNETIC FIELD THEORY. *3 credits. (3-0)*
Prerequisite, 35:300. Analysis of distributed parameter devices such as lines, wave guides and antennas by application of Maxwell's equations.

## MECHANICAL ENGINEERING COURSES

GENERAL COLLEGE

36 :41. HEAT POWER PRINCIPLES. *3 credits. (2½-½)**
Prerequisites, 20 :31, 17 :46. For C.E. and E.E. students. Thermodynamic principles including the first and second laws. Study of cycles involving gases, vapors and mixtures. Applications in I. C. engines, compressors, steam plants, refrigeration and air conditioning.

UPPER COLLEGE

36 :169. ENGINEERING ADMINISTRATION II. *3 credits. (3-0)*
Prerequisite, 36 :170. Organization and coordinated administration of functional engineering groups required in research, development, production, and distribution.

36 :170. ENGINEERING ADMINISTRATION I. *1½ credits. (1½-0)*
Prerequisite, 40 :62. Legal phases of engineering, including contracts, specifications, patents, and copyrights. Professional ethics.

36 :171. FLUID MECHANICS. *2½ credits. (2½-0)*
Prerequisite, 33 :49. Properties and behavior of gases and liquids at rest and in motion. The energy equation. Flow in conduits. Forces on body submerged in moving fluid. Characteristics of turbines, pumps and fluid couplings.

36 :173. MECHANISMS. *3½ credits. (2-1½)*
Prerequisite, 33 :49. Displacement, velocity, and acceleration of machine parts and devices for producing desired motions. Development of gear elements. Action of gear trains. Concurrent use of analytical and graphical methods.

36 :174. FLUID MECHANICS LABORATORY. *1 credit (0-1)*
Prerequisite, 36 :171. Verification of fluid flow through orifices and conduits and around submerged bodies. Metering devices. Performance tests of fluid machinery.

36 :177. THERMODYNAMICS I. *2½ credits. (2-½)*
Prerequisites, 20 :31, 17 :46. Fundamental concepts, including the first and second laws, fluid properties and gas characteristics. Instrumentation.

*Rec.-Lab. credit.

36 :180. LIGHTER-THAN-AIR THEORY. *2 credits. (2-0)*

Prerequisites, 17 :46, 34 :101. Basic aerodynamic and stress analysis theories involved in airship component development such as fabric design, control system analysis, performance calculations and valve limitation studies.

36 :181. THERMODYNAMICS II. *2½ credits. (2-½)*

Prerequisite, 36 :177. Study of real gases, mixtures and combustion, including flow of fluids.

36 :182. MACHINE DESIGN I. *3 credits. (2-1)*

Prerequisites, 36 :173, 33 :138, 34 :102. Functions of machine elements. Selection of materials. Design of parts for strength with consideration of fatigue and stress concentration. Fits and tolerances.

36 :183. MACHINE DESIGN II. *2 credits. (1-1)*

Prerequisite, 36 :182. Dynamic and combined stresses in machine elements.

36 :184. HEAT TRANSFER. *2½ credits. (2-½)*

Prerequisite, 36 :181. Fundamentals of heat transfer by conduction, convection and radiation. Properties of fluids and solids affecting heat transfer in engineering structures.

36 :186. JET PROPULSION PRINCIPLES. *3 credits. (3-0)*

Prerequisites, 36 :171, 36 :191. Fundamentals of propulsion systems. Analysis of ramjet, turbojet, rockets, and thrust augmentation.

36 :187. HEATING AND AIR CONDITIONING. *3 credits. (3-0)*

Prerequisite, 36 :191. Heat transfer, heat losses in buildings. Types of heating equipment and methods used to calculate required capacities. Properties of air, cooling, the cooling load, humidifying, dehumidifying and air circulation. Methods used to design and select equipment to satisfy given requirements.

36 :191. THERMODYNAMICS III. *2 credits. (1½-½)*

Prerequisite, 36 :181. Study of thermodynamic cycles.

36 :192. HEAT MACHINES. *4 credits. (3-1)*

Prerequisite, 39 :191. Study of actual heat cycles and machines. Performance characteristics of pumps, fans and conduits.

36 :196. INSPECTION TRIPS. *1 credit. (0-1)*

Prerequisite, Senior standing. Trips through power stations and industrial plants in northern Ohio. Written reports.

36 :197. MECHANICAL ENGINEERING PROBLEMS. *3 credits. (1-2)*

Prerequisite, Senior standing. Investigation of a project by individual or small student group. Detailed formal report required.

36 :198. MACHINE DESIGN III. *2 credits. (2-0)*

Prerequisite, 36 :183. Vibrations. Preliminary design of an assigned project.

## GRADUATE COURSES

36 :300. VIBRATION ISOLATION. *3 credits. (3-0)*

Prerequisites, 17:114 or 17:204. Vibrations and vibration isolation in simple and complex systems of free and forced vibrations with or without damping. Shock loading and its isolation. Design characteristics of isolators with selected applications.

36 :301. EXPERIMENTAL STRESS ANALYSIS. *3 credits. (3-0)*

Prerequisites, 36:183 or 34:106. Experimental methods including use of brittle lacquer, strain gages, photoelasticity and membrane analogy. Advantages and limitations of each method.

36 :302. FLUID DYNAMICS. *3 credits. (3-0)*

Prerequisites, 36:171, 36:181. Fluid flow as affected by thermodynamic considerations. Study of shock and shock areas. Applications of dynamic fluid flow.

36 :303. HEAT TRANSFER PROBLEMS. *3 credits. (3-0)*

Prerequisites, 36:184 and 17:114 or 17:204. Selection of methods and development of techniques in analysis and design problems.

# COLLEGE OF EDUCATION

## ART

27 :121. ART FOR THE GRADES. *Either semester. 2 credits.*

Prerequisite, 21. Art requirements in elementary grades; laboratory work to give teachers a knowledge of materials and mediums, and skill in handling them.

27 :191. METHODS IN TEACHING ART. *First semester. 3 credits.*

Prerequisite, completion of the required course for art teachers and quality point ratio of 2 in the field. Study of trends and procedure in teaching and in supervision; relation of art to the home, school and community; observation in selected schools is required.

## BUSINESS EDUCATION

27 :173. METHODS IN TYPEWRITING. *1 credit.*

Prerequisite, Secretarial Training and a quality point ratio of 2 in the field. Methods of presentation in typewriting. Demonstrations and observations required. A theory test in the field must be passed before credit will be given for the course.

27 :174 METHODS IN SHORTHAND AND TRANSCRIPTION. *1 credit.*

Prerequisite, Secretarial Science 63 or 142 and a quality point ratio of 2 in the field. Methods of presentation in shorthand and transcription. Demonstrations and observations required. A theory test in the field must be passed before credit will be given for the course.

27 :175. METHODS IN BOOKKEEPING. *1 credit.*

Prerequisite, Accounting 22 or 42 and a quality point ratio of 2 in the field. Methods of presentation in bookkeeping, business cycle, practice sets, and lesson plans. A theory test in the field must be passed before credit will be given for the course.

## GENERAL COLLEGE

27 :41. HANDICRAFTS IN ELEMENTARY SCHOOL. *2 credits.*

A broad range of experiences through the manipulation of various craft mediums which will enrich the curriculum of the elementary school.

27 :45. HISTORY OF EDUCATION. *3 credits.*

Development of civilization with particular reference to the role of education.

27 :55. INTRODUCTION TO EDUCATION. *Either semester. 3 credits.*

An orientation course giving an overall view of the characteristic features of the American educational system and some explanation of the forces that have affected its development.

27 :65. EDUCATIONAL SOCIOLOGY. *Either semester. 3 credits.*

A study of political, social, and economic forces in relation to educational problems such as delinquency, population shifts, vital statistics, unemployment, and technological advance.

27 :86. CHILDREN'S LITERATURE. *3 credits.*

A survey of materials for children in prose, poetry, and illustrations from early historical periods to modern types; criteria of selection and methods of presentation are critically examined.

UPPER COLLEGE

27 :101. ACTIVITY SCHOOL. *3 credits.*

Offered in connection with the demonstration school in the Summer. Designed to examine critically recent trends and newer practices in elementary education and to develop a forward-looking point of view.

27 :105. EDUCATIONAL TESTS AND MEASUREMENTS. *Either semester. 2 credits.*

Prerequisite, 52. Various methods and devices employed in comprehensive and continuous evaluation. Some attention given to treatment and interpretation of scores.

27 :113. PRINCIPLES AND PRACTICES IN SECONDARY EDUCATION. *Either semester. 3 credits.*

Prerequisite, 52. Four units of study carried on concurrently: (1) basic principles of teaching; (2) a working knowledge of methodology in a specific field; (3) observation and participation; (4) preparation of teaching materials.

27 :115. SCHOOL MANAGEMENT AND ADMINISTRATION. *2 credits.*

Accompanies Student Teaching. Administrative relations and responsibilities of the teacher. Group discussion of problems arising in student teaching.

27 :124. STUDENT TEACHING. *Either semester. 6 credits.*

Prerequisite, Education 113 or equivalent. Student teaching under guidance of a directing teacher and a University supervisor.

27 :131. EARLY ELEMENTARY EDUCATION. *First semester. 3 credits.*

Prerequisite, Psychology 52. Aims to develop a forward-looking view-point in the education of young children. Materials, techniques, and practices are examined which furnish opportunities for cooperative enterprise and serve as a background for democratic living.

27 :132. EARLY ELEMENTARY EDUCATION. *Second semester. 3 credits.*

Prerequisite, Education 131. Continuation of course 131 with emphasis on teaching of language arts, science, and social studies at the primary level.

27 :133. SCIENCE FOR THE ELEMENTARY GRADES. *3 credits.*

Prerequisite, Psychology 52. For the prospective teacher of science in the elementary school; development of a point of view toward science teaching and a study of methods of presenting science material.

27 :135. THE TEACHING OF READING. *First semester. 3 credits.*

Prerequisite, Psychology 52. Reading program for the elementary school, together with modern methods of teaching reading at the various levels.

27 :136. ARITHMETIC IN THE ELEMENTARY GRADES. *3 credits.*

Prerequisite, Psychology 52. Trends in arithmetic instruction in elementary school. Procedures for the development of mathematical concepts and skills.

27 :137. TEACHING THE LANGUAGE ARTS. *3 credits.*

Prerequisite, Psychology 52. Materials, grade allocations, and methods for teaching oral and written expression, spelling and handwriting in elementary grades.

27 :138. THE TEACHING OF SOCIAL STUDIES. *2 credits.*

Prerequisite, Psychology 52. Social studies program in the elementary school and the varied means of implementing the program.

27 :191. METHODS IN TEACHING ART. *Second semester. 3 credits.*

Permission of Head of Art Department required. Trends and procedures in teaching art at various age levels with emphasis on junior and senior high. Relation of art to the total educational experience. Studio experimentation. Observation in public schools. Lecture, discussion, and studio.

27 :201. PROBLEMS IN EDUCATION. *Either semester. 3 credits.*

Prerequisite, Senior status in Education. To assist the Senior student in integrating his thinking regarding the purpose of an educational system in a democratic community.

27 :204. PRACTICUM IN READING IMPROVEMENT. *2 credits.*

Prerequisite, Teaching of Reading 135. Reviews and applies the principles of teaching of reading to individuals who need diagnostic and remedial programs.

27 :211. ADULT EDUCATION. *2 credits.*

A survey course for public school teachers and administrators as well as for those engaged full time in Adult Education. Historical background including European influences and their relation to rapid developments in the field during the last decade. Emphasis on current programs throughout the United States.

27 :234. AUDIO-VISUAL EDUCATION. *2 credits.*

To acquaint teachers of all levels with the wide variety of visual and auditory aids available and the techniques for their respective use. Learning to operate projectors and sound reproducers, to locate materials available, and to construct materials for one's own specific use.

27 :235. WORKSHOP. *(Elementary or Secondary School). 2 or 3 credits.*

Opportunity for individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

27 :251-252. ELEMENTARY EDUCATION. *Evening and Summer sessions. 3 credits each semester.*

Evaluation of recent trends and practices in elementary education.

## GRADUATE COURSES IN EDUCATION

Prerequisite to graduate courses in Education: At least 12 credits of undergraduate work in Education or the equivalent, the Bachelor's degree or equivalent, and the provisional certificate for teaching.

27 :302. PRINCIPLES OF GUIDANCE. *2 credits.*

Principles and practices of pupil guidance and of establishing an effective guidance program in elementary and secondary schools.

27 :304. TECHNIQUES OF GUIDANCE. *2 credits.*

Everyday counseling and interviewing as applied in school situations, techniques and uses of group guidance, initiating and using records and record systems, the school counseling use of tests and test results, and principles of administering a school's guidance program, including relationships with school administration, with classroom teaching, and with other school and community services.

27 :309. VOCATIONAL GUIDANCE AND OCCUPATIONAL INFORMATION. *2 credits.*

Sources, organization, and uses of occupational information; principles, practices, and techniques of group instruction and individual guidance in studying, evaluating, and choosing an occupation.

27 :311. STATISTICS IN PSYCHOLOGY AND EDUCATION. *2 credits.*

Statistical methods and techniques used in the field of measurement and by research workers in education and psychology.

27 :312. TECHNIQUES OF EVALUATION. *2 credits.*

Techniques of measuring and evaluating pupil progress. Some attention will be given to test construction.

27 :313. DIAGNOSTIC TESTING AND REMEDIAL TEACHING. *2 credits.*

Study of factors contributing to educational disability. Techniques of diagnostic and remedial work.

*Required graduate courses.

27 :315. PRACTICUM IN SCHOOL COUNSELING. *1 or 2 credits.*

100 hours of supervised experience per credit distributed as follows: 20 hours in selecting, evaluating, administering, scoring, and interpreting tests. 20 hours in counseling with children and youth in such areas of concern as personal and home problems, health, scholastic achievement, school adjustment. 20 hours in educational guidance, time-budgeting, choice of activities, vocational choice, guidance in self-appraisal. 20 hours in counseling with parents, in programs of in-service education of teachers, in community service and public relations. 20 hours in record-keeping, case conferences, administration of school social program, student activities, group guidance.

27 :317. SUPERVISION OF STUDENT TEACHING. *2 credits.*

Primarily for directing teachers in the guidance of student teachers. Topics include: readiness for student teaching; student teacher, directing teacher, and college supervisor relationships; use of the conference, demonstration, and observation; helping student teachers through evaluation.

27 :319. SECONDARY SCHOOL CURRICULUM AND TEACHING. *2 credits.*

Application of the dominant theory of education as applied to curriculum building and procedures in teaching.

27 :320. SECONDARY SCHOOL ADMINISTRATION. *2 credits.*

Problems, procedures, and principles of organization and administration in secondary schools.

27 :322. SUPERVISION OF INSTRUCTION. *2 credits.*

Study of the principles, organization, and techniques of supervision with a view to the improvement of instruction.

27 :323. HISTORY OF EDUCATIONAL THOUGHT. *2 credits.*

An historical study of educational theory and its originators, necessary to an understanding of current theory and practice.

27 :324. CONTEMPORARY PHILOSOPHIES OF EDUCATION. *2 credits.*

Prerequisite, 323. An appraisal of conflicting philosophies which are most important in present school practice.

27 :330. ELEMENTARY SCHOOL CURRICULUM AND TEACHING. *2 credits.*

Application of the dominant theory of education as applied to curriculum building and procedures in teaching.

27 :331. ELEMENTARY SCHOOL ADMINISTRATION. *2 credits.*

Problems, procedures, and principles of organization, administration, and supervision in elementary schools.

27 :335. WORKSHOP. *(Elementary or Secondary School). 2 credits.*

Lectures on workshop technique supplemented by the working out of individual problems under staff guidance.

27 :341. EVALUATION OF SECONDARY SCHOOLS. *2 credits.*

Laboratory course in which the evaluation of a high school will be made by use of up-to-date techniques and criteria.

27 :345-346. PUBLIC SCHOOL ADMINISTRATION. *Each semester. 2 credits.*

Theory and practices of educational administration in state and county systems, cities, and rural districts. School law, organization, administration, finance, pupil accounting, planning, and completion of school buildings.

27 :425. TECHNIQUES OF RESEARCH. *2 credits.*

Research methods and techniques commonly used in education and psychology; preparation of research reports.

27 :427. SEMINAR IN CURRICULUM. *2 credits.*

Principles underlying curriculum construction; review of important investigations; practice in construction of curriculum units.

27 :433-434. COMPARATIVE EDUCATION. *2 credits each semester.*

Educational philosophy and organization in foreign countries.

27 :436. SEMINAR IN ELEMENTARY EDUCATION. *2 credits.*

27 :437. SEMINAR IN SECONDARY EDUCATION. *2 credits.*

27 :450. RESEARCH PROBLEM. *2 to 4 credits.*

Required of candidates for the Master's degree. Credit will vary from 2 to 4 hours depending upon whether the research is classified as a problem or as a thesis.

## GEOGRAPHY

28 :54. ECONOMIC GEOGRAPHY. *3 credits.*

Climate, land forms, soils, mineral resources, and vegetation and their influence upon economic activity. Required of all commerce students.

28 :71. PRINCIPLES OF GEOGRAPHY. *3 credits.*

Principles which are basic in gaining an understanding of the relationship of man's activities to his natural environment.

†28 :72. GEOGRAPHY OF NORTH AMERICA. *3 credits.*

Natural regions, climate, natural resources, work patterns, and industries of the continent.

†28 :73. GEOGRAPHY OF SOUTH AMERICA. *3 credits.*

South American continent: its climate, products, types of inhabitants, various kinds of government, and relation to North American neighbors.

†28 :74. GEOGRAPHY OF EUROPE. *3 credits.*

Natural regions, uneven distribution of resources among the several political units, and an evaluation of some of the problems faced by countries of the continent.

†28 :75. WORLD GEOGRAPHY. *3 credits.*

Effects of geographical environment upon people living in Africa, Malaysian lands, India, China, Japan, Russia, South America, Caribbean lands, United States, and Western Europe.

†28 :77. GEOGRAPHY OF ASIA. *Either semester. 3 credits.*

To help develop an understanding of the various countries of Asia, their economic-geography regions, major commodities, industries and commerce. Study of space relationships, climate, relief, and natural resources as well as significant political, racial, and social factors which have a bearing upon industrial and commercial activities.

## HOME ECONOMICS

27 :151. HOME ECONOMICS EDUCATION. *First semester. 3 credits.*

Organization of home economics in secondary schools. Two hours observation, two hours lecture.

## MUSIC EDUCATION

18 :23. FUNDAMENTALS OF MUSIC. *2 credits.*

A functional introduction to music embracing notation, terminology, scale construction, simple melodic dictation and sight singing, familiarity with the piano keyboard, and experience in singing part songs. A prerequisite to any further study of music.

27 :50. VOICE CLASS. *2 credits.*

A study of the technique employed in choral conducting with emphasis on securing attacks, releases, dynamic and tempo changes; voice classification; and methods of securing correct intonation. Analysis of choral literature.

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†Prerequisite, Geography 71.

18 :55-56. STRING CLASS. *Each semester. 1 credit.*

Actual playing of string instruments with special emphasis on the violin. Study of material and teaching techniques.

18 :57. WOODWIND CLASS. *1 credit.*

Actual playing of woodwind instruments with special emphasis on clarinet. Study of the material and teaching techniques.

18 :58. BRASS CLASS. *1 credit.*

Actual playing of brass instruments with emphasis on the cornet. Materials and teaching techniques; rudimentary drumming.

27 :62. ELEMENTARY SCHOOL MUSIC LITERATURE AND APPRECIATION. *2 credits.*

Materials and methods for teaching music appreciation in the grades, beginning with rote and reading song correlation with children's activities and progressing to the enjoyment of familiar serious music through recordings and concerts.

18 :110. CONDUCTING. *2 credits.*

Fundamentals of conducting technique; individual practice in conducting.

27 :121: PRIMARY-ELEMENTARY MUSIC EDUCATION. *2 credits.*

Theory and practice of presenting vocal and instrumental music in the grades. Rote, observation, sight reading, and part-songs, and discussion of objectives and methods for grades I to VI. Survey of available materials in these fields and instruction in Rhythm Band, Melody Band, and other pre-instrumental methods.

27 :123. SECONDARY MUSIC EDUCATION. *2 credits.*

Procedures that should be employed to give the adolescent a well-balanced participation in applied and theoretical music.

Other music courses are described in the Music Department Section under Liberal Arts.

## NURSING EDUCATION

31 :59. HISTORY OF NURSING. 2 *credits.*

Nursing from prehistoric times to present day. An effort is made to show not only the relationship of the methods in care of the sick to political and economic conditions, but also to show the professional heritage of the present day nurse and the ethical backgrounds of her profession.

31 :63. FOOD ECONOMICS. *3 credits.*

For student nurses. Relative, nutritional, and material values of foods as used in the family dietaries and in planning and preparing meals. Two hours lecture, two hours laboratory.

31 :71. HISTORY OF NURSING. *3 credits.*

Open to graduate nurses or Seniors in the five-year program. Development of nursing from the pre-Christian period to the present time; its relation to religion, science, and social institutions; the influence of leaders and origin of organizations.

31 :100. NURSING TRENDS. *3 credits.*

Current developments and problems in the various fields of nursing; attention to developments in other fields affecting nursing.

31 :105. PRINCIPLES AND METHODS OF TEACHING NURSING. *3 credits.*

Open to graduate nurses or Seniors in the five-year program. Principles of learning and methods of teaching, through which the student may understand and apply these to instruction in the nursing field. Discussion of classroom and clinical instruction; preparation of a plan for teaching an area of nursing according to major interest of the student.

31 :106. WARD MANAGEMENT AND TEACHING. *3 credits.*

Open to graduate nurses or Seniors in the five-year program. An introductory course planned to guide thinking and preparation basic to the organization and management of a hospital division as a head nurse. Principles of administration, supervision and teaching will be explored, discussed, and developed as they relate to nursing service and the guidance of all workers in the division as well as interdepartmental relations.

31 :113. PUBLIC HEALTH NURSING PRACTICE. *3-6 credits.*

Open to graduate nurses or Seniors in the five-year program. Supervised visitation of homes in connection with the service rendered by the Visiting Nurse Service—the practice of public health nursing under supervision. (Six weeks experience for 3 credits)

31 :114. COMPREHENSIVE NURSING CARE. *3 credits.*

Prerequisite or concurrent 113. Analysis and planning of nursing needs of patients. Discussion of the applications of principles of psychology, sociology, natural sciences, community organization and nursing as they affect nursing care. Planned around needs of the students.

31 :115. COMPREHENSIVE NURSING PRACTICE. *3 credits.*

Prerequisite or concurrent 114. Practice in planning and executing comprehensive nursing care for selected patients and directing the members of the nursing team in providing this care. Field experience provided in local hospitals and selected to meet needs and interests of the individual student. Field work 9 hours per week.

## PHYSICAL EDUCATION

### GENERAL COLLEGE

1 :21-22. PHYSICAL EDUCATION. *Each semester. ½ credit.*

Required course in physical education activity planned for freshman year.

#### WOMEN

I. Folk and Square Dancing (each semester) 1 credit.
II. Team Sports (Speedball-Basketball) (first semester) 1 credit.
III. Team Sports (Basketball-Softball) (second semester) 1 credit.
IV. Individual Sports (Archery-Badminton) (each semester) 1 credit.
V. Beginning Swimming (each semester) 1 credit.
Intermediate Swimming (each semester) 1 credit.
VI. Advanced Swimming and Diving (each semester) 1 credit.
Advanced Swimming and Life Saving (second semester) 1 credit.
VII. Modern Dance (each semester) 1 credit.

45-46. BASIC COURSE IN PHYSICAL EDUCATION PRACTICE. *Each semester. 2 credits.*

Men students majoring in Physical Education are required to take all laboratory sections provided for Physical Education 3-4. Women majors are required to take sections I-VII given above.

29 :69. ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL RECREATION. *2 credits.*

Lecture and discussion course of the following material: Health Education, Athletic Equipment, Noon-Hour Recreational Physical Activities, Programs of Activities. Programs of Games, Organization and Administration of Athletic Meets, and Industrial Athletic Organization.

29 :70. ORGANIZATION AND ADMINISTRATION OF MUNICIPAL RECREATION. *2 credits.*

Administration, Budgets, Management of Individual Playgrounds, the Neighborhood Recreation Center, and Community Activities.

29 :93-94. THEORY AND PRACTICE OF PHYSICAL EDUCATION *(for men). Each semester. 2 credits.*

To develop personal technique and skill in presenting calisthenics, marching, gymnastic activities, and officiating in sports; history; general lesson plans suitable for elementary and secondary school programs.

29 :95-96. THEORY AND PRACTICE OF ATHLETICS *(for women). 2 credits.*

Interpretation of rules, techniques and practice in officiating in team and individual sports.

29 :97. APPLIED ANATOMY. *3 credits.*

Study of the human body; origin, insertion, action, innervation, and blood supply of the important muscles of the body in relation to physical education and health.

29 :98. APPLIED PHYSIOLOGY. *3 credits.*

General laws of life; functional activity of tissues, organs, and systems, what they can do and how they work in everyday life.

## UPPER COLLEGE

29 :103. THEORY AND PRACTICE OF PHYSICAL EDUCATION *(for women). Second semester. 2 credits.*

Historical development, methods, and practice in the teaching of apparatus, gymnastics, stunts and tumbling (first nine weeks). Tests and measurements in physical education (second nine weeks).

29 :105-106. THEORY AND PRACTICE OF ATHLETICS *(for men). 2 credits.*

Interpretation of rules, techniques, and practice in officiating in team and individual sports.

29 :108. THEORY AND PRACTICE OF DANCING. *Second semester. 2 credits.*

History, theory, and philosophy of dance as a creative art experience. Practice in rhythmical analysis and composition.

29 :111. RED CROSS FIRST AID. *1 credit.*

Standard American Red Cross course which gives instruction and practice in the immediate and temporary care of injuries and sudden illness.

29 :112. ATHLETIC INJURIES AND MASSAGE *(men). Second semester. 1 credit.*

Theory and practice in scientific manipulation of the muscles as related to therapeutic exercise.

29 :114. THEORY AND PRACTICE OF SWIMMING. *Second semester. 2 credits.*

Analysis of strokes and dives; methods and practice in teaching of swimming.

29 :115. NORMAL DIAGNOSIS AND INDIVIDUAL CORRECTIVE GYMNASTICS AND CORRECTIVE EXERCISE. *2 credits.*

Prerequisite 97 and 98. Current theories and practices relating to the needs of physically handicapped children; emphasis is given to underlying philosophy, purpose, and administration.

29 :119. COMMUNITY HYGIENE. *3 credits.*

Personal and community hygiene, nutrition, disease prevention and control, mental and emotional health, and problems of medical care.

29 :120. CAMPING AND OUTDOOR EDUCATION. *2 credits.*

Camping skills and counseling techniques. Camp administration.

29 :121-122. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION. *Each semester. 2 credits.*

Organization and administration of physical educational programs.

29 :125. ORGANIZATION AND ADMINISTRATION OF SCHOOL HEALTH. *3 credits.*

Organization of health education, with special reference to national, state, and local control. Staff, program, budget, health and safety, facilities, and other phases of administration.

29 :133. METHODS AND MATERIALS IN TEACHING HEALTH EDUCATION. *3 credits.*

Current materials for elementary and secondary school grades; integration and correlation of health education in the education of school children; survey of community, state, and federal agencies concerned with health of school-age children.

29 :134. GAMES AND RHYTHMS FOR ELEMENTARY GRADES. *2 credits.*

Two lectures and two laboratory periods each week. Lectures on theories of play, child development, and supervision responsibilities with classroom teachers in the program of physical education. Laboratories give an opportunity for analysis of games and rhythms for the first six months with emphasis on materials and methods for the various age groups. For majors in Physical Education.

29 :138. HEALTH AND PHYSICAL EDUCATION ACTIVITIES FOR ELEMENTARY GRADES. *3 credits (Previously Physical Education 131 and 132).*

Two lectures and two laboratory periods each week. Philosophy and objectives of health and physical education programs on the elementary level. Practice in teaching games and rhythms of low organization; planning health and physical education programs based upon needs, interests, and development of elementary children; common communicable and non-communicable disturbances; methods of organization; study of source materials available.

## PSYCHOLOGY

### GENERAL COLLEGE

30 :21. ELEMENTARY PSYCHOLOGY.

Introduction to field of psychology with emphasis on basic facts and principles found in the behaviour of the typical human adult. Open only to people in the Pre-Clinical Nursing Program for whom it is a substitute for Psychology 41.

30 :31. INTRODUCTORY PSYCHOLOGY FOR BUSINESS AND INDUSTRY. *3 credits.*

Basic facts and principles involved in human behavior with emphasis on their application to problems in the business and industrial environment. Designed especially for College of Business Administration or College of Engineering students. No student can receive credit for both 41 and 31.

30 :41. GENERAL PSYCHOLOGY. *3 credits.*

Basic facts and principles involved in normal human behavior. Lectures, demonstrations, and discussions.

30 :43. APPLIED PSYCHOLOGY. *3 credits.*

Prerequisite, 41. Introductory survey of techniques used and results obtained by applied psychologists in their analysis of business, education, clinical problems, home, industry, law, criminology, medicine, personnel relationships, social change, and vocation. Lectures, reports, and discussions.

30 :47. INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY. *3 credits.*

Prerequisite, 41. Laboratory procedures and quantitative methods in psychology. Lectures, reference reading, and experiments, including statistical treatment of data obtained. Two hours of lecture and two hours of laboratory work per week. Required of majors.

30 :52. EDUCATIONAL PSYCHOLOGY. *3 credits.*

Prerequisite, 41. Designed to prepare the prospective teacher or supervisor to guide the all-around development of his students more efficiently. Concepts of growth, learning, adjustment, and individual differences; observations of classroom situations.

## UPPER COLLEGE

30 :107. PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE. *3 credits.*

Prerequisite, 41. A developmental study of the individual from birth through the adolescent period; emphasis on needs and problems of typical children and adolescents; preparation of case histories of individual children or adolescents.

30 :110. EXPERIMENTAL PSYCHOLOGY. *3 credits.*

Prerequisite, 45. Scientific methods and tools of modern experimental psychology; group and individual laboratory experiments in such topics as sensory processes, attention and perception, and learning; field studies in the measurement of public opinion. One lecture and two 2-hour laboratory periods a week.

30 :115. SOCIAL PSYCHOLOGY. *3 credits.*

Prerequisite, 41. Psychological responses of the individual in relation to group situations and social influences of modern life.

30 :116. INDUSTRIAL PSYCHOLOGY. *3 credits.*

Socio-psychological principles of behavior operating in business and industry. Topics include group dynamics, and the psychological aspects of communication, supervision, training, selection, procedures, and labor relations.

30 :117-118. INDIVIDUAL FIELD WORK. *1-2 credits each semester.*

Prerequisite, Senior standing and permission. The individual student must obtain permission and make arrangements with the Department Head and with the institutional head. Work is under direct supervision of an institutional staff member and indirect supervision of a psychology staff member. (At least 50 hours of work at the agency or institution is required for each credit.)

30 :204. PSYCHOLOGY OF EXCEPTIONAL CHILDREN AND ADOLESCENTS. *3 credits.*

Prerequisite, 107. Study of atypical or exceptional conditions in the psychological development of children and adolescents; emphasis on diagnostic and treatment procedures in the clinical approach to helping these individuals in their adjustment.

30 :206. NORMAL AND ABNORMAL PERSONALITY. *3 credits.*

Prerequisite, 6 credits in psychology. Basic principles regarding the nature, development, and organization of normal personality; a study of the range of adjustment mechanisms including normal, minor maladjustment area, psychoneuroses, and extreme psychoses. Lectures, recitations, and visits to mental hospitals when possible.

30 :207. PSYCHOLOGICAL TESTING IN PERSONNEL. *3 credits.*

Prerequisite, 6 credits of psychology. Survey of psychological tests and their common uses in business, industry, government, and education; theoretical bases of test construction; practice in administering and interpreting general ability, special aptitude, vocational interest, and personality tests. Two lectures and two 1-hour laboratory periods a week.

30 :208. PRINCIPLES AND TECHNIQUES IN PERSONNEL COUNSELING. *2 credits.*

Prerequisite, 207 or adult engaged in counseling. Instruction and practice in interviewing; survey of occupations and use of Dictionary of Occupational Titles; special problems of counselors in industrial, commercial, and school situations. One lecture and two 1-hour laboratory periods per week.

30 :211. PSYCHOLOGICAL FACTORS IN MARITAL AND HOME ADJUSTMENT. *2 credits.*

Psychology of sex adjustment in adolescence, adulthood, and marriage; psychological evolution of factors which are important to successful marriage and parenthood. Lectures, readings, and discussions.

30 :214. PHYSIOLOGICAL AND COMPARATIVE PSYCHOLOGY. *3 credits.*

Prerequisite, 9 credits in Psychology. Comparative study of animal and human behavior by means of a critical survey of laboratory experiments. Physiological factors underlying such areas of response as sensation, emotion, and adaptive learning.

30 :216. SEMINAR AND RESEARCH PROBLEM. *2 credits.*

Reports by students on reading and experimental research; individual experimental problem done by some students; reviews and critical discussion of current literature in the journals.

## GRADUATE COURSES

30 :207, 208, 213, and 216 are recommended for graduate students. The prerequisite for graduate Psychology courses is graduate standing with some background in Psychology or Seniors with 15 credits of Psychology who may be admitted to courses at the 300 level.

30 :301. ADVANCED GENERAL PSYCHOLOGY. *2 credits.*

Prerequisite, 9 credits in Psychology. A critical survey of major findings in the study of the normal human adult. Emphasis on physiological background and contemporary experimental results. Lectures, readings, and reports.

30 :302. ADVANCED SOCIAL PSYCHOLOGY. *2 credits.*

Concepts and techniques involved in analyzing the behavior of individuals in such social phenomena as folkways, institutions, attitudes, propaganda, leadership, public opinion, and social morality.

*30 :303. ADVANCED EDUCATIONAL PSYCHOLOGY. *2 credits.*

An analysis of development of skills and knowledge; interest and ideals; problem solving and creative activity; social growth and character formation. Designed for teacher or supervisor.

30 :305. PSYCHOLOGY OF LEARNING. *2 credits.*

An analysis of experimental studies of learning and of the theories for organizing these facts. Efficient ways of guiding the learner in different areas of development.

*Required graduate course.
‡Required for Senior majors.

30 :306. INDIVIDUAL INTELLIGENCE TESTING I. *2 credits.*

Prerequisite, Psychology 207 and permission of the Psychology Staff. Offered only as an individual course. Instruction and intensive practice in the administration and interpretation of the Stanford-Binet test.

30 :307. INDIVIDUAL INTELLIGENCE TESTING II. *2 credits.*

Prerequisite, Psychology 207 and permission of the Psychology Staff. Instruction and intensive practice in administration and interpretation of the Wechsler-Bellevue test.

30 :308. ADVANCED CHILD AND ADOLESCENT PSYCHOLOGY. *2 credits.*

Analysis and evalution of methods and conclusion of current major researches in child and adolescent development.

30 :309. PERSONALITY DYNAMICS AND ORGANIZATION. *2 credits.*

Prerequisite, graduate student or Senior major with 15 credits in Psychology. Major personality theories and their respective contributions to the understanding of personality dynamics and organization.

30 :310. PRINCIPLES OF PSYCHOTHERAPY. *2 credits.*

Basic principles and techniques of psycho-therapeutic counseling. Emphasis on client-centered approach and on psychoanalytic therapy as represented by the neo-Freudians. This course pre-supposes an understanding of the dynamics of adjustment as presented in Psychology 206.

30 :312. CLINICAL STUDY OF EXCEPTIONAL INDIVIDUALS. *2 credits.*

Prerequisite, 15 hours of Psychology or permission. Diagnostic and treatment problems in the clinical approach to helping typical individuals in their adjustment. Educational, social, and vocational adjustment. Previous courses in Psychology 206, 207, and 310 recommended.

30 :314. ADVANCED INDUSTRIAL PSYCHOLOGY. *3 credits.*

Prerequisite, graduate student or Senior with 15 hours of Psychology. Human factors influencing production, management, worker satisfactions, and group relations in industry. Selection and training methods, conditions of work, performance rating, supervision, safety, attitude studies, motivation. personal adjustment, and labor-management relations.

30 :317. HISTORY AND SYSTEMS OF PSYCHOLOGY. *2 credits.*

Evolution of methods and concepts of Psychology and of contemporary points of view.

30 :320. PRACTICUM IN CLINICAL PSYCHOLOGY. *1 to 3 credits.*

Prerequisite, permission. Practice in the areas of diagnostic techniques, remedial methods, and personal counseling. Includes the 300 hours of practice required by State Department of Education for certification of the junior school psychologist. Also for those in other areas of clinical psychology. Institutions now cooperating are the Akron Detention Home, Akron School Child Study Department, Barberton School Psychologist Services, County School Psychological Services, Cuyahoga Falls Pupil Personnel Services, Summit County Receiving Hospital, and University Psychological Services.

30 :401. PSYCHOLOGY READING AND RESEARCH. *1 to 4 credits.*

Prerequisite, 20 hours of graduate work. Designed to permit research by graduate student in fields not hitherto covered by him. Guidance by a staff member and approval of the Head of the Department are required.

30 :402. PSYCHOLOGY RESEARCH PROBLEM. *2 to 4 credits.*

Reading and experimental research course which fills the problem or thesis requirement for the Master's degree.

# COLLEGE OF BUSINESS ADMINISTRATION

## GENERAL BUSINESS

### GENERAL COLLEGE

40 :51. BUSINESS LAW. *3 credits.*

For students in secretarial science. No credit given toward B.S. in Business Administration. Elements of contracts, sales, and negotiable instruments.

40 :54. ECONOMIC GEOGRAPHY. *3 credits.*

Climate, land forms, soils, mineral resources, vegetation, and their influence upon economic activity.

40 :61. BUSINESS ORGANIZATION AND MANAGEMENT. *3 credits.*

Survey of modern business procedures, including kinds of business organizations, production systems, personnel problems, wage payment plans, product design, purchasing, marketing, and advertising.

40 :62. PRODUCTION MANAGEMENT. *3 credits.*

Prerequisite, 61. Place of management in business; economics of industrial production; factors of production; and control of the production processes.

40 :81. SELLING. *2 credits.*

Characteristics of effective salesmen, types of selling, activities, human relation factors in selling, and the creation and presentation of sales appeals.

40 :82. CONSUMER ECONOMICS. *3 credits.*

40 :84. PUBLIC RELATIONS. *2 credits.*

General course in Public Relations covering newspaper publicity, industrial publications, and other types of organizational publicity.

40 :94. MERCHANDISING. *Evening session. 1 credit.*

Merchandise buying, inventory and merchandise control, pricing, store layout, merchandise display, etc. Credit not given if Retailing 192 is taken.

### UPPER COLLEGE

40 :141-142. BUSINESS LAW. *Each semester. 3 credits.*

Origin of commercial law, operation and discharge of contracts; law of sales, agency, negotiable instruments; partnerships and corporations; recent court cases integrated with the text material to demonstrate how principles apply to concrete cases.

40 :144. LAW OF CREDIT AND COLLECTIONS. *2 credits.*

Types and characteristics of sales contracts; law of collection procedure, liens, and other legal recourses of creditors.

40 :146. REAL ESTATE LAW. *2 credits.*

Legal problems connected with property transfer and acquisition, landlord and tenant relationships, trusts, etc.

40 :147. ECONOMIC STATISTICS. *3 credits.*

Prerequisite, 6 credits in Economics. Nature and uses of statistical data, ratio analyses, distribution curves, central tendencies, index numbers, correlation.

40 :151. TRANSPORTATION. *3 credits.*

Prerequisite, 3 hours of Economics. A basic course in the economics of transportation, requirements of an effective transportation system, rate-setting, etc.

40 :152. TRAFFIC MANAGEMENT. *2 credits.*

Prerequisite, 151. Classification of commodities, setting tariffs, routing, traffic claims, etc.

40 :153-154. INTERNATIONAL COMMERCE. *Each semester. 2 credits.*

Prerequisite, 3 hours of Economics. Principles of international trade, balances, distribution machinery; characteristics and potentials of various foreign markets. Credit not given for both Foreign Trade and International Commerce.

40 :156. FOREIGN TRADE. *3 credits.*

Prerequisite, 3 hours of Economics. Economics and practices of foreign trade with emphasis on world trade from the standpoint of United States.

40 :158. PRINCIPLES OF INSURANCE. *3 credits.*

Prerequisite, 171. Underlying principles on which all forms of insurance are based. Beginning with the theory of probabilities, the principles are developed as they apply to the divisions of insurance — life, fire, marine, casualty and security bonds.

40 :163. PERSONNEL MANAGEMENT. *2 credits.*

Prerequisite, 61. Organization and function of personnel department; problems and technique in selection and placement of employees by interviewing and psychological tests; evaluation of the need for and use of training in industry; and the many employee services necessary to a sound and comprehensive personnel program.

40 :171. BUSINESS FINANCE. *3 credits.*

Prerequisite, 22 and 6 hours of Economics. Principles and practices used in financing large and small organizations. Forms of organization, raising of capital by means of stocks and bonds, investing the capital in fixed and working assets, conservation of capital, failures and reorganization.

40 :172. INVESTMENTS. *3 credits.*

Prerequisite, 171. Formulation of investment policies for various types of individual and institutional investors, consideration of principles and techniques applicable to analyzing securities of industrial corporations, railroad utilities and municipalities, and to development of workable criteria for the selection or rejection of issues.

40 :174. CREDITS AND COLLECTIONS. *2 credits.*

Prerequisite, 61 and 3 hours of Economics, or experience. Nature and fundamentals of credit, credit investigation and analysis, credit and collection operations, collection aids and problems.

40 :176. BANKING PRACTICE AND MANAGEMENT. *3 credits.*

Prerequisite, 171. Surveys work of the more important credit institutions, including commercial banks, finance companies, savings banks and consumer credit, and government credit agencies. Role of each type of institution in the economic system. Function of bank reserves; bank portfolio policy; capitalization and earning power; impact of public policy upon organization, structure, and operation of the credit system.

40 :183. MARKETING. *3 credits.*

Prerequisite, 6 hours of Economics. Functions involved in marketing goods and services, distribution channels, buying behavior, retailer and wholesaler characteristics, marketing cost factors, price and brand problems, and marketing legislation.

40 :185. PRINCIPLES OF ADVERTISING. *3 credits.*

Prerequisite, 61 and 3 hours of English. Study of place, objectives, and tools of modern advertising. Creation and development of a campaign based upon research and trade requirements.

40 :186. ADVANCED ADVERTISING. *3 credits.*

Prerequisite, 185. Advertising problem analysis and creation of layouts and copy.

40 :187. RETAIL ADVERTISING. *Evening session. 2 credits.*

A course for the student who has had Advertising 185 or store experience. Newspaper, radio, and other media for retail stores will be studied. Advertising, budgets, planning and writing copy, layouts for newspaper, direct-mail pieces, and other promotional media.

40 :189. PURCHASING. *2 credits.*

Prerequisite, 3 hours of Economics. Includes the individual phase of purchasing, its significance, scope, procedure, and such topics as buying the right quality, inspection, quantity control, sources, and assurance of supply.

40 :192. RETAILING. *3 credits.*

Prerequisite, Junior standing or consent of instructor. Management of retail operations, determination of merchandising requirements, buying, display, advertising, selling, store housekeeping, and operations control.

40 :247. ADVANCED STATISTICS. *3 credits.*

Prerequisite, 40:147. Emphasis is placed upon the analysis of time series, dispersions, correlations, and the reliability of estimates. The application of statistical techniques to such fields as quality control, operations research, linear programming is also considered.

40 :264. PERSONNEL RELATIONS. *3 credits.*

Prerequisite, 163 or equivalent. Relations with one's immediate superior, securing approval of one's idea in an organization, introducing changes with minimum of friction, selecting subordinates, maintaining morale and interest, importance of recognition, problems of discipline, adjusting individual and group grievances.

40 :268. BUSINESS POLICY. *3 credits.*

Prerequisite, final semester Senior standing. Required of all Business Administration majors. Philosophy of scientific management; evaluation of objectives and aims of management; policy requirements in terms of external and internal factors of business; use of statistical, cost, and other tools in the determination of sales, financial, personnel, expansion, and control problems.

40 :277. SECURITY ANALYSIS. *3 credits.*

Prerequisite, 272. Comparative study of organized security markets. Principles and practices of organized stock exchanges and over-the-counter markets. Protecting the public interest through regulation and control of promotions, the issue of securities, underwriting practices, and stock-trading practices.

40 :279. PROBLEMS IN FINANCE. *3 credits.*

Prerequisite, 171. Financing of large corporations. Use of different types of securities as instruments of finance; internal financing by reserve accruals and by retention of net income; mergers, consolidation; and holding syndicates; influence of taxation on corporate policy; and reorganization under the Federal Bankruptcy Act.

40 :287. SALES PROMOTION. *2 credits.*

Prerequisite, 185. Sales promotion programs formulated and executed; student will be expected to create and set up folders, booklets, catalogs, merchandise displays, etc.

40 :291. SALES ADMINISTRATION. *3 credits.*

Prerequisite, 183. Place of distribution in marketing scheme; determination of marketing objectives and policies, and their implementation and control.

40 :293. PROBLEMS IN MARKETING. *3 credits.*

Prerequisite, 291 or its equivalent. Problems involved in determining marketing channels, methods, and sales are applied to specific situations.

40 :296. MARKET ANALYSIS. *3 credits.*

Prerequisite, 183. A study of the objectives, techniques, and methods of analyzing market behavior and market forces.

40 :297-298. SEMINAR. *Each semester. 1 credit.*

## GRADUATE STANDING

40 :350. ADMINISTRATING COSTS AND PRICES. *3 credits.*

The purpose of the course will be to provide an understanding of the techniques used by managers in reaching both short- and long-run decisions in these areas. The course will explore the areas of decision-making on costs and prices which determine business profitability.

40 :366. MANAGEMENT — BEHAVIOR AND METHODS. *3 credits.*

Consideration is given to the sociological and anthropological backgrounds determining group organization, behavior, and motivation. Emphasis is placed on the dynamics of control, direction, communication, and coordination.

40 :369. ORGANIZATIONAL THEORY AND POLICY FORMULATION. *3 credits.*

Following a critical examination of the development of organizational theory, the principles of organization and scale will be critcially evaluated and trends noted. The latter half of the course will be devoted to the investigation and solution of complex case problems involving competitive behavior, internal controls, and industry and government business relationships.

40 :374. FINANCIAL MANAGEMENT AND POLICY. *3 credits.*

Working Capital Management, Controlling Inventory Investments, Administering Costs and Funds, Managing Investment in Plant and Equipment, Administering Business Income, and Forecasting for Financial Management.

40 :390. MARKETING MANAGEMENT AND POLICY. *3 credits.*

Company functions in relation to demand and consumer factors and the cost and operational elements that determine profitable operation. The corporate and integrated viewpoints are emphasized. Quantitative analysis and programming are considered.

40 :398. SEMINAR IN GENERAL BUSINESS. *3 credits.*

Research projects, group reports and discussions.

## ACCOUNTING

### GENERAL COLLEGE

*39 :21-22. ACCOUNTING. *Each semester. 3 credits.*

Elementary Accounting background for study of business. Journalizing, posting, preparation of working papers, construction and analysis of financial statements. Assets, liabilities, net worth, income, expenses, books of entry, controlling accounts, voucher system, partnership and corporation problems.

*39 :27. COST ACCOUNTING. *3 credits.*

Prerequisite, 22 or 121 and 3 hours of Economics. Theory and practice of Accounting for material, labor, and overhead expenses with particular reference to controlling manufacturing costs.

39 :43-44. INTERMEDIATE ACCOUNTING. *Each semester. 3 credits.*

Prerequisite, 22. Required of Accounting majors. Intensive analysis of balance sheet accounts, working papers, and financial statements.

### UPPER COLLEGE

39 :121. ACCOUNTING SURVEY. *3 credits.*

No prerequisite. Organized for engineers and other non-accounting majors who want an understanding of Accounting fundamentals. Clerical work is minimized. Industrial Management students may meet the Accounting requirements by completing Accounting 121 and 27.

39 :123. BUDGETING. *3 credits.*

Prerequisite, 27 or 121. Sales, production, and distribution budgets; comparison of budget with financial statements; accounting problems involved.

39 :124. MANAGERIAL ACCOUNTING. *3 credits.*

Prerequisite, Accounting 22 and 3 hours of Economics. For non-accounting majors only. Interpretation of accounting data in granting credit, effecting necessary control of business operations, and in formulating business policy.

39 :228. ADVANCED COST ACCOUNTING. *3 credits.*

Prerequisite, 27. Emphasis on standard cost procedure and other advanced cost accounting problems.

39 :230. ACCOUNTING SYSTEMS. *3 credits.*

Prerequisite, 44 and permission of instructor. Systematizing order, billing, accounts receivable, accounts payable, payrolls, and various distribution procedures. Field trips and term project.

39 :231-232. ADVANCED ACCOUNTING. *Each semester. 3 credits.*

Prerequisite, 44. First semester deals with partnerships, consignments, installment sales, insurance, estates and trusts, receiverships, and correction of statements and books. Second semester deals with branch accounting and consolidated statements. Accounting 232 may be taken before Accounting 231.

39 :233-234. TAXATION. *Each semester. 3 credits.*

Prerequisite, 44. First semester deals with the current tax law as it applies to individual and proprietorship. Second semester discusses federal income tax problems of partnerships and corporations and includes a survey of state and local taxes. Accounting 233 is a prerequisite for 234.

*Accounting 121 and 123 may be taken by advanced and qualified students in place of 21, 22, and 27.

39 :236. ACCOUNTING PROBLEMS. *3 credits.*

Prerequisite 44 and permission of instructor. Individual research on an advanced accounting problem in area of student's particular interest.

39 :237-238. AUDITING. *3 credits each semester.*

Prerequisite, 44. A study of the problems of the auditor as a member of the staff (internal) and as an external or public accountant, with particular emphasis on auditing standards and procedures. Required of accounting majors. Accounting 237 is a prerequisite for 238.

39 :299. CPA PROBLEMS. *4 credits.*

Prerequisites, 229, 231, 232, 233, and approval of instructor. Application of accounting and auditing theory through the study of selected problems. CPA examination techniques and procedures.

GRADUATE STANDING

39 :321. ADVANCED ACCOUNTING THEORY. *3 credits.*

This course invites a critical examination of accounting concepts and standards. The controversial aspects of these and other problems are considered in the light of terminology, the limitation of concepts and statutory requirements, and current trends.

39 :327. ACCOUNTING MANAGEMENT AND CONTROL. *3 credits.*

Emphasis is placed on the role of accounting as a tool of management planning and control in the areas of production, finance, marketing, and general administration.

39 :398. SEMINAR IN ACCOUNTING. *3 credits.*

Research projects, group reports and discussions.

## INDUSTRIAL MANAGEMENT

UPPER COLLEGE

42 :101. INDUSTRIAL PLANTS. *3 credits.*

Prerequisite, 62 and 3 hours of Economics. Production flow problems in basic industries, plant location, production analysis, plant layout, material handling and storage.

42 :107. INDUSTRIAL SAFETY. *2 credits.*

Prerequisite, 62. Causes of accidents, fundamentals of accident prevention, maintenance of health standards, safety organization.

42 :109. MAINTENANCE OF PLANTS AND EQUIPMENT. *2 credits.*

Prerequisite, 101. Power metering; inspection, cleaning lubrication and repair of equipment; estimating control of maintenance costs.

42 :166. MOTION AND TIME STUDY. *4 credits.*

Prerequisite, 62. Industrial application of motion study; process analysis; principles of motion economy; micromotion study; film analysis and group motion studies. Analysis techniques, time recording equipment; time study procedure; leveling and rating, fatigue; ratio delay and standard data method.

42 :167. MOTION STUDY. *2 credits.*

Evening Division. First half of course 40 :166.

42 :168. TIME STUDY. *2 credits.*

Evening Division. Second half of course 40 :166.

42 :169. JOB EVALUATION AND MERIT RATING. *2 credits.*

Prerequisite, 163 and 6 hours of Economics or its equivalent. Job descriptions; installing and maintaining the plan; determining the wage scale; types of merit rating and developing a merit rating plan.

42 :203. PRODUCTION PLANNING AND CONTROL. *3 credits.*

Prerequisite, Senior standing or Instructor's permission. Production planning and forecasting; centralized production control; scheduling; routing and dispatching; types of manufacture in relation to types of production control. Representative systems of production control.

42 :205. QUALITY CONTROL. *3 credits.*

Prerequisites, 101 and 148 or Instructor's permission. Quality control and inspection in the organization structure; the inspection function; collection and use of inspection data; application of statistical methods to quality control and use of control charts.

42 :256. INDUSTRIAL MANAGEMENT PROBLEMS. *Either semester. 3 credits.*

Prerequisite, 203 and 205 and Senior standing. Modern practices and principles applied to an actual problem from industry.

42 :260. THE ECONOMICS AND PRACTICE OF COLLECTIVE BARGAINING *3 credits.*

Prerequisite, 164, 106 or their equivalent. Meaning, process, principles, and organization of collective bargaining; collective bargaining agreements; issues presented in labor disputes and settlements dealing with union status and security, wage scales, technological changes, production standards, etc. Administered jointly by Economics and Commerce Departments.

### GRADUATE STANDING

42 :307. MANUFACTURING ANALYSIS. *3 credits.*

This course develops an approach to the handling of manufacturing problems and explores such production management functions as process analysis and organization, the control of production operations, inspection, plant lay-out, production planning, and control. The course integrates management and economic principles governing production.

42 :363. INDUSTRIAL RELATIONS. *3 credits.*

The purpose of the course is to present the rights and duties of management in dealing with labor. Intensive study will be made in selected areas of personnel administration. The course will deal with administrative activity in terms of human relationships involved.

42 :398. SEMINAR IN INDUSTRIAL MANAGEMENT. *3 credits.*

Research projects, group reports and discussions.

## SECRETARIAL SCIENCE

### GENERAL COLLEGE

43 :23. SECRETARIAL PROCEDURE. *Either semester. 2 credits.*

Fundamental principles and procedures which relate to the secretarial position.

43 :25. MACHINE AND SLIDE RULE CALCULATION. *Either semester. 1 credit.*

Techniques of machine and slide rule calculation as applied to business. Credit is not allowed both for this course and for Filing and Machine Calculation 26.

43 :27. FILING SYSTEMS. *Either semester. 2 credits.*

Thorough treatment of all basic filing systems.

43 :31. TYPEWRITING (Non-Secretarial). *Either semester. 2 credits.*

Intended primarily for those who can devote only one semester to this subject. Credit not allowed for this course and also 51.

43 :35. BUSINESS ENGLISH. *Either semester. 2 credits.*

Fundamentals of English, its use in business world.

43 :41-42. SHORTHAND. *Evening session. Each semester. 3 credits.*

Gregg shorthand theory completed, transcription introduced, and general dictation given. No credit for first semester only. Typewriting 52 or equivalent must precede or accompany Shorthand 42.

43 :46. SHORTHAND REVIEW. *Second semester. 3 credits.*

Thorough review of Gregg shorthand theory, covering one year's work. Credit not allowed for this course and also 41-42.

43 :51-52. TYPEWRITING. *2 credits each semester.*

Fundamentals of typewriting, including drill, placement, letters, tabulations, preparation of reports, etc.

43 :56. TYPEWRITING REVIEW. *Second semester. 2 credits.*

Thorough review of typewriting, covering one year's work. Credit not allowed for this course and also 51-52.

43 :65. SHORTHAND. *First semester. 4 credits.*

Prerequisite, Typewriting 51 unless taken concurrently. Gregg Shorthand Theory is covered. No credit unless second semester is completed satisfactorily.

43 :66. SHORTHAND. *Second semester. 5 credits.*

Prerequisite, Shorthand 65. Typewriting 52 or equivalent must precede or accompany. Introduction of machine transcription and general dictation. Speed attainment: 80 to 100 words per minute.

43 :67. SHORTHAND. *First semester. 5 credits.*

Prerequisite, Shorthand 66 and Typewriting 52 or equivalent. Vocabulary building, general dictation on letters and articles. Speed attainment: 100 to 120 words per minute.

43 :68. SHORTHAND. *Second semester. 5 credits.*

Prerequisite, Shorthand 67. Secretarial Training 74 must precede or accompany. Letters, articles, and Congressional Record material. Speed attainment: 120 to 140 words per minute.

43 :74. SECRETARIAL TRAINING. *Either semester. 2 credits.*

Prerequisite, 62 and 52 or equivalent. Advanced typewriting, transcription, business forms, duplicating processes, dictating and transcribing machines.

43 :83-84. SHORTHAND. *Evening session. Each semester. 3 credits.*

Prerequisite, 42 and 58. Vocabulary building, general dictation on letters and articles. Speed attainment: 80-100 words per minute.

43 :85. SHORTHAND. *First semester. Evening session. 3 credits.*

Prerequisite, 84. Vocabulary building; dictation on letters, articles and Congressional Record material. Speed attainment: 100-110 words per minute.

43 :93. BUSINESS LETTERS. *Either semester. 2 credits.*

Principles and practice in writing of business letters.

43 :95-96. OFFICE MANAGEMENT AND PRACTICES. *Evening session. Each semester. 2 credits.*

Office functions and principles involved in office management, adapted for adults with office experience. Credit not allowed for this course and also 296.

## UPPER COLLEGE

43 :133. BUSINESS CORRESPONDENCE. *Either semester. 3 credits.*

Prerequisite, English 2. Advanced treatment of business letter writing including extensive outside reading and reports. Credit not allowed for this course and also 93.

43 :186. SHORTHAND. *Second semester. Evening session. 3 credits.*

Prerequisite, 85. Abbreviated vocabulary, dictation on letters and Congressional Record material. Speed attainment: 110-120 words per minute.

43 :187. SHORTHAND. *Evening session. 3 credits. each semester.*

Prerequisite, 186. Letters, articles, Congressional Record material, and lectures. Speed attainment: 120-140 words per minute. Given 1957-58 and alternate years thereafter.

43 :293-294. OFFICE PRACTICE. *Each semester. 3 credits.*

Prerequisites, 25, 27, 66, and 74. Fundamental principles and procedures which relate to the secretarial position; laboratory work on duplication machines, transcribing, and dictating machines; filing, general secretarial duties, office experience.

43 :296. OFFICE ORGANIZATION AND MANAGEMENT. *Second semester, 3 credits.*

Prerequisite, Commerce 61. Individual projects relating to analyses of various aspects of the office and to problems involved in office management.

## U.S. ARMY ROTC
### MILITARY SCIENCE AND TACTICS

11-12. FIRST YEAR BASIC MILITARY SCIENCE. *Each semester. 1½ credits.*
Three 1-hour classes each week. Required of Freshmen not taking 13-14.

43-44. SECOND YEAR BASIC MILITARY SCIENCE. *Each semester. 1½ credits.*
Prerequisite, 12.

101-102. FIRST YEAR ADVANCED MILITARY SCIENCE. *Each semester. 3 credits.*
Prerequisite, 44.

111-112. FIRST YEAR ADVANCED MILITARY SCIENCE. *Each semester. 1½ credits.*
For Prejunior Cooperative Engineering Students. Prerequisite, 44.

121-122. FIRST YEAR ADVANCED MILITARY SCIENCE. *Each semester. 1½ credits.*
For Junior Cooperative Engineering Students. Prerequisite, 112.

123. SECOND YEAR ADVANCED MILITARY SCIENCE. *1½ credits.*
Summer term or Fall. For Cooperative Engineering Students. Prerequisite 122.

141. SECOND YEAR ADVANCED MILITARY SCIENCE. *1½ credits.*
For Senior Cooperative Engineering Students. Prerequisite, 123.

151-152. SECOND YEAR ADVANCED MILITARY SCIENCE. *Each semester. 3 credits.*
For Seniors. Prerequisite, 102, Cooperative Engineers, 141.

## U.S. AIR FORCE ROTC
### AIR SCIENCE

13-14. BASIC AIR SCIENCE. *Each semester. 1½ credits.*
Three 1-hour classes each week. Required of Freshmen not taking 11-12.

53-54. SECOND YEAR BASIC AIR SCIENCE. *Each semester. 1½ credits.*
Prerequisite, 14. 43-44 or 53-54 is required of second year men.

103-104. ADVANCED AIR SCIENCE. *Each semester. 3 credits.*
Prerequisite, 54.

115-116. ADVANCED AIR SCIENCE. *Each semester. 1½ credits.*
Prerequisite, 54. For Pre-Junior Cooperative Engineering Students.

117. ADVANCED AIR SCIENCE. *1½ credits.*
Prerequisite, 116. For Junior Cooperative Engineering Students.

125-126. ADVANCED AIR SCIENCE. *Each semester. 1½ credits.*
Prerequisite, 117. For Junior Cooperative Engineering Students.

153-154. ADVANCED AIR SCIENCE. *Each semester. 3 credits.*
Prerequisite, 104. Full-time students.

155. ADVANCED AIR SCIENCE. *1½ credits.*
For first semester Senior Cooperative Engineering Students. Prerequisite, 126.

156. ADVANCED AIR SCIENCE. *3 credits.*
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