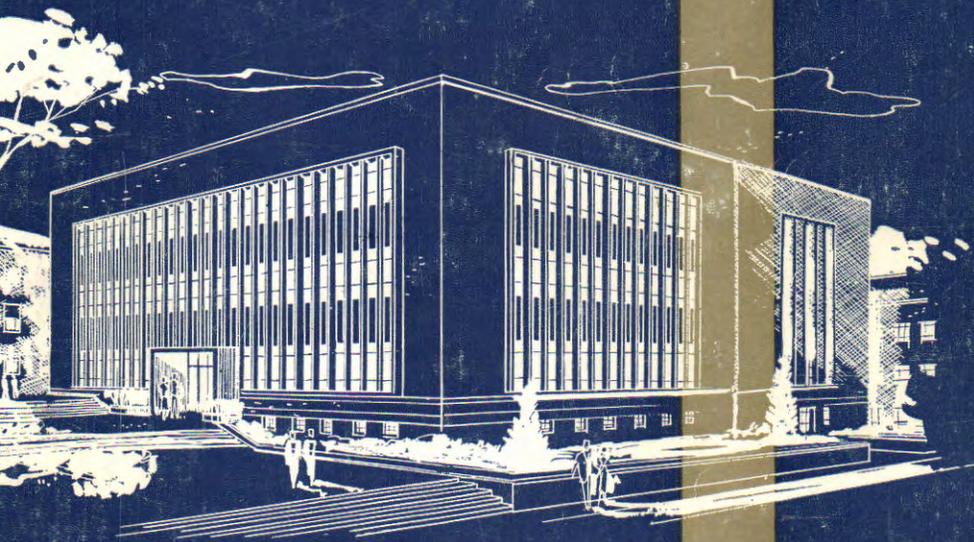


*Harvey Ellin*

# THE UNIVERSITY OF AKRON



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**AKRON, OHIO  
JANUARY 1, 1960**

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## UNIVERSITY CALENDAR

1960

January 4, Monday, 8 a.m. ....Classes resume.  
 January 25-29, Monday-Friday ..Final Examination Week.  
 February 1, Monday, 12 Noon ....Final grades due.

## SPRING SEMESTER

February 1-3, Monday-  
 Wednesday .....Orientation Program.  
 February 4-5, Thursday, Friday...Final Registration—Day.  
 February 6 and 8-10, Saturday  
 and Monday-Wednesday .....Evening Registration.  
 February 8, Monday, 8 a.m. ....Day Classes begin.  
 February 15, Monday .....Evening Classes begin.  
 February 22, Monday .....Washington's Birthday—Holiday.  
 April 4, Monday, 9 a.m. ....Mid-semester grades due.  
 April 9, Saturday, 5 p.m. ....Spring recess begins.  
 April 17, Sunday .....Easter.  
 April 18, Monday, 8 a.m. ....Classes resume.  
 May 27, Friday .....May Day.  
 May 30, Monday .....Memorial Day—Holiday.  
 June 6-10, Monday-Friday .....Final Examination Week.  
 June 11, Saturday, Noon .....Final grades due.  
 June 12, Sunday .....Baccalaureate.  
 June 13, Monday .....Commencement.

## SUMMER SESSION

June 14-17, Tuesday-Friday .....Summer Registration—Day.  
 June 17-18, Friday and  
 Saturday .....Summer Registration—Evening.  
 June 20, Monday .....Classes begin.  
 July 4, Monday .....Independence Day—Holiday.  
 July 9, Saturday .....Examination for candidates for graduate degree in  
 Education.  
 July 29, Friday .....Six weeks session ends.

## FALL SEMESTER

September 12-15,  
 Monday-Thursday .....Orientation Program; attendance  
 required of all new students.  
 September 14, 15, 16 .....Final Registration—Day  
 September 17 and 19-21  
 Saturday and Monday-  
 Wednesday .....Evening Registration.  
 September 19, Monday .....Day Classes begin.  
 September 26, Monday .....Evening Classes begin.



## BOARD OF DIRECTORS

TERM EXPIRES DECEMBER 31, 1961

LEE 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

TERM EXPIRES DECEMBER 31, 1965

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

## OFFICERS FOR 1960

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*  
 DONFRED H. GARDNER, M.A. .... *Vice President and Dean of Administration*  
 LESLIE P. HARDY, M.S.ED. .... *Financial Vice President*  
 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*  
 CHESTER T. MCNERNEY, PH.D. .... *Dean of the College of Education*  
 WARREN W. LEIGH, PH.D. .... *Dean of the College of Business Administration*  
 STANLEY A. SAMAD, LL.M. .... *Dean of the College of Law*  
 DOMINIC J. GUZZETTA, PH.D. .... *Dean of the General College  
 and Director of the Summer Session*  
 WILLIAM A. ROGERS, ED.M. .... *Acting Dean of the Evening  
 and Adult Education Division*  
 CECIL A. ROGERS, B.S.BUS.ADM. .... *Treasurer*  
 GORDON A. HAGERMAN, B.A. .... *Registrar*  
 DOROTHY HAMLEN, B.A., B.S.L.S. .... *Librarian*  
 GEORGE W. BALL, A.B. .... *Director of University Relations*  
 CARL L. HALL, B.S.BUS.ADM. .... *Bursar*  
 L. L. SMITH, M.A. .... *Director of the Institute for Civic Education*  
 RICHARD HANSFORD, M.A.ED. .... *Director of Student Personnel*  
 A. LINCOLN FISCH, M.S. .... *Assistant Director of Student Personnel*  
 ROBERT C. BERRY, B.S.BUS.ADM. .... *Adviser of Men*  
 MRS. PHYLLIS PAUL, M.A. .... *Adviser of Women*  
 JOHN M. DENISON .... *Assistant Director of University Relations*  
 KENNETH D. BUSHNELL, B.A.ED. .... *Director of Alumni Relations*  
 EBBA LARSON .... *Assistant Registrar*  
 ROBERT W. LARSON, B.S.BUS.ADM. .... *Assistant Registrar*  
 MARVIN E. WALKER, B.S.BUS.ADM. .... *Assistant Registrar*  
 STUART M. TERRASS, B.A., B.S. .... *Assistant Adviser of Men*  
 ARTEMIS STRATOS, B.A. .... *Assistant Adviser of Women*  
 MRS. KATHRYN KIMBLE, B.S. .... *Director of the Student Center*  
 ALLAN HALL, B.A. .... *Assistant to the Dean of the Evening Division*  
 DONALD BOWLES, B.S., B.A.ED. .... *Acting Purchasing Agent*  
 CHARLES BLAIR, A.B. .... *Head of the University News Bureau*  
 ULYSSES S. VANCE, B.A. .... *University Editor*  
 MARY H. WILSON, B.S. .... *Manager of the Cafeteria*  
 EARL DEVOE .... *Superintendent of Buildings and Grounds*  
 ROBERT W. PAUL .... *Assistant Superintendent of Buildings and Grounds*  
 ALEX BANYAR .... *Manager of the Bookstore*

## UNIVERSITY FACULTY AND ASSISTANTS

1959-60

## 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; LL.D., University of Liberia, 1959.
- PAUL ACQUARONE**, *Professor of Botany and Geology* (1931)  
B.S., Pennsylvania State College; Ph.D., Johns Hopkins University, 1929.
- HOWARD W. ALLEN**, *Instructor in History* (1959)  
B.A., M.A., University of Chicago; Ph.D., University of Washington, 1959.
- FRANK T. ALUSOW**, *Assistant Professor of Speech* (February, 1956)  
B.A., Cornell College; M.A., State University of Iowa, 1941.
- 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.
- DONALD BECKER**, *Assistant Professor of Industrial Management* (1959)  
B.A., M.A., Oberlin College, 1948.
- 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.
- 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 R. BLACK**, *Assistant Professor of Economics* (1958)  
B.A., Carleton College; M.B.A., University of Chicago, 1947.
- CHARLES BLAIR**, *Director, University News Bureau* (April, 1959)  
B.A., The University of Akron, 1955.
- 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., M.S., University of Michigan, 1950.
- FREDERICK J. BUCHE**, *Professor of Polymer Physics and Research Associate in the Institute of Rubber Research* (1959)  
B.S., University of Michigan; Ph.D., Cornell University, 1948.
- \*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.
- KENNETH D. BUSHNELL**, *Director of Alumni Relations*, (January, 1960)  
B.A.Ed., The University of Akron, 1954.
- \*\*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.

- ANIL K. CHATTERJEE, *Assistant Professor of Mechanical Engineering* (1958)  
B.M.E., University of Jadavpur; M.S., Virginia Polytechnic Institute; M.S.M.E., University of Minnesota, 1956.
- 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.
- NANCY DEAN, *Instructor in Education and Administrative Assistant in the Institute for Civic Education* (January, 1960)  
B.A., M.A., Ohio University, 1955.
- \*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, *Assistant Director of University 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.
- \*\*ELMER ENDE, *Associate Professor Emeritus of Music* (1930)  
B.Mus., American Conservatory of Music, Chicago; M.A., Ohio State University, 1930.
- HOWARD R. EVANS, *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.
- WILLIAM R. FELDMAN, *Assistant Professor of Chemistry* (1959)  
B.S., The University of Akron; Ph.D., Yale University, 1957.
- A. LINCOLN FISCH, *Assistant Director of Student Personnel* (1958)  
B.A., Ohio Wesleyan University; M.S., University of Wisconsin, 1950.
- \*\*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.

\*Retired June, 1951.

\*\*Retired June, 1957.

§Leave of absence, 1959-60.

- MORRIS FREILICH, *Instructor in Sociology*, (1959)  
B.A., Brooklyn College, 1952.
- DONFRED H. GARDNER, *Vice President and Dean of Administration and Professor of History* (1924)  
B.A., M.A., Princeton University, 1923.
- WILLIAM M. GLAZIER, *Assistant Professor of Civil Engineering* (1958)  
B.S.C.E., Michigan College of Mining and Technology; University of Michigan, M.S.C.E., 1956; P.E., Ohio and D.C.
- 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 GRÜNBERG, *Professor of Economics* (1946) (1956)  
A.M., Ph.D., University of Frankfurt, 1930.
- DOMINIC J. GUZZETTA, *Dean of the General College, 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.
- ALLAN W. HALL, *Assistant to the Dean of the Evening and Adult Education Division* (July, 1959)  
B.A., Baldwin-Wallace College, 1951.
- CARL L. HALL, *Bursar* (March, 1959)  
B.S.Bus. Adm., Ohio State University, 1950.
- 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.
- 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.
- ALAN J. HARMATA, *Assistant to the Director of the Institute for Civic Education* (February, 1960)  
B.A.Ed., The University of Akron, 1958.
- H. JAMES HARWOOD, *Assistant Professor of Chemistry and Research Associate in the Institute of Rubber Research* (October, 1959)  
B.S., The University of Akron; Ph.D., Yale University, 1956.
- ELIZABETH J. HITTLE, *Assistant Professor of Speech* (1950)  
B.S.Ed., The University of Akron; M.A., Kent State University, 1949.
- DOROTHY HOCKEY, *Assistant Professor of English* (1959)  
B.A., M.A., Ph.D., Western Reserve University, 1947.
- 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.
- 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, *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.

\*Retired June, 1951.

\*\*Retired June, 1950.

- 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, *Associate Professor of Education* (1956)  
B.S., College of Wooster; M.S., Ph.D., University of Wisconsin, 1956.
- EDWARD W. JONES, *Associate Professor of Geography* (January, 1944)  
B.S., Western Reserve University; M.A., Kent State University, 1940.
- ROBERT KATZENMEYER, *Assistant Professor of Accounting* (1958)  
B.S., M.B.A., Kent State University, 1954; C.P.A., Ohio.
- DON A. KEISTER, *Professor of English* (1931)  
B.A., M.A., The University of Akron; Ph.D., Western Reserve University, 1947.
- 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., *Associate 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.
- MRS. KATHRYN KIMBLE, *Director of Student Center* (February, 1959)  
B.S., University of Illinois, 1951.
- DAVID KING, *Associate Professor of Political Science* (1927)  
B.A., Maryville College; M.A., University of Chicago, 1925.
- GEORGE W. KNEPPER, *Associate Professor of History* (August, 1954)  
B.A., The University of Akron; M.A., Ph.D., University of Michigan, 1954.
- \*WALTER C. KRAATZ, *Professor Emeritus 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.
- ROBERT W. LARSON, *Assistant Registrar* (August, 1958)  
B.S.Bus.Ad., The University of Akron, 1946.
- 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.
- MRS. MARGARET LEFEVRE, *Assistant Professor of Speech* (February, 1959)  
B.A., Western Michigan University; M.A., University of Minnesota; Ph.D., Western Reserve University, 1957.
- 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.
- JACK R. LENGYEL, *Instructor in Physical Education* (1959)  
B.S.Ed., The University of Akron, 1958.
- 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; Ph.D., Ohio State University, 1959.
- GEORGE M. MCMANMON, *Associate Professor of Business Administration* (1959)  
B.A., Syracuse University; M.B.A., Harvard Business School; D.S.S., Syracuse University, 1958.

\*Retired, June, 1959 (Emeritus, 1958).

†Resigned, February 1, 1960.

- JOSEPH H. McMULLEN, *Associate Professor of Physical Education* (June, 1954)  
Sc.B., B.A., Brown University; M.S., Westminster College, 1952.
- CHESTER T. McNERNEY, *Dean of the College of Education and Professor of Education*  
(July, 1959)  
B.S., M.S.Ed., Ph.D., Indiana University, 1949.
- JOHN A. MacDONALD, JR., *Instructor in Music* (1959)  
B.Music Ed., Oberlin College; M.A.Musicology, University of Michigan, 1957.
- HOWARD MAHER, *Associate Professor of Psychology* (1959)  
A.B., M.A., Temple University; Ph.D., Ohio State University, 1954.
- MRS. JOHANNA MALLY, *Instructor in Home Economics* (1959)  
B.S., Western Reserve University, 1923.
- 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.
- RICHARD C. MARSHALL, *Assistant Professor of Law* (1959)  
LL.B., Akron Law School, 1954.
- 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 of 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, 1939.
- MRS. GAY L. NOKES, *Instructor in Physical Education* (1958) (1959)  
B.S., Michigan State University, 1956.
- \*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.
- EDWARD A. PAUL, *Assistant Professor of 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.
- CHARLES F. POSTON, *Associate Professor of Finance* (1959)  
B.A., Eastern Illinois State College; M.A., University of Illinois; Ph.D., University of North Carolina, 1959.
- JOHN W. PULLEYN, JR., *Instructor in Modern Languages* (1957)  
B.A., M.A., University of Minnesota, 1950.
- MRS. MARY B. PULLEYN, *Instructor in English* (1958)  
B.A., M.A., University of Minnesota, 1952.
- 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, *Assistant Professor of History* (1955)  
B.A., M.A., Ph.D., State University of Iowa, 1957.

\*Retired, August, 1956.

\*\*Retired, June, 1955.

§Leave of absence, 1959-60.

- MABEL RIEDINGER, *Professor of Education* (February, 1947)  
B.A., Mt. Union College; M.A., University of Chicago; Ed.D., Columbia University, Teachers College, 1946.
- MARGARET E. RIFFILE, *Assistant Dietitian* (1959)  
B.A., The University of Akron, 1951.
- EDGAR C. ROBERTS, *Assistant Professor of English* (1926)  
B.S.Ed., M.A., Ohio State University, 1924.
- HOWARD S. ROBERTSON, *Instructor in Modern Languages* (1959)  
B.A., McMaster University (Hamilton, Ontario); M.A., Ph.D., Indiana University, 1960.
- \*CLARA G. ROE, *Professor Emeritus 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.Ad., The University of Akron, 1932.
- WILLIAM A. ROGERS, *Acting Dean of the Evening and Adult Education Division, and Assistant Professor of Education* (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.
- WILMA RUMAN, *Instructor in Physical Education* (1959)  
B.S.Ed., The University of Akron; M.A., Columbia University, Teachers College, 1950.
- STANLEY A. SAMAD, *Dean of the College of Law and Professor of Law* (1959)  
B.A., LL.B., University of Cincinnati; LL.M., Western Reserve University, 1959.
- 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., Ph.D., Radcliffe College, 1958.
- \*\*\*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.
- MRS. LUCY T. SELF, *Assistant Professor of Secretarial Science* (February, 1933)  
B.A., Ohio Wesleyan University, 1920.
- ELMER J. SELMAN, *Assistant Professor of Law* (1959)  
B.A., LL.B., Western Reserve University, 1947.
- 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.
- 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.
- 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.

\*Retired, June, 1959.

\*\*Retired, July, 1955.

\*\*\*Retired, June, 1954.

- 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 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 Emeritus of Electrical Engineering* (1925)  
B.S.E.E., Purdue University, 1917; P.E., Ohio.
- DANIEL SONENSHINE, *Instructor in Biology* (1959)  
B.A., City College of New York; Ph.D., University of Maryland, 1959.
- 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, *Assistant Professor of English* (1950)  
B.A., M.A., Dalhousie University, Halifax, N.S.; Ph.D., Western Reserve University, 1959.
- ARTEMIS O. STRATOS, *Assistant Adviser of Women* (August, 1959)  
B.A., The University of Akron, 1957.
- THOMAS SUMNER, *Columbia-Southern Professor of Chemistry* (1950)  
B.S., Ph.D., Yale University, 1951.
- LEONARD SWEET, *Assistant Professor of Mathematics* (1959)  
B.A.Ed., The University of Akron; M.Ed., Kent State University, 1954.
- ERNEST A. TABLER, *Associate Professor of Mathematics* (1935)  
B.S., Kent State University; M.A., Western Reserve University, 1933.
- WILLIAM M. TAYLOR, *Associate Professor of Psychology* (1959)  
B.A., Georgetown College (Ky.); M.S., Ph.D., Purdue University, 1953.
- 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.
- EDGAR A. TOPPIN, *Assistant Professor of History* (1959)  
B.A., M.A., Howard University; Ph.D., Northwestern 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.
- 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, 1950; University of Lausanne (Switzerland), Certificate in French Studies, 1947.
- EDWIN E. WAGNER, *Assistant Professor of Psychology* (1959)  
B.A., M.A., Ph.D., Temple University, 1959.
- MARVIN E. WALKER, *Assistant Registrar* (November, 1959)  
B.S.Bus.Adm., The University of Akron, 1957.
- MRS. ANNETTE K. SEERY WALLACE, *Assistant Professor of Economics* (1951)  
B.A., Mount Holyoke College; M.A., Washington University, 1947.
- JOHN STEWART WATT, *Associate 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.
- \*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; D.Sc., The University of Akron, 1958.

\*Retired, June, 1959.

\*\*Retired, June 1952.

- §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.
- \*\*EARL R. WILSON, *Associate Professor Emeritus 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.
- DARREL E. WITTERS, *Assistant Professor of Music* (1941)  
B.S.Ed., Bowling Green State University; M.S.Ed., The University of Akron, 1958.

## LIBRARY

- DOROTHY HAMLIN, *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 Assistant Professor of 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)  
B.S.Bus.Ad., The University of Akron, 1959.
- MRS. BARBARA CLARK, *Acting Cataloger* (September, 1948)  
B.A., The University of Akron, 1950.
- MRS. RUTH CLINEFELTER, *General Periodicals Librarian and Assistant Professor of Bibliography* (June, 1952)  
B.A., M.A., The University of Akron, 1953; M.S.L.S., Kent State University, 1956.
- MRS. PATRICIA DREYFUSS, *Rubber Division Librarian* (1959)  
B.S., University of Rochester, 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.
- MRS. JOANNA SPRIGG, *Science and Technology Librarian* (February, 1957)  
The University of Akron.
- MRS. HELEN THORNBURG, *Serials Librarian and Instructor in Bibliography* (August, 1959)  
B.A., College of William and Mary; M.S.L.S., Western Reserve University, 1959.

## UNIVERSITY HEALTH SERVICE

- WILLIAM REYNOLDS, M.D., *University Physician* (February, 1956)  
M.D., Wake Forest, 1948.
- MRS. EMMA HENRY, R.N., *University Nurse* (1935) (1950) (1959)  
Akron City Hospital, 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.

\*Retired, June, 1953.

\*\*Retired, June, 1958.

\*\*\*Retired, June, 1955.

§Leave of absence, 1959-60.

- 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; D.Sc., The University of Akron, 1948.
- EDGAR E. BOSTICK, *Postdoctoral Fellow and Instructor in Polymer Chemistry* (July, 1956)  
B.S., Alabama Polytechnic Institute; Ph.D., The University of Akron, 1959.
- FRED J. BUCHE, *Research Associate and Professor of Polymer Physics* (September, 1959)  
B.S., University of Michigan; Ph.D., Cornell University, 1948.
- H. JAMES HARWOOD, *Research Associate and Assistant Professor of Chemistry* (October, 1959)  
M.S., The University of Akron; Ph.D., Yale University, 1956.
- §ALAN REMBAUM, *Research Associate and 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.
- KENNETH W. SCOTT, *Research Consultant* (November, 1958)  
B.S., University of Michigan; M.A., Ph.D., Princeton University, 1949.
- HOWARD L. STEPHENS, *Administrative Assistant and Instructor in Rubber Chemistry* (1950)  
B.S., M.S., The University of Akron, 1950.
- VERNON R. ALLEN, *Research Chemist* (July, 1955)  
B.S., Tennessee Polytechnic Institute; M.S., The University of Akron, 1957.
- NISSIM CALDERON, *Research Chemist* (September, 1959)  
M.Sc., Hebrew University, Jerusalem, 1959.
- FREDERICK R. ELLS, *U. S. Rubber Fellow for 1959-60* (October, 1959)  
B.S., Lehigh University, 1956.
- ROBERT F. FEDORS, *Firestone Fellow for 1959-60* (September, 1958)  
B.S., Purdue University, 1955.
- LEWIS J. FETTERS, *General Tire Fellow for 1959-60* (September, 1959)  
B.A., College of Wooster, 1958.
- RAYMOND D. GATES, *Research Chemist* (October, 1958)  
B.S., M.S., The University of Akron, 1951.
- WILLIAM M. GIFFEN, *Research Chemist* (November, 1959)  
B.S., M.S., The University of Akron, 1956.
- FRANK N. KELLEY, *Goodyear Fellow for 1959-60* (June, 1958)  
B.S., M.S., The University of Akron, 1958.
- RUSSELL LIVIGNI, *National Science Foundation Fellow* (June, 1956)  
B.S., The University of Akron, 1956.
- JOSEPH F. MEIER, *Research Chemist* (January, 1959)  
B.S., John Carroll University, 1958.
- MRS. IR JA PIIRMA, *Research Chemist* (December, 1952)  
Diploma in Chemistry, Technische Hochschule of Darmstadt; M.S., The University of Akron, 1957.
- JAMES R. PURDON, *Research Chemist* (September, 1959)  
B.S., M.S., The University of Akron, 1955.
- ROBERT J. SAMUELS, *Research Chemist* (July, 1959)  
B.S., Brooklyn College; M.S., Stevens Institute of Technology, 1955.
- ROBERT W. SCHROCK, *Research Chemist* (July, 1959)  
B.S., Capital University; M.S., Ohio State University, 1936.
- DANIEL P. SHINE, *Research Chemist* (September, 1957)  
B.S., M.S., Xavier University, 1957.
- RICHARD STEIN, *Research Chemist* (September, 1958)  
B.S., Pennsylvania State University, 1958.

#### 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 Professor* (August, 1956)  
B.A., Columbia University; M.A., Columbia University, Teachers College, 1947.
- ALAN J. HARMATA, *Assistant to the Director of the Institute for Civic Education* (February, 1960)  
B.A.Ed., The University of Akron, 1958.
- NANCY DEAN, *Administrative Assistant and Instructor in Education* (January, 1960)  
B.A., M.A., Ohio University, 1955.

§Leave of absence, 1959-60

## 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.
- MRS. MARGARET LEFEVRE, *Assistant Professor of Speech* (February, 1959)  
A.B., Western Michigan University; M.A., University of Minnesota; Ph.D., Western Reserve University, 1957.

## RESERVE OFFICERS' TRAINING CORPS

DEAN D. H. GARDNER, *Civilian Coordinator*  
1959-60

## ARMY

- HORACE D. HARBY, *Professor of Military Science and Tactics* (July, 1958)  
B.S., Clemson College, 1936; Lieutenant Colonel, Infantry.
- LOUIS T. D'AVANZO, *Assistant Professor of Military Science and Tactics* (October, 1958)  
B.A., St. Lawrence University, 1942; Captain, Corps of Engineers.
- GEORGE W. DAVIS, *Instructor in Military Science and Tactics* (May, 1959)  
Master Sergeant.
- CLINTON B. HADEN, *Assistant Professor of Military Science and Tactics* (June, 1958)  
Ohio State University; Captain, Infantry.
- CHARLES K. LIKENS, *Supply Sergeant* (June, 1959)  
Sergeant.
- WILLIAM J. MAHONEY, *Associate Professor of Military Science and Tactics* (August, 1955)  
B.S.Ed., Bowling Green State University; M.A., Ohio State University, 1941; Major, Artillery.
- JOHN T. MURRAY, *Instructor in Military Science and Tactics* (October, 1959)  
Master Sergeant.
- MARTIN J. SCHLUND, *Administrative Assistant* (August, 1959)  
Master Sergeant.
- JOHN H. STEELE, *Instructor in Military Science and Tactics* (June, 1957)  
Georgetown University; Kent State University; Master Sergeant.

## AIR FORCE

- GLENN C. THOMPSON, *Professor of Air Science* (June, 1959)  
B.S., U.S. Military Academy, 1935; Colonel, USAF.
- RAYMOND C. ANTONI, *Administrative Assistant* (August, 1959)  
Airman First Class, USAF.
- DONALD E. BURNS, *Supply Sergeant* (July, 1958)  
Staff Sergeant, USAF.
- GLEN C. CHILDS, *Assistant Professor of Air Science* (September, 1959)  
B.S., U.S. Military Academy, 1945; Major, USAF.
- EARL H. COLEMAN, *Assistant Professor of Air Science* (December, 1958)  
B.S., Bemidji State College (Minnesota), 1951; Captain, USAF.
- GEORGE R. DOWLING, *Administrative Assistant* (June, 1956)  
Master Sergeant, USAF.
- BENNETT K. HOISINGTON, *Administrative Assistant* (August, 1959)  
Airman First Class, USAF.
- EDWARD P. MCKINNEY, *Administrative Assistant* (August, 1957)  
Staff Sergeant, USAF.
- LEONARD B. REDD, *Assistant Professor of Air Science* (June, 1958)  
Alabama Polytechnic Institute; LL.B., Jones Law School, 1951; Major, USAF.
- FORD H. SMART, *Assistant Professor of Air Science* (April, 1958)  
B.A., Ohio Wesleyan, 1952; Captain, USAF.
- PETER STRICKER, *Assistant Professor of Air Science* (August, 1957)  
A.B., Mercer University, 1951; Captain, USAF.

## PART-TIME FACULTY

(Day and Evening Credit)

1959-60

- MRS. EDNA ARCHER, *Instructor in Art for the Grades*  
B.E., The University of Akron; M.A., Columbia University, 1939.
- EDGAR E. BOSTICK, *Instructor in Polymer Chemistry*  
B.S., Alabama Polytechnic Institute; Ph.D., The University of Akron, 1959.
- ROBERT B. COLE, *Instructor in Clarinet*  
B.S.E., The University of Akron, 1938.
- HARMON O. DEGRAFF, *Professor Emeritus of Sociology*  
B.A., M.A., State University of Iowa; Ph.D., University of Chicago, 1926.
- RAYMOND DEMATTIA, *Instructor in Flu'e*  
B.S.Ed., Kent State University; M.A., Columbia University, 1950.
- STANLEY R. DENGLER, *Instructor in Mathematics*  
B.A., M.A., The University of Akron, 1953.
- JOSEPH DI LAURO, *Instructor in Accounting*  
B.S., The University of Akron, 1955.
- PAUL H. DUNHAM, *Instructor in Industrial Management*  
A.B., Western Reserve University, 1947.
- JAMES G. FRANCE, *Instructor in Law*  
B.A., Brown University; LL.B., Yale University, 1941.
- WILLIAM E. GALLEHER, *Instructor in General Business*  
Senior Planning Engineer, The Goodyear Tire and Rubber Company.
- ANDREW B. GRIBLE, *Instructor in Industrial Management*  
B.S., The University of Akron, 1954.
- MRS. ADENA HANDWERK, *Instructor in Secretarial Science*  
B.A.Ed., The University of Akron, 1941.
- ALAN J. HARMATA, *Instructor in English*  
B.A.Ed., The University of Akron, 1958.
- HARRY H. HOLLINGSWORTH, *Instructor in General Business*  
B.S., The University of Akron; M.B.A., Northwestern University, 1950.
- MAURICE HOROWITZ, *Instructor in Physics*  
B.S., College of the City of New York; M.S., Ph.D., Ohio State University, 1953.
- MARTHA M. HOSFELT, *Instructor in English*  
A.B., The University of Akron, 1959.
- MRS. ROSALIND IRISH, *Instructor in English*  
B.S., B.A., The University of Akron; M.A., Columbia University, 1924.
- JOHN T. KIDNEY, *Instructor in Industrial Management*  
Retired 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.
- GEORGE LEUCA, JR., *Instructor in English*  
B.A., The University of Akron; M.A., Ph.D., Harvard University, 1951.
- CLARENZ LIGHTFRITZ, *Special Instructor in Piano*  
Bowling Green State University; private instruction with Ernest White and Miss Rena Wills.
- WALTER LIPPS, *Instructor in Education*  
B.E., The University of Akron, 1928.

- WILLIAM LONG, *Instructor in Percussion*  
Graduate, Eastman School of Music, 1948.
- PATRICIA LOWRY, *Teaching Fellow in English*  
A.B., The University of Akron, 1957.
- HAROLD F. MATHIS, *Instructor in Engineering*  
B.S., University of Oklahoma; M.S., Texas Agricultural and Mechanical College System;  
Ph.D., Northwestern University, 1953.
- EUGENE J. MEZEY, *Instructor in Chemistry*  
B.S., Ohio University; M.S., Ph.D., Ohio State University, 1957.
- MARY MOSTENIC, *Instructor in English*  
B.S.Ed., B.A., M.A., The University of Akron, 1951.
- MILTON NELSON, *Instructor in Trumpet*  
B.S.Ed., The University of Akron, 1949.
- 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*  
Juilliard School of Music.
- 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.
- ARTHUR REGINALD, *Instructor in Piano*  
New York University, Juilliard Graduate School of Music, Student of Madame Olga Samaroff.
- K. L. REYNOLDS, *Instructor in General Business*  
B.S., University of Illinois, 1927.
- KARL R. ROHRER, *Instructor in Engineering*  
B.S., The University of Akron, 1950.
- ROBERT B. ROMWEBER, *Instructor in Law*  
B.A., The University of Akron; LL.B., University of Michigan, 1931.
- DALE H. ROSS, *Instructor in English*  
B.A., The University of Akron, 1959.
- MRS. JULIET Z. SALTMAN, *Instructor in Sociology*  
B.A., Rutgers University; M.A., University of Chicago, 1948.
- LAWRENCE SCARPITTI, *Instructor in Violin*  
B.S.Ed., The University of Akron, 1954.
- KENNETH W. SCOTT, *Instructor in Chemistry*  
B.S., University of Michigan; M.A., Ph.D., Princeton University, 1949.
- ROBERT SHUFF, *Instructor in Law*  
B.A., Heidelberg College; LL.B., Western Reserve University, 1943.
- ROBERT J. SIMMONS, *Instructor in Accounting*  
B.A., The University of Akron; M.B.A., Kent State University, 1953.
- RONALD G. SNIDER, *Instructor in English*  
B.A., M.A., The University of Akron, 1954.
- JOHN F. STEIN, *Special Instructor in Voice*  
Private Instruction with Herbert Witherspoon, Enrico Rosati, and Maria Kurenko.
- 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.
- MRS. CATHRYN C. TALIAFERRO, *Instructor in English*  
B.A., The University of Akron; M.A., Radcliffe College, 1941.

- SUMNER VANICA, *Instructor in Education*  
B.A., M.A.Ed., The University of Akron, 1944.
- 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.
- EDWARD F. WAHL, *Instructor in Physics*  
B.S., M.S., Massachusetts Institute of Technology, 1952.
- JOAN E. WARNER, *Instructor in Secretarial Science*  
B.S., The University of Akron, 1956.
- LAURANCE R. WEBB, *Instructor in Chemistry*  
B.S., Western Kentucky State College; M.S., The University of Kentucky; Ph.D., Tulane University, 1951.
- WILLIAM R. WEISS, *Instructor in Secretarial Science*  
B.S., The University of Akron, 1957.
- HERBERT P. WELLS, *Instructor in Physical Education*  
B.S., The University of Akron, 1957.
- MRS. BETTY WETTSTYNE, *Instructor in Secretarial Science*  
B.S.Sec.Sc., The University of Akron; M.B.A., University of Chicago, 1944.
- NELLIE WHITTAKER, *Special Instructor in Piano*  
B.E., M.Ed., The University of Akron, 1935; Juilliard School of Music.
- DAVID H. WILSON, *Instructor in Law*  
B.A., Amherst; LL.B., Western Reserve University, 1948.
- ROBERT YOUNG, *Instructor in Philosophy*  
A.B., Park College; B.D., McCormick Seminary; D.D., Westminster College and Missouri Valley College, 1957.

## PUBLIC SCHOOL FACULTIES COOPERATING WITH THE COLLEGE OF EDUCATION

### OFFICERS OF AKRON PUBLIC SCHOOLS

MARTIN ESSEX, M.A., PED.D., LL.D. ....	<i>Superintendent of Schools</i>
RALPH GILLMAN, M.A. ....	<i>Assistant Superintendent</i>
A. J. DILLEHAY, M.A. ....	<i>Assistant Superintendent</i>
GEORGE F. WEBER, M.A.ED. ....	<i>Executive Director</i>
VIRGINIA LLOYD, M.D.ED. ....	<i>Principal of Spicer School</i>

### OFFICERS OF OTHER COOPERATING SCHOOLS

CARL COFFEEN, M.A.ED. ....	<i>Superintendent of Schools, Summit County</i>
GORDON DEWITT, M.A.ED. ....	<i>Acting Superintendent of Schools, Cuyahoga Falls</i>
RALPH ELY, M.A. ....	<i>Superintendent of Schools, Barberton</i>
R. M. ERWINE, M.A.ED. ....	<i>Superintendent of Schools, Coventry Township</i>
RALPH C. SCHLOTT, M.A. ....	<i>Superintendent of Schools, Norton Township</i>

### TEACHERS IN SPICER DEMONSTRATION LABORATORY SCHOOL, 1959-1960

Mrs. Olga Adams (*5th Grade*), Harold Bakewell (*Physical Education*), Mrs. Florence Benson (*7th Grade*), Mrs. Elsie Bowman (*6th Grade*), Mrs. Sue Burns (*4th Grade*), Mrs. Mildred Collis (*1st Grade*), Lois Cosner (*3rd Grade*), Mrs. Caroline French (*4th Grade*), Rose Mary Kraus (*1st Grade*), Gene Leach (*7th Grade*), Virginia Lloyd (*Principal*), Louis Lore (*7th Grade*), Mrs. Bessie Miller (*1st Grade*), Ruth Nelson (*3rd Grade*), Catherine Redinger (*Kindergarten*), Edith Richards (*Art*), Laura Roundy (*2nd Grade*), Dorothy Schorle (*2nd Grade*), Mrs. Isabell Sleeman (*6th Grade*), Mrs. Yvonne Washer (*Music*), Mrs. Marie Wilson (*5th Grade*).

DIRECTING TEACHERS, SPRING, SUMMER, AND  
FALL SEMESTERS, 1959

David D. Amstutz (*Jennings-North*), Mrs. Lillian Artola (*West*), Bruce G. Averill (*Schumacher*), Harold Bakewell (*Spicer-Fraunfelder*), Mrs. Virginia Barbieri (*Roswell Kent*), Michael Barich (*Central*), Mrs. Edna Bauch (*Schumacher*), Louis Bauman (*Kenmore*), Mrs. Doreen Bernel (*Schumacher*), Vincent Biondo (*Central*), Mrs. Berniece Blickle (*Central*), Mrs. Zella Boedicker (*Norton*), Twylah Book (*Barberton*), Richard Brindley (*Barberton*), Kenneth Brode (*Cuyahoga Falls*), Dorothy Browne (*Spicer*), Francis G. Browning (*Roswell Kent*), Paul S. Bryant (*Ellet*), Frank Buhas (*Garfield*), Mrs. Helen Bunts (*Lincoln*), Mrs. Suzanne Burns (*Spicer*), Mrs. Louise Burton (*Windemere*), Mrs. Marion Caldwell (*Fairlawn*), Jane Cochran (*Cuyahoga Falls*), Donna Cooper (*Margaret Park*), William Copeland (*Kenmore*), Mrs. Goldie Cospser (*Voris*), Mrs. Mary Ann Culver (*West*).

Mrs. Dorothy Darden (*Barber*), Nina Dasch (*Thornton*), Doris Daugherty (*Margaret Park*), Mrs. Beverly Davis (*Mason*), Robert Davis (*Crouse*), Pauline Delong (*Fraunfelder*), Robert Dengler (*Goodrich*), Rita DeSantis (*Lincoln*), Lawrence Dessart (*Goodyear*), Mrs. Florence Dougherty (*Schumacher*), Emil D'Zurik, (*Barberton*), Hazel Easterday (*Miller*), Richard Emmitt (*Crouse*), John Eshack (*Garfield*), Walter Evans (*Mogadore*), Helen Fairbanks (*Seiberling*), Helen Fisher (*Rankin*), Mrs. Madeline Foust (*Fairlawn*), Philip Gertz (*Mason*), Mrs. Gwendolyn Gilbert (*Cuyahoga Falls*), Robert Glunt (*Windemere*), Mrs. Margaret Goldwood (*Schumacher*), Mrs. Florine Gordon (*Perkins*), Mrs. Belle Grensler (*Lincoln*), Rosemary Grube (*Evening*), Ashton Hall (*Rittman*), Vida Hall (*South*), Mrs. Bonnie Hankammer (*Board of Education*), Mrs. Gladys Hardman (*Rankin*), John Harper (*Firestone Park*), Mrs. Laurette Harrison (*Central*), Marjorie Harry (*Barber*), Mrs. Elizabeth Harvey (*Schumacher*), Betty Heepe (*Schumacher*), Mary Hoffman (*Barber*), Mrs. Florence Howiler (*Crouse*), Mrs. Jean Howes (*East*), Mrs. Betty Hugg (*Barber*).

James Isaac (*West*), Mrs. Iva James (*Forest Hill*), Olga Johnson (*East*), John W. Kane (*Thornton*), Mary Kapioltas (*Kenmore*), Richard Keel (*Kenmore*), Ruth Keifer (*Lincoln*), Janie Kennedy (*Perkins*), Charles Kidder (*Buchtel*), Mrs. Evelyn Kirk (*Firestone Park*), Mrs. Dorothy Kist (*Seiberling*), Ladonna Koledin (*Ellet*), Mrs. Bess Krahl (*Fairlawn*), Rose Mary Kraus (*Spicer*), Grace Kyle (*Portage Path*), Mrs. Alvalyn Larson (*Cuyahoga Falls*), Joseph P. Lentine (*North-Jennings*), Mrs. Edith Lentz (*Evening*), Phyllis Lerch (*East*), Mrs. Jane Londa (*Central*), Helen Lussion (*East*), Mrs. Ruth Lynch (*Harris*).

Mrs. Elaine McEldowney (*Schumacher*), Mrs. Lillian McGuire (*Ellet*), William A. McLain (*Copley*), Mrs. Lucy McMurtrey (*Fraunfelder*), Hubert Mabe (*Lincoln*), Mrs. Ruth Mahoney (*Lincoln*), Mary Marchetti (*Board of Education*), John Marvin (*West*), Archie Mase (*West*), Mrs. Joanne Mazzaferro (*Lincoln*), Mrs. Helen Mikolashek (*Lincoln*), Mrs. Martha Miller (*East*), Mrs. Marion Mondl (*Garfield*), Lester Morgan (*Allen*), Mrs. Frances Moyer (*Portage Path*), Roger Myatt (*Mogadore*), Russell Nahas (*Central*), William Nicholson (*Central*), James R. Noland (*Hill*), Wallace H. Nolin (*South*), Mrs. Virginia Ongley (*King*), Moulton Ormeroid (*Garfield*), Thomas Pagna (*West*), Juliette Parenti (*Central*), Dominic Patella (*East*), Eugenia Paveloi (*Garfield*), Milan Pavkov (*Barberton*), Wilbur Pfeifer (*Garfield*), Sylvia Pierce (*Barber*), Mrs. Leona Poling (*Barber*), Mrs. Virginia Powe (*Miller*), Paul Pugh (*Garfield*), Homer Pyle (*Rittman*).

Mrs. Winifred Read (*North*), Mrs. Mary Reese (*Windemere*), Mrs. Helen Reid (*Forest Hill*), Mrs. Marjorie Rhoades (*Barber*), Jeannette Richardson (*Barber*), Mrs. Gloria Rittenhouse (*Leggett*), Reba Robinson (*Barberton*), Mrs. Frances Ross (*Seiberling*), Patricia Salem (*Mason*), Mrs. Jimmie Sandin (*Barber*), Janet Schaeffer (*Barber*), Roger Schaeffer (*Ellet*), Mrs. Rosa Schroeder (*Seiberling*), Geraldine Schumacher (*South*), Harold Schumacher (*Perkins*), Gene P. Scruggs (*Allen-Miller*), George Seigman (*Ellet*), Leroy Sellers (*Barber*), Mrs. Fannie Severns (*Perkins*), Mercedes Sheibley (*Henry*), Emmett Shellenberger (*Perkins*), Luther Smith (*East*), Mrs. Louise Snodgrass (*Central*), Beatrice Sprague (*Central*), Ruth Squires (*Barber*), Leona Sterley (*North*), Mrs. Lillian Thomas (*Perkins*), Loretta Tisch (*North*), Honora Tobin (*South*), Dominick Triferro (*Evening*).

Mrs. Isa Udell (*Central*), Mrs. Gaynelle Upchurch (*East*), John Vandever (*Central*), Robert Vernon (*Garfield*), William Waggoner (*Garfield*), Marian Wagner (*Schumacher*), Blanche Walker (*Rankin*), Mrs. Charlene Weber (*Windemere*), William Weiss (*North*), Richard E. Weldon (*Kent*), Frederick Wilson (*Goodrich*), Mrs. Marie Wilson (*Hill*), Stella Wilson (*Ellet*), Barbara Wise (*South*), Mrs. Sara Wood (*Schumacher*), Mrs. Janice Witherow (*Goodyear*), Mrs. Estella Yonally (*Voris*), and John Yovich (*Goodrich*).

## TEACHING FACULTY BY DEPARTMENTS

1959-60

*(All Colleges)*

## ACCOUNTING

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

## ART

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

## BIOLOGY

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

## CHEMISTRY

Mr. Thomas Sumner, *Head*; Mr. Edgar Bostick, Mr. Walter A. Cook, Mr. Gerald Corsaro, Mr. William Feldman, Mr. Vaughn W. Floutz, Mr. H. James Harwood, Mr. Eugene Mezey, Mr. Maurice Morton, Mr. Alan Rembaum, Mr. Kenneth Scott, Mr. Howard Stephens, Mr. Henry C. Stevens, Mr. Laurance R. Webb.

## ECONOMICS

Mr. Emile Grunberg, *Head*; Mr. Robert R. Black, Mr. James McLain, Mrs. Annette K. Seery Wallace.

## 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.

## EDUCATION - SECONDARY

Miss Mabel M. Riedinger, *Head*; Mr. D. J. Guzzetta, Mr. Alfred Johnson, Mr. C. T. McNerney, 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. William M. Glazier, 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. Harold F. Mathis.

## ENGINEERING - MECHANICAL

Mr. William Petry, *Head*; Mr. Michael Bezbatchenko, Mr. Robert Bowers, Mr. Anil K. Chatterjee, Mr. E. K. Hamlen, Mr. K. R. Rohrer, Mr. James Shearer.

## ENGLISH

Mr. Charles Duffy, *Head*; Mr. Alan J. Harmata, Miss Dorothy Hockey, Miss Martha Hosfelt, Mr. John Hull, Mrs. Julia Hull, Mrs. Rosalind Irish, Mr. Don A. Keister, Miss Ladonna Koledin, Mr. Sydney J. Krause, Mr. Walter D. Lehrman, Mr. George Leuca, Jr., Miss Patricia Lowry, Miss Mary Mostenic, Mr. Edward A. Paul, Mrs. Phyllis Paul, Mr. Frank T. Phipps, Mrs. Mary Pulleyn, Mrs. Ruth Putman, Mr. Edgar C. Roberts, Mr. Dale Ross, Mrs. Margaret Schoenberg, Mr. Ronald G. Snider, Mr. William J. Stevens, Mrs. Cathryn Taliaferro, Mrs. Helen S. Thackaberry, Mr. Robert E. Thackaberry, Mr. Ulysses S. Vance.

## GENERAL BUSINESS

Mr. C. M. White, *Head*; Mr. William E. Galleher, Mr. Harry Hollingsworth, Mr. William Lantz, Mr. W. W. Leigh, Mr. Stewart M. McKinnon, Mr. George McManmon, Mr. Charles Poston, Mr. Thomas Powers, Mr. Theodore R. Price, Mr. K. L. Reynolds, Mrs. Margaret Rogler, Mr. W. H. Victor.

## GEOGRAPHY

Mr. Edward W. Jones.

## HISTORY

Mr. George W. Knepper, *Head*; Mr. Howard Allen, Mr. Donfred H. Gardner, Mr. David C. Riede, Mr. Edgar Toppin, Mr. Henry S. Vyverberg.

## HOME ECONOMICS

Miss Irene C. Bear, *Head*; Miss Dorothy Laubacher, Mrs. Johanna Mally, Miss Mary H. Wilson.

## INDUSTRIAL MANAGEMENT

Mr. Frank Simonetti, *Head*; Mr. Donald Becker, Mr. Paul Dunham, Mr. Andrew B. Grible, Mr. John Kidney, Mr. Thomas Sharkey, Mr. C. W. Vobbe.

## LATIN AND GREEK

Mr. Theodore Duke.

## LAW

Mr. Stanley A. Samad, *Dean*; Mr. James G. France, Mr. Richard Marshall, Mr. Robert B. Romweber, Mr. Elmer J. Selman, Mr. Robert E. Shuff, Mr. David H. Wilson.

## MATHEMATICS

Mr. Samuel Selby, *Head*; Mr. Ernest H. Cherrington, Jr., Mr. Richard C. Davis, Mr. Stanley Dengler, Miss Will Lipscombe, Miss Margaret E. Mauch, Miss Sarah Gilinoff, Mr. Louis Ross, Mr. Leonard Sweet, Mr. Ernest A. Tabler.

## MODERN LANGUAGES

Mr. Robert T. Ittner, *Head*; Mr. Donato Internoscia, Mr. John Pulleyn, Jr., Mr. Howard S. Robertson, Mr. Herbert W. Smith, Jr.

## MUSIC

Mr. Farley Hutchins, *Head*; Mr. Robert B. Cole, Mr. Raymond DeMartia, Mr. Clarenz Lightfritz, Mr. William Long, Mr. John MacDonald, Mr. Milton Nelson, Mr. Robert Paolucci, Mr. Virgil Parman, Mr. Arthur Reginald, Mr. Lawrence Scarpitti, 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, *Head*; Mr. Robert Young.

## PHYSICAL EDUCATION

Mr. Kenneth Cochrane, *Head*; Mr. Russell J. Beichly, Mr. Thomas W. Evans, Mr. Anthony S. Laterza, Mr. Jack Lengyel, Mr. Walter Lipps, Mr. Andrew W. Maluke, Mr. Joseph H. McMullen, Mrs. Gay Nokes, Miss Wilma Ruman, Mr. Herbert Wills.

## PHYSICS

Mr. Ernest R. Thackeray, *Head*; Mr. Fred Bueche, Mr. Omer R. Fouts, Mr. Harvey Hanson, Mr. Maurice Horowitz, Mr. Edward F. Wahl.

## POLITICAL SCIENCE

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

## PSYCHOLOGY

Mr. Howard Maher, *Head*; Mr. Peter J. Hampton, Mr. William M. Taylor, Mr. Paul Twining, Mr. Edwin E. Wagner.

## SECRETARIAL SCIENCE

Mr. Howard M. Doust, *Head*; Mrs. Adena Handwerk, Mrs. Betty Oblisk, Mrs. Lucy Self, Miss Leona Sterley, Mrs. Audra Tucker, Miss Joan Warner, Mr. William R. Weiss, Mrs. Betty Wettstyne.

## SOCIOLOGY

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

## SPEECH

Mr. Ray H. Sandefur, *Head*; Mr. Frank T. Alusow, Mr. James F. Dunlap, Mrs. Phyllis Hardenstein, Miss Elizabeth Hittle, Mrs. Margaret Lefevre, 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 established a College of Law in September 1959 by taking over the Akron Law School which was founded in 1921.

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. The Library addition, which will triple its former capacity, is under construction and should be completed by January 1, 1961. A new Men's Dormitory will be ready for occupancy in the summer of 1960.

University property holdings now total 20 acres, and represent a debt-free investment of \$11,500,000. 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 BUCHEL 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, the American Association of Colleges for Teacher Education, and associate membership in The International Council on Education for Teaching.

\*Deceased.

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.

## 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 five Upper Colleges, divided on the basis of educational objectives. The Upper Colleges are Buchtel College of Liberal Arts, Engineering, Education, Business Administration, and Law. 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 form 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. Complete the Orientation program.

## 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

Additional subject requirements for students planning to major in:

Science, Premedical or Predental:

- 1½ units high school algebra
- 1 unit plane geometry

Engineering:

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

Industrial Management:

- 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.

Requirements for admission to the College of Law are listed in the College of Law section of this 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 155 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 higher than a 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. Persons enrolled as students in the College of Law are considered as postgraduate students.

### \*REPEATING COURSES

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.

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\*These rules do not apply to students in the College of Law.

### 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 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 Dean of the General College 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 and by the Dean of the college in which he wishes to enroll.

### 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.

†Does not apply to the College of Law.

### 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 dismissed 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 Dean of the General College.

Reinstatement of Upper College students is under the jurisdiction of the Dean of the college in which they were 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	17—Mathematics and Astronomy	33—Engineering, Basic
1—General Studies	18—Music	34—Engineering, Civil
2—Art	19—Philosophy	35—Engineering, Elec- trical
3—Biology	20—Physics	36—Engineering, Me- chanical
5—Chemistry	21—Political Science	39—Accounting
6—Economics	22—Sociology	40—General Business
7—English	23—Spanish	42—Industrial Manage- ment
8—French	24—Speech	43—Secretarial Science
10—German	27—Education	46—ROTC, Air
11—Greek	28—Geography	47—ROTC, Army
12—History	29—Health and Physical Education	60—Associate Studies
13—Home Economics	30—Psychology	70—Law
16—Latin	31—Nursing Education	

FEES AND EXPENSES

All fees must be paid at the Bursar'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
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TUITION

Payable by nonresidents of Akron in addition to other fees.

Per credit hour, per semester .....	\$11.00
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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

LAW COLLEGE FEES

Library fee, per semester .....	\$ 15.00
Tuition, Akron residents, per credit hour, per semester .....	27.00
Tuition, nonresidents of Akron, per credit hour, per semester .....	32.00
Graduation .....	25.00

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, No Maintenance Fees  
Piano, University Singers, Violin, Voice ..... 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 advanced degrees (Payable at time of application for degree).

Thesis fee (when required) .....\$ 10.00  
Binding fee, per volume ..... 5.00

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.

## 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)  
Community College ..... 2.00 (Per Semester)

## 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 an unmarried 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. An unmarried student 21 years of age or over, or a married student of any age 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 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 formally 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:

	Regular	Session or Semester 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. Community College, except by written request of the Dean
6. Towel

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

# The General College

D. J. GUZZETTA, ED.D., *Dean*

The General College was established in September 1935. Its objectives are twofold: 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. They remain under the jurisdiction of the Dean of the General College until they have satisfactorily passed at least 64 credits with a minimum quality point ratio of 2.

The General College is administratively subdivided into three departments as follows:

- The Department of General Studies
- The Department of Associate Programs
- The Department of Special Programs

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 Seminar.....	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 1960-1961.

## THE ASSOCIATE PROGRAMS

### ARTS

First Semester		Second Semester	
	Credits		Credits
1:1	Written English.....	1:2	Written English.....
1:11	Numbers Communication.....	1:6	Effective Speaking.....
1:13	Reasoning and Understanding in Science.....	1:14	Reasoning and Understanding in Science.....
1:15	Institutions in the U.S.....	1:16	Institutions in the U.S.....
1:19	Personal Development.....	1:22	Physical Education.....
1:21	Physical Education.....		ROTC.....
	ROTC.....		Electives.....
	3		3
	2		2
	3		3
	3		3
	2		1½
	1½		1½
	1½		3

*Second Year*

First Semester		Credits	Second Semester		Credits
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		ROTC .....	1½
	ROTC .....	1½		Electives .....	10
	Electives .....	8			

NOTE: Students not required to take ROTC will substitute 6 hours of electives. A maximum of 9 hours of electives may be chosen in any one department. While most of the electives should be selected from courses offered by departments in the Buchtel College of Liberal Arts, with approval, certain courses may be chosen from other College curricula.

INDUSTRIAL ELECTRONICS

*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
20:51	Physics .....	4	20:52	Physics .....	4
33:25	Engineering Drawing .....	3	60:32	Mathematical Analysis .....	3
60:31	Mathematical Analysis .....	3	60:41	Circuit Theory .....	3
	ROTC .....	1½		ROTC .....	1½

*Second Year*

1:17	Western Cultural Traditions .....	3	1:15	Institutions in the U.S. ....	3
60:33	Mathematical Analysis .....	3	1:18	Western Cultural Traditions .....	3
60:42	Circuit Theory .....	3	60:44	Electronics .....	4
60:43	Electronics .....	4	60:46	Measurements .....	3
60:45	Machinery .....	3	60:47	Electronics .....	3
	ROTC .....	1½			

MECHANICAL DESIGN

*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
20:51	Physics .....	4	20:52	Physics .....	4
33:25	Engineering Drawing .....	3	60:32	Mathematical Analysis .....	3
60:31	Mathematical Analysis .....	3	60:51	Statics & Dynamics .....	3
	ROTC .....	1½		ROTC .....	1½

*Second Year*

1:17	Western Cultural Traditions .....	3	1:15	Institutions in the U.S. ....	3
60:33	Mathematical Analysis .....	3	1:18	Western Cultural Traditions .....	3
60:52	Strength of Materials .....	3	33:43	Descriptive Geometry .....	3
60:53	Design Materials .....	3	60:55	Mechanical Design .....	4
60:54	Mechanical Design .....	4	60:56	Applied Thermal Energy .....	3
	ROTC .....	1½		ROTC .....	1½

SECRETARIAL SCIENCE

*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	1:11	Numbers Communication .....	2
43:23	Introduction to Office Problems .....	2	1:22	Physical Education .....	½
43:25	Machine & Slide Rule Calculation .....	1	43:27	Filing Systems .....	2
43:53	Typing Principles* .....	3	43:54	Typing Projects* .....	3
43:61	Shorthand Principles* .....	4	43:62	Shorthand & Transcription* .....	3
	ROTC .....	1½		ROTC .....	1½

*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	30:41	General Psychology .....	3
39:21	Accounting .....	3	43:55	Advanced Typewriting & Secretarial Machines .....	3
43:63	Advanced Dictation & Transcription* .....	4	43:64	Advanced Dictation & Transcription .....	4
43:93	Business Communications .....	2		ROTC .....	1½
	ROTC .....	1½			

NOTE: Total to equal a minimum of 64 credit hours.

\*Students with previous training may be excused by examination.

## 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.

#### CITIZENS ADVISORY COMMITTEE

The College maintains a Citizens Advisory Committee of prominent civic leaders with various fields of interest related to liberal arts. This Committee, appointed by the University Board of Directors, meets periodically with the Dean and his faculty associates to discuss such matters as academic policies, admission requirements, instructional and research matters, and teaching facilities.

The members of this Committee are: Mr. Paul E. Belcher, Mrs. Richard Corns, Mrs. Sam DuPree, Dr. William H. Falor, Mr. Arden E. Firestone, Mrs. Lincoln Gries, Mr. Alfred Herberich, Mr. Robert S. Pflueger, Mr. Waldo L. Semon, and Mr. Paul M. Zeis.

#### 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 Buchtel 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, psychology, 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, and guidance.

To prepare students for graduate study in: business, public administration, law, social work, counseling, and 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 Second Year foreign language on the university level (i.e., 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 "Graduate Study."

### THE MAJOR FIELD

To qualify for graduation a student must concentrate or major in the work of either a department or a 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 a second teaching field, which facilitates teacher placement, 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 in a teaching field required 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. A second teaching field must include the number of credits shown in the table.

The professional courses in Education and Psychology required for certification are listed in the table below which shows how they may be scheduled over a two-year period. They may be spread over three years or taken in two semesters and two Summer Sessions.

		<i>Third Year</i>			
First Semester	Credits	27:57	Second Semester	Credits	
30:41	General Psychology .....	3	Human Dev. and Learning .....	3	
			27:56 Educ. in American Society..	2	
		<i>Fourth Year</i>			
27:113	Principles and Practices in Secondary Education .....	3	27:202 Student Teaching and Seminar .....	8*	
			27:201 Problems in 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.

\*If taken during the Summer Session, 27:202 becomes a 6 credit course.

SOCIAL SCIENCES

The Social Sciences Division consists of the Departments of Economics, History, Political Science, Psychology, 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 five 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 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, 29, 30, 43, 45, 57, 59, 60, 69, 90, and Engineering Drawing 25.

Upper College courses: 102, 105, 115, 116, 131, 132, either 151-152 or 171-172, 200, 201, 202, 209, 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 take 21-22 in their first or second 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: 141, 144, 258, 255, 256, 135-136; (3) Botanical, which must include 265, 113-114, 215-216, 146 or 217, or at least one semester of 207-208.

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

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

PRE-MEDICAL

First Year

First Semester		Credits	Second Semester		Credits
1:1	WRITTEN ENGLISH .....	3	1:2	WRITTEN ENGLISH .....	3
1:19	PERSONAL DEVELOP- MENT .....	2	1:6	EFFECTIVE SPEAKING .....	2
1:21	PHYSICAL EDUCATION .....	1/2	1:22	PHYSICAL EDUCATION .....	1/2
	ROTC 11 or 13* .....	1 1/2		ROTC 12 or 14* .....	1 1/2
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			

\*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.

*Second Year*

1:3 WRITTEN ENGLISH .....	2	1:4 WRITTEN ENGLISH .....	2
1:7 EFFECTIVE SPEAKING .....	2	3:22 BIOLOGY .....	4
3:21 BIOLOGY .....	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
3:255 ANATOMY .....	4	3:256 EMBRYOLOGY .....	4
5:107 CHEMISTRY .....	4	20:26 PHYSICS .....	4
20:25 PHYSICS .....	4	10:44 GERMAN .....	3
10:43 GERMAN .....	3		

*Fourth Year*

3:235 PHYSIOLOGY .....	3	1:101 SENIOR SEMINAR .....	2
5:105 CHEMISTRY .....	4	5:106 CHEMISTRY .....	4
30:41 PSYCHOLOGY .....	3	30:43 PSYCHOLOGY .....	3
Elective .....	6	3:248 GENETICS .....	2
		Elective .....	3

Biology courses listed in third and fourth years may have to be reversed in the schedule because 235 and 248 are given in alternate years.

A Pre-Dental major program comprises the same courses as 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
3:21 BIOLOGY .....	4	3:22 BIOLOGY .....	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*

3:207 BACTERIOLOGY .....	4	3:208 BACTERIOLOGY .....	4
5:47 CHEMISTRY .....	4	5:48 CHEMISTRY .....	4
20:25 PHYSICS or Elective .....	4	20:26 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 five approved schools of medical technology in the Akron area, City Hospital, Akron General Hospital, St. Thomas Hospital, Children's Hospital, or Barberton Citizens 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.

**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 31-32.

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**

<i>First Year</i>		<i>Second Semester</i>		<i>Credits</i>
<i>First Semester</i>	<i>Credits</i>			
1:1 WRITTEN ENGLISH .....	3	1:2 WRITTEN ENGLISH .....		3
1:13 REASONING AND UNDER- STANDING IN SCIENCE .....	3	1:14 REASONING AND UNDER- STANDING IN SCIENCE .....		3
1:19 PERSONAL DEVELOPMENT .....	2	1:6 EFFECTIVE SPEAKING .....		2
1:11 NUMBERS COMMUNICA- TION .....	2	1:22 PHYSICAL EDUCATION .....		1/2
1:21 ROTC 11 or 13* .....	1 1/2	22:41 GENERAL SOCIOLOGY .....		3
1:21 PHYSICAL EDUCATION .....	1/2	ROTC 12 or 14* .....		1 1/2
Elective .....	3	Elective .....		3
<i>Second Year</i>				
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 .....		3
ROTC 43 or 53* .....	1 1/2	or 30:31 .....		3
Elective .....	2	ROTC 44 or 54* .....		1 1/2
		Elective .....		2
<i>Third Year</i>				
1:17 WESTERN CULTURAL TRADITIONS .....	3	1:18 WESTERN CULTURAL TRADITIONS .....		3
40:163 PERSONNEL MAN- AGEMENT .....	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			
<i>Fourth Year</i>				
6:239 AMERICAN LABOR AND THE GOVERNMENT .....	3	1:101 SENIOR SEMINAR .....		2
UPPER COLLEGE ECONOMICS .....	3	6:260 THE ECONOMICS AND PRACTICE OF COL- LECTIVE 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.

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

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 languages, including 6 credits on the 200 level.

Students who have completed two years in one of the 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, 43, 44, 101, 102, 103, 104, 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 organizations, 4 credits in 30, 4 credits in 130, 22, 43, 44, 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. 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, psychology, and music education 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. (Preferably German).

At least 34 credits in the department.

Mathematics 24, 43, 45, 46, 204; Chemistry 21-22.

Courses 20:25 and 20:26 do not meet major requirements.

#### POLITICAL SCIENCE

Requirements for a major:

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

At least 24 credits in the department.

#### 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, 215, 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 Major: 290, 291 or 292, 293, and at least 9 additional Speech credits including a theatre course and a radio or television course.

Speech Pathology Major: 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.

### CITIZENS ADVISORY COMMITTEE

The College maintains a Citizens Advisory Committee of prominent civic leaders with various fields of interest related to engineering. This Committee, appointed by the University Board of Directors, meets periodically with the Dean and his faculty associates to discuss such matters as academic policies, admission requirements, instructional and research matters, and teaching facilities.

The members of this Committee are: Mr. G. L. Bruggemeier, Mr. Russell DeYoung, Mr. J. Earl Gulick, Mr. Arthur Kelly, Mr. Thomas A. Knowles, Mr. Wendell R. LaDue, Mr. Vern Oldham, Mr. Clarence A. Palmer, Mr. Francis Stafford, and Mr. Ernest S. Theiss.

### 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)

<u>First Semester</u>	<u>Second Semester</u>
(Fall)	(Spring)

SOPHOMORE YEAR

(Full Time)

<u>First Semester</u>	<u>Second Semester</u>	<u>Third Term*</u>
(Fall)	(Spring)	(Summer)

PRE-JUNIOR YEAR

(Cooperative)

<u>First Semester</u>	<u>Second Semester</u>	<u>Third Term</u>
(Fall)	(Spring)	(Summer)

Section A	<u>School</u>	(1)*	<u>Work</u>	(1)	<u>School</u>	(2)	<u>Work</u>	(2)	<u>School</u>	(3)
Section B	<u>Work</u>	(1)*	<u>School</u>	(1)	<u>Work</u>	(2)	<u>School</u>	(2)	<u>Work</u>	(3)

JUNIOR YEAR

(Cooperative)

<u>First Semester</u>	<u>Second Semester</u>	<u>Third Term</u>
(Fall)	(Spring)	(Summer)

Section A	<u>Work</u>	(3)	<u>School</u>	(4)	<u>Work</u>	(4)	<u>School</u>	(5)	<u>Work</u>	(5)
Section B	<u>School</u>	(3)	<u>Work</u>	(4)	<u>School</u>	(4)	<u>Work</u>	(5)	<u>School</u>	(5)

SENIOR YEAR

(Cooperative) <u>First Semester</u>	(Full Time) <u>Second Semester</u>
(Fall)	(Spring)

Section A	<u>School</u>	(6)	<u>Work</u>	(6)
Section B	<u>Work</u>	(6)	<u>School</u>	(6)

## REQUIREMENTS FOR ADMISSION

In addition to the general requirements for admission to the University, students applying for admission in 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 promotion to the College of Engineering after satisfactory completion of the fourth 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 at 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 155 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)				SECOND SEMESTER (Spring)			
	Rec.	Lab.	Cr.		Rec.	Lab.	Cr.
17:24 Algebra-Trig. ....	4	0	4	17:43 Anal. Geometry .....	4	0	4
5:27 Chemistry .....	3	3	4	5:28 Chemistry .....	3	3	4
33:25 Engr. Drawing .....	1	6	3	33:43 Desc. Geometry .....	1	5	3
33:23 Survey of Engr. ....	1	0	0	1:2 Written English .....	3	0	3
1:19 Personal Development .....	2	0	2	1:6 Effective Spkg. ....	2	0	2
1:1. Written English .....	3	0	3	ROTC .....	2	1	1½
ROTC .....	2	1	1½	1:22 Phys. Ed. ....	0	2	½
1:21 Phys. Ed. ....	0	2	½				
	16	12	18		15	11	18

SOPHOMORE YEAR  
(Full Time)

FIRST SEMESTER (Fall)				SECOND SEMESTER (Spring)			
	Rec.	Lab.	Cr.		Rec.	Lab.	Cr.
17:45 Diff. Calculus .....	4	0	4	17:46 Int. Calculus .....	4	0	4
20:31 Physics .....	4	2	5	20:32 Physics .....	4	2	5
33:36 Engr. Matls. ....	3	0	3	33:48 Applied Mechanics I .....	3	0	3
1:15 Instit. in the U.S. ....	3	0	3	6:45 Economics .....	3	0	3
1:17 Western Cult. ....	2	2	3	1:18 Western Cult. ....	2	2	3
ROTC .....	2	1	1½	ROTC .....	2	1	1½
	18	5	19½		18	5	19½

THIRD TERM (Half Semester)  
(Summer)

	Subject	Rec.	Lab.	Cr.
	17:204 Diff. Equations .....	6	0	3
(1)	34:47 Surveying I .....	2	6	2
(2)	35:31 E.E. Fundamentals .....	5	3	3
(3)	36:41 Heat Power Principles .....	5	3	3
(4)	40:62 Production Management .....	6	0	3
	For C.E. students .....	13	9	8
	For E.E. students .....	16	6	9
	For M.E. students .....	14	6	8

- (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, 1959 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)*				SECOND SEMESTER (Spring) (Sections A and B)*			
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
34:101 Mechanics of Matls. I.....	5	0	2½	34:102 Mechanics of Matls. II	3	0	1½
33:49 Applied Mechanics II.....	5	0	2½	35:132 Electrical Machinery	4	3	2½
33:113 Technical Discourse I.....	2	0	1	33:114 Technical Discourse II..	2	0	1
33:137 Engr. Materials Lab.....	0	3	½	34:105 Structural Analysis.....	5	0	2½
35:30 D.C. & A.C. Principles.....	3	3	2	3:77 Intro. Bacteriology.....	2	6	2
	15	6	8½		16	9	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
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)				SECOND SEMESTER (Spring) (Section B — First Half)			
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
36:171 Fluid Mechanics.....	5	0	2½	33:116 Technical Discourse IV	2	0	1
33:115 Technical Discourse III	2	0	1	34:116 Surveying III.....	2	6	2
34:109 Surveying II.....	2	6	2	34:114 Steel Design I.....	5	0	2½
34:106 Indeter. Structures.....	5	3	3	34:107 Hydrology.....	4	0	2
	14	9	8½	34:111 Hydraulics.....	2	6	2
					15	12	9½
(Section A — Second Half)				(Section A — Second Half)			
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
33:116 Tech. Discourse IV.....	2	0	1	33:117 Technical Discourse V.....	2	0	1
34:116 Surveying III.....	2	6	2	33:128 Engineering Economy.....	5	0	2½
34:114 Steel Design I.....	5	0	2½	34:115 Steel Design II.....	5	0	2½
34:107 Hydrology.....	4	0	2	34:121 Water Supply.....	5	0	2½
34:111 Hydraulics.....	2	6	2	34:112 Concrete Mixtures Lab..	0	6	1
	15	12	9½		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	3	0	3
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
1:101 Senior Seminar	2	0	2
	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	5	0	2½
33:49 Applied Mechanics II	5	0	2½
33:113 Technical Discourse I	2	0	1
33:137 Engr. Materials Lab.	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.
35:134 A. C. Circuits II	5	3	3
35:143 Elect. Mach'y. I	3	0	1½
33:114 Technical Discourse II	2	0	1
35:139 Electromagnetic Fields	4	0	2
35:175 Electrical Lab. I	0	3	½
	14	6	8

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.

**JUNIOR YEAR**  
(Cooperative)

FIRST SEMESTER (Fall)				SECOND SEMESTER (Spring)			
(Section B — First Half)				(Section B — First Half)			
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
36:171 Fluid Mechanics .....	5	0	2½	33:116 Technical Discourse IV ..	2	0	1
33:115 Technical Discourse III ..	2	0	1	35:146 Elect. Mach'y. III .....	3	0	1½
35:144 Elect. Mach'y. II .....	3	0	1½	35:137 Elect. Measurements II..	3	0	1½
35:136 Elect. Measurements I ..	3	0	1½	35:135 Illumination .....	4	0	2
35:161 Electronics I .....	3	0	1½	35:162 Electronics II .....	3	0	1½
35:176 Electrical Lab. II .....	0	9	1½	35:177 Electrical Lab. III .....	0	9	1½
	16	9	9½		15	9	9
(Section A — Second Half)				(Section A — Second Half)			
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
33:116 Technical Discourse IV..	2	0	1	33:117 Technical Discourse V ..	2	0	1
35:146 Elect. Mach'y. III .....	3	0	1½	35:164 Electronics III .....	3	0	1½
35:137 Elect. Measurements II ..	3	0	1½	35:147 Elect. Mach'y. IV .....	3	0	1½
35:135 Illumination .....	4	0	2	35:140 Elect. Transients .....	5	0	2½
35:162 Electronics II .....	3	0	1½	35:138 Elect. Measurements III	3	0	1½
35:177 Electrical Lab. III .....	0	9	1½	35:178 Electrical Lab. IV .....	0	9	1½
	15	9	9		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)				SECOND SEMESTER (Full Time) (Spring)			
(Sections A and B)*							
Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
35:149 Inds. Instrumentation .....	4	0	2	35:168 Ultra High Freq. ....	3	0	3
35:169 Electronics IV .....	3	0	1½	35:171 Elem. of Servo-Mech. ....	3	0	3
35:158 Trans. Lines & Netw. ....	5	0	2½	35:167 E. E. Problems .....	0	3	1
35:170 Computers .....	4	0	2	20:150 Modern Physics .....	2	0	2
35:179 Electrical Lab. V .....	0	9	1½	35:180 Electrical Lab. VI .....	0	9	3
	16	9	9½	1:101 Senior Seminar .....	2	0	2
					10	12	14

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

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.	5	0	2½
33:49 Applied Mechanics II.	5	0	2½
33:113 Technical Discourse I.	2	0	1
33:137 Engr. Materials Lab.	0	3	½
35:30 D.C. & A.C. Principles.	3	3	2
	15	6	8½

##### SECOND SEMESTER

(Spring)

(Sections A and B)\*

Subject	Rec.	Lab.	Cr.
34:102 Mechanics of Matls. II.	3	0	1½
35:132 Electrical Machinery	4	3	2½
33:114 Technical Discourse II.	2	0	1
36:177 Thermodynamics I.	4	3	2½
36:172 Manufacturing Methods.	4	0	2
	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	5	0	2½
	15	6	8½

##### 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	5	0	2½
	15	6	8½

(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	4	0	2
36:184 Heat Transfer	4	3	2½
	18	3	9½

SENIOR YEAR

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

SECOND SEMESTER (Full Time)  
(Spring)

Subject	Rec.	Lab.	Cr.	Subject	Rec.	Lab.	Cr.
35:149 Inds. Instrumentation	4	0	2	36:187 Heating & Air Cond.	3	0	3
35:181 Inds. Instrument. Lab.	0	3	½	36:192 Heat Machines	3	3	4
36:174 Fluid Mechanics Lab.	0	6	1	36:196 Inspection Trips	0	3	1
36:169 Engr. Administration II	6	0	3	36:197 M. E. Problems	1	6	3
36:191 Thermodynamics III	3	3	2	20:150 Modern Physics	2	0	2
36:198 Machine Design III	4	0	2	1:101 Senior Seminar	2	0	2
	17	12	10½		11	12	15

INDUSTRIAL OPTION

Mechanical Engineering students may elect an Industrial Option by substituting approved Industrial Management courses for 36:187 and 36:192 and by selecting an appropriate project in 36:197 for a total of ten credits. The approved Industrial Management courses include:

- 42:166 Motion and Time Study (required)
- 42:203 Production Planning and Control
- 42:205 Quality Control

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

## THE COLLEGE OF EDUCATION

CHESTER T. MCNERNEY, 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.

The University is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary teachers, secondary teachers and school service personnel, with the Master's degree as the highest degree approved.

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.

### CITIZENS ADVISORY COMMITTEE

The College maintains a Citizens Advisory Committee of prominent civic leaders with various fields of interest related to education. This Committee, appointed by the University Board of Directors, meets periodically with the Dean and his faculty associates to discuss such matters as academic policies, admission requirements, instructional and research matters, and teaching facilities.

The members of this Committee are: Mrs. C. D. Barrett, Mr. Carl Coffeen, Mr. Gordon DeWitt, Mr. Ralph Ely, Mrs. Stanley Emmitt, Mr. Martin Essex, Mr. Vincent Johnson, Mr. Norman Malone, Mrs. Donald Minnig, and Mr. T. O. Morgan.

### OBJECTIVES OF THE COLLEGE

The objectives of the College of Education are:

1. To provide as broad and 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, nursing, 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.....	MR. DISTAD, MISS BECKER, MRS. PAINTER
	MR. JONES, MR. CHRISP, MR. SANDERS
High School.....	MISS RIEDINGER, MR. H. R. EVANS, MR. JOHNSON,
	MR. PAINTER, MR. WATT
Home Economics .....	MISS BEAR
Music .....	MR. HUTCHINS
Nursing, Nursing Education.....	MISS TOVEY
Physical Education.....	MR. COCHRANE,
	MISS RUMAN, MR. MALUKE
Speech .....	MR. SANDEFUR
Graduate .....	DEAN MCNERNEY, MISS RIEDINGER, MR. DISTAD

## REQUIREMENTS FOR DEGREES

		Credits
1. <i>General Education requirements:</i>		
1 :1-2	Written English .....	6
1 :3-4	Written English .....	4
1 :6-7	Effective Speaking .....	4
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 Seminar.....	2
2. <i>Pre-professional requirements:</i>		
27 :57	Human Development and Learning .....	3
27 :56	Education in American Society .....	2
3. <i>Professional courses:</i>		
27 :105	Tests and Measurements .....	2
27 :202	Student Teaching and Seminar .....	8
	Methods, varies with teaching field .....	3
27 :201	Problems in Education .....	3
4. <i>Major field plus one minor, depending upon field.</i>		

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 is based on the 2.5 point average required of all College of Education Students. Satisfactory work must be done in teaching field 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. Seniors must be sure to take Senior Seminar 1:101 during the semester of their senior year which they are not 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 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
27:56	Education in American Society	2	30:41	General Psychology	3
	Electives	5		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
27:57	Human Development and Learning	3		27:86	Children's Literature	3
27:41	Handicrafts	2		12:41	American History or American Government	3
				21:41	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
27:105	Tests and Measurements	2		27:136	Arithmetic for El. Gr.	3
18:121	Primary Elem. Music Education	2		27:113	Principles and Practices in Secondary Education	3
					Elective	3

Fourth Year

1:101	Senior Seminar	2	or	1:101	Senior Seminar	2
27:202	Student Teaching and Seminar (Elem. & Sec. either semester)	10		29:138	Health and Phys. Educ. Activities	3
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
27:56	Education in American Society	2	30:41	General Psychology	3
2:21	Design	2	27:62	Elem. School Music Liter. and Apprec.	2
18:23	Fundamentals of Music	2		Elective	3

<i>Second Year</i>					
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.
1:3	Written English	2		1:4	Written English
1:7	Effective Speaking	2		ROTC	1½
27:57	Human Development and Learning	1½		28:71	Principles of Geography
	Elective	3		27:86	Children's Literature
		3		Elective	5
		3			
<i>Third Year</i>					
1:17	Western Cultural Trad.	3		1:18	Western Cultural Trad.
27:202	Geography	3		27:138	Tchg. of Soc. Stud. (Elem.)
27:135	Tchg. of Reading	3			or
27:137	Tchg. Language Arts (Elem.)	3		27:132	Early Elem. Educ. (Kind.-Pr.)
		3		27:133	Science for Elem. Grades
27:131	Early Elem. Educ. (Kind.-Pr.)	3		27:105	Tests & Measurements
27:41	Handicrafts	2		27:136	Arith. in Elem. Grades
		2		27:121	Art for the Grades
		2		27:121	Primary Elem. Music Ed.
		2			
<i>Fourth Year</i>					
1:101	Senior Seminar	2		1:101	Senior Seminar
27:202	Student Teaching and Seminar	8		29:138	Health & Phys. Education
27:201	Problems in Education	3		Activities	3
21:41	American Government or	3		Electives	5-10
12:41	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			
27:202	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 must complete at least 24 semester hours of additional credit toward the degree in order to keep their certificates in force.

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

<i>First Year</i>					
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	27:57	Human Development and Learning	3
18:23	Fund. of Music	2	27:41	Handicrafts	2
27:56	Education in American Society	2	27:62	Elementary School Music	2
	ROTC	1½		Liter. & Apprec.	2
				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		28:71 Principles of Geography .....	3	
27:136 Arithmetic in Elementary Grades .....	3		27:133 Science Elementary Grades .....	3	
29:138 Health & P.E. Act. ....	3		27:202 Student Teaching and Seminar. . .	8	
21:41 American Government or .....	3		ROTC .....	1½	
12:41 American History .....	3		Total to make at least 67 (Women)		
ROTC .....	1½		(For men, including ROTC, 73)		
<i>Either</i>					
27:131 Early Elem. Educa. ....	3				
<i>and</i>					
27:132 Early Elem. Educ. ....	3				
<i>Or</i>					
27:137 Teaching Lang. Arts. ....	3				
<i>and</i>					
27:138 Teaching of Soc. Stud. ....	2				

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
27:57 Human Development and Learning .....	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 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
27:56	Education in American Society .....	2	30:41	General Psychology .....	3
2:21	Design .....	2	2:30	Art Appreciation .....	2
2:29	Art Appreciation .....	2	2:45	Drawing .....	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
27:57	Human Development and Learning	3	2:57	Design in Crafts	2
2:59	Ceramics	2	2:60	Ceramics	2
2:69	Life Drawing	2	2:90	Advanced Drawing	2

**Third and Fourth Years**

1:15	Institutions in the U. S.	3	1:16	Institutions in the U. S.	3
1:101	Senior Seminar	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
2:151	Costume or		2:132	Commercial Art	2
2:171	Interior Design	3	2:152	Costume Design or	
2:200	History of Art	3	2:172	Interior Design	3
2:209	Advanced Life Drawing	2	2:201	History of Art	3
2:131	Commercial Art	2	2:102	Advanced Design in Crafts	2
27:105	Tests and Measurements	2	27:191	Methods of Teaching Art	9
27:202	Student Teaching and Seminar	8	2:106	Weaving	2
	Electives: Women	6	27:201	Problems in Education	3
	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			Credits
2:21	Design	4	2:90	Advanced Drawing	2
2:45-46	Drawing	4	2:115-116	Painting	4
2:57	Design in Crafts	2	2:191	Methods of Teaching Art	3
2:59	Ceramics	2	2:200-201-202	History of Art	6
2:69	Life Drawing	2			

**BUSINESS EDUCATION**

**Suggested Program  
Comprehensive Major**

**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 & Under. in Sci.	3	1:14	Reasoning & Under. in Sci.	3
	ROTC	1½		ROTC	1½
43:27	Filing Systems	2	43:23	Intro. to Office Prob.	2
	or			or	
43:23	Intro. to Office Prob.	2	43:27	Filing Systems	2
43:53	Typewriting Principles*	3	43:54	Typewriting Projects*	3
27:56	Educ. in Amer. Soc.	3	30:41	General Psychology	3

**Second Year**

First Semester		Credits	Second Semester		Credits
1:3	Written English	2	1:4	Written English	2
1:7	Effective Speaking	2	1:11	Numbers Communications	2
1:15	Institutions in the U. S.	3	1:16	Institutions in the U. S.	3
	ROTC	1½		ROTC	1½
43:61	Shorthand Principles*	4	43:62	Shorthand & Trans.*	3
39:21	Accounting	3	39:22	Accounting	3
27:57	Human Dev. & Learning	3	43:25	Mach. & Sl. Rule Cal.	1
			40:61	Bus. Org. and Mgt.	3

**Third Year**

First Semester		Credits	Second Semester		Credits
1:17	West. Cultural Trad.	3	1:18	West. Cultural Trad.	3
6:	Economics	3	43:55	Adv. Typewriting & Sec. Machines	3
43:63	Adv. Shorthand & Trans.	4	27:173	Meth. in Typewriting	1
40:141	Business Law	3	27:174	Meth. in Shorthand & Trans.	1
40:83	Marketing	3	27:175	Meth. in Bookkeeping	1
43:93	Bus. Communications	2	27:113	Prin. & Pract. in Sec. Education	3
			43:64	Adv. Dict. & Trans.**	4

**Fourth Year**

First Semester		Credits	Second Semester		Credits
1:101	Senior Seminar Course	2	28:54	Economic Geography	3
40:181	Prin. of Salesmanship	3	27:201	Problems in Education	3
27:202	Student Teach. & Seminar	8	27:105	Tests & Measurements	2
			43:292	Exec. Office Projects	3

Electives to total at least 128 hours with at least 45 hours in the major.

\* Students with previous training may be excused by examination.

\*\* Not required of those who have credit for 62 and 63.

## HOME ECONOMICS EDUCATION

<i>First Year</i>			
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
27:56 Education in American Society .....	2	30:41 General Psychology .....	3
13:21 Textiles .....	3	13:22 or 23 Clothing .....	3
13:53 Home Econ. Orientation .....	1		
<i>Second Year</i>			
1:11 Numbers Communication .....	2	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	27:57 Human Development and Learning .....	3
Elective .....	4	13:58 Household Furnishings .....	3
<i>Third Year</i>			
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
<i>Fourth Year</i>			
1:101 Senior Seminar .....	2	1:101 Senior Seminar .....	2
13:119 Nutrition .....	3	27:202 Student Teaching and Seminar ...	8
Electives .....	8	27:201 Problems in Education .....	3

## MUSIC EDUCATION

<i>First Year</i>			
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 Reas. Und. Science .....	3	1:14 Reas. Und. Science .....	3
27:56 ROTC .....	1½	30:41 ROTC .....	1½
18:43 Educ. Amer. Soc. ....	3	30:41 General Psychology .....	3
Theory I .....	3	18:44 Theory II .....	3
Applied Music .....	2 or 4	Applied Music .....	2 or 4
Music Organization .....	1	Music Organization .....	1
18:30 Student Recital .....	1	18:22 Art of Music .....	2
		18:30 Student Recital .....	1
<i>Second Year</i>			
1:11 Numbers Comm. ....	2	1:11 Numbers Comm. ....	2
1:15 Institutions in U. S. ....	3	1:16 Institutions in U. S. ....	3
1:3 Written English .....	2	1:4 Written English .....	2
1:7 Effective Speaking .....	2	ROTC .....	1½
18:103 ROTC .....	1½	18:104 Theory IV .....	3
27:57 Theory III .....	3	18:62 Elem. Music Lit. & App. ....	2
18:55 Hum. Dev. and Learning ...	3	18:56 String Class .....	2
String Class .....	2	Applied Music .....	2 or 4
Applied Music .....	2 or 4	Music Organization .....	1
Music Organization .....	1	18:30 Student Recital .....	1
18:30 Student Recital .....	1		
<i>Third Year</i>			
1:17 Western Cult. Trad. ....	3	1:18 Western Cult. Trad. ....	3
18:121 Prim. Elem. Music Educ. ....	2	18:123 Sec. Music Educ. ....	2
18:101 History of Music .....	2	18:102 History of Music .....	2
18:50 Voice Class .....	2	18:110 Conducting .....	2
Applied Music .....	2 or 4	Applied Music .....	2 or 4
Music Organization .....	1	Music Organization .....	1
18:130 Student Recital .....	1	18:130 Student Recital .....	1
18:57 Woodwind Class .....	2	18:58 Brass & Percussion Cl. ....	2
<i>Fourth Year</i>			
1:101 Senior Seminar .....	2	1:101 Senior Seminar .....	2
18:114 Orchestration .....	2	18:111 Composition .....	2
27:202 Stud. Tchg. & Seminar .....	8	27:201 Problems in Educ. ....	3
Applied Music .....	2 or 4	Applied Music .....	2 or 4
Music Organization .....	1	Music Organization .....	1
18:130 Student Recital .....	1	18:130 Student Recital .....	1
		Total to make 128.	

Suggestion: One of the academic courses in the curriculum for the second year may be deferred until the third year.

*Strongly Recommended Electives* for the fourth year include:

- 18:116 Advanced Conducting
- 18:201 Introduction to Musicology
- 18:202 Bibliography and Research

These courses are essential to all students who contemplate eventual graduate study.

STATE REQUIREMENTS FOR A MINOR IN MUSIC

- 18:23 Fundamentals of Music
- 18:22 Art of Music
- 18:43 Theory I
- 18:44 Theory II
- 18:101 and History of Music
- 18:102
- 18:123 Music Education
- 18:110 Conducting
- Applied Music (at least 4 credits)

NOTE: While a minor teaching field in music does exist in the certification law, it should be noted that virtually no school systems now employ persons with minors in music, for the purpose of teaching music. A minor in music may be taken by interested students as a cultural course.

MUSIC ORGANIZATIONS

The University Symphony Orchestra, University Band, and University Singers are open to all qualified students, with or without college credit. There is no fee for participation in the organizations.

MUSIC DEPARTMENT REQUIREMENTS

1. To major in Music Education, a student should have reached a satisfactory level of achievement in voice or some instrument before entrance.
2. Participation in one of the Music Organizations is required each semester.
3. Attendance at Student Recital is required each semester.
4. A jury examination in "functional piano" is a requirement for graduation. Details may be found on page 43.
5. Basic Music Department requirements for graduation, conforming to the standards established by the National Association of Schools of Music, include 42 hours in general culture; 18 in basic music courses; 42 credits in musical performance, including Applied Music, Conducting, Voice, String, Brass and Woodwind Classes, and Student Recital; and 26 in Professional Education.
6. Applied Music study must include piano until passage of the examination in functional piano; it should include at least one year, and preferably two years of voice; and may include any other instruments.

NOTE: It is possible for qualified students to combine the curriculum in Music Education with the Bachelor of Music curriculum of the College of Liberal Arts, in five years of study, and thus to prepare both for teaching and for graduate study of music.

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 .....	1/2	1:22 Physical Education .....	1/2
1:13 Reasoning and Understanding		1:14 Reasoning and Understanding	
in Science .....	3	in Science .....	3
ROTC .....	1 1/2	30:41 General Psychology .....	3
27:56 Education in American Society ...	2	ROTC .....	1 1/2
Elective .....	6-7	Elective .....	5-6

†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.

<i>Second Year</i>			
1:11 Numbers Communication		24:51 Reading Aloud*	3
1:15 Institutions in the United States	3	Elective (Speech)	3
1:3 Written English	2	or 1:11 Numbers Communication	2
ROTC	1½	1:16 Institutions in the United States	3
1:7 Effective Speaking*	2	1:4 Written English	2
27:57 Human Development and Learning	3	ROTC	1½
		Elective (Speech)	8-9
<i>Third Year</i>			
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		
<i>Fourth Year</i>			
First Semester	Credits	Second Semester	Credits
1:101 Senior Seminar	2	or 1:101 Senior Seminar	2
27:202 Student Teaching and Seminar	8	27:201 Problems in Education	3
Speech	3	Speech	3
Elective (teaching field)	3	Elective (teaching field)	10

### 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

<i>First Year</i>			
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
27:56 Education in American Society	2	30:41 General Psychology	3
29:45 Physical Education**	2	29:46 Physical Education**	2
Electives	2-3	Electives	2-3
<i>Second Year</i>			
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
27:57 Human Development and Learning	3	29:70 Org. & Adm. of Com. Rec.	2
29:97 Anatomy**	3	Electives (teaching field)	1-2
<i>Third Year</i>			
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
29:121 Org. & Adm. of Phys. Ed.**	2	27:105 Tests & Meas.	2
29:111 First Aid	1	29:122 Org. & Adm. of Phys. Ed.**	2
29:112 Massage	1	27:133 Meth. & Materials in Teaching Health Educ.**	3
29:115 Normal Diagnosis & Corrective Exercise	2	29:134 Games & Rhythms for Elementary Grades**	2
29:125 Org. & Adm. of School Health**	3		

\*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.

<i>Fourth Year</i>			
1:101 Senior Seminar .....	2	1:101 Senior Seminar .....	2
27:202 Student Teaching and Seminar....	8	27:201 Problems in Education .....	3-7
Electives .....	4	29:119 Community Hygiene** .....	3
		29:120 Camping & Outdoor Education....	2
		Electives .....	6

**WOMEN**

<i>First Year</i>					
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	
27:56 Education in American Society....	2		30:41 General Psychology .....	3	
Electives .....	3-4		Electives .....	3-4	

<i>Second Year</i>					
First Semester		Credits	Second Semester		Credits
1:11 Numbers Communication .....	2	or	1:11 Numbers Communication .....	3	
1:15 Institutions in the U. S. ....	3		1:16 Institutions in the U. S. ....	2	
1:3 Written English .....	2		1:4 Written English .....	3	
1:7 Effective Speaking .....	2		29:98 Physiology* .....	2	
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	
27:57 Human Development and Learning .....	3		Electives .....	2-3	
Electives .....	2-3				

<i>Third Year</i>					
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				

<i>Fourth Year</i>				
1:101 Senior Seminar .....	2	or	1:101 Senior Seminar .....	2
29:114 Theory & Practice of Swim. ....	2		27:202 Student Teaching and Seminar	8
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.

\*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.  
 \*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.

## 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.

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	Second Semester	Credits
3:47 Anatomy & Physiology .....	3	3:48 Anatomy & Physiology .....	3
5:25 Chemistry .....	3	30:21 Psychology or 22:23 Sociology	3
30:21 Psychology or 22:23 Sociology	3	13:43 Foods or 3:33 Microbiology....	3
13:43 Foods or 3:33 Microbiology....	3	1:1 Written English or .....	3
31:59 History of Nursing or .....	2	31:50 History of Nursing .....	2
1:1 Written English .....	3		
	14-15		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, psychiatric, and public health nursing is provided through affiliations at various hospitals 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	PROFESSIONAL COURSES
1:1 through 1:19 Courses .....	31:100 Nursing Trends .....
27:57 Human Development and	31:105 Prin. & Meth. of Teaching
Learning .....	Nursing .....
30:115 or 116 Psychology .....	31:106 Ward Mgt. & Tchg. ....
27:105 Tests & Meas. ....	31:113 Public Health Nursing Practice
Chemistry, Physics, Bacteriol-	31:114 Comprehensive Nursing Care ..
ogy or Physiology .....	31:115 Comprehensive Nursing Practice
6-8	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.

### CITIZENS ADVISORY COMMITTEE

The College maintains a Citizens Advisory Committee of prominent civic leaders with various fields of interest related to business administration. This Committee, appointed by the University Board of Directors, meets periodically with the Dean and his faculty associates to discuss such matters as academic policies, admission requirements, instructional and research matters, and teaching facilities.

The members of this Committee are: Mr. Fred I. Albrecht, Mr. F. J. Carter, Mr. Joseph W. Childs, Mr. George Daverio, Mr. John N. Hart, Mr. Heskett H. Kuhn, Mr. M. G. O'Neil, Mr. M. S. Richardson, Mr. J. E. Trainer, and Mr. E. D. Warner.

### 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 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 83, 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		BUSINESS ADMINISTRATION MAJOR	
<i>Liberal Education — 10</i> <i>Provide:</i>	<i>Business Foundation</i> <i>Courses</i>	<i>Junior Year</i>	<i>Senior Year</i>
1. Facility in use of English—oral and written.	1. Business Organization	1. Principles of business operation: Production Marketing Finance Personnel Relations	Major of 15 credits — sufficient concentration for the student to appreciate and understand one given area of business.
2. Knowledge of basic mathematics — the quantitative measuring tool.	2. Economics	2. Measurement and control tools: Accounting Costs-budgets Statistics Operating standards	Electives in Liberal Arts in: a. Economics, social sciences, literature, etc. b. Bus. Adm. Courses (major)
3. A basic understanding of the reasoning and analytical methods of science.	3. Accounting		Business Policy (3 credits) integrates, evaluates and applies the materials learned.
4. Knowledge of man's moral, social, cultural, and religious development.			

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 Administration; 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

<i>First Year</i>			
First Semester	Credits	Second Semester	Credits
1:1 English .....	3	1:2 English .....	3
17:18 Intermediate Algebra .....	3	40:61 Business Organization .....	3
or			
40:61 Business Organization .....	3	17:18 Intermediate Algebra .....	3
1:19 Personal Development .....	2	1:6 Effective Speaking .....	2
1:21 Physical Education .....	1/2	1:22 Physical Education .....	1/2
39:21 Accounting or 121 .....	3	39:22 Accounting or 121 .....	3
ROTC 11 or 13 .....	1 1/2	ROTC 12 or 14 .....	1 1/2
1:13 R & U in Science .....	3	1:14 R & U in Science .....	3
<i>Second Year</i>			
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
28:54 Economic Geography .....	3	40:62 Production Mgmt. ....	3
or			
6:144 Economic Institutions .....	3	ROTC 44 or 54 .....	1 1/2
ROTC 43 or 53 .....	1 1/2	40:83 Marketing .....	3
40:83 Marketing .....	3		

Students electing Advanced ROTC should take Marketing 83 and Business Finance 171 in the Summer Session at this point.

*Third Year*

6:148 Money & Banking .....	3	Elective or ROTC** .....	3
1:17 Western Cultural Traditions .....	3	1:18 Western Cultural Traditions .....	3
40:181 Principles of Salesmanship .....	3	39:124 Managerial Accounting .....	3
or		40:147 Statistics .....	3
40:171 Business Finance .....	3	Elective or ROTC** .....	6
40:141 Business Law .....	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 Seminar .....	2	40:268 Business Policy .....	3
Social Science or Business .....	3	Social Science or Business .....	3
Elective or ROTC .....	2	Humanities or Social Science .....	3

Three fields of specialization are available: Finance; Marketing, Merchandising and Advertising; and General Administration. 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
6:208 Public Finance .....	3	40:247 Adv. Statistics .....	3
40:158 Principles of Insurance .....	3	6:204 Monetary & Banking Policy .....	3
40:176 Banking Practice and Management .....	3	40:174 Credits & Collections .....	2
40:172 Investments * .....	3	40:277 Security Analysis .....	3
		40:279 Problems in Finance * .....	3

## MARKETING, MERCHANDISING AND ADVERTISING

40:194 Principles of Merchandising .....	3	40:188 Sales Promotion and Market Development .....	3
40:291 Sales Administration * .....	3	6:268 International Economic Relations .....	3
40:296 Market Analysis .....	3	40:283 Problems in Advertising .....	3
40:293 Problems in Marketing * .....	3	40:284 Problems in Retail Mgt. .....	3
40:185 Advertising .....	3		

## GENERAL ADMINISTRATION

42:101 Industrial Plants .....	3	40:189 Purchasing .....	2
40:151 Transportation .....	3	40:279 Problems in Finance .....	3
40:163 Personnel Management .....	2	40:291 Sales Administration * .....	3
40:264 Personnel Relations .....	3	6:294 National Income and its variations .....	3
		40:247 Advanced Statistics .....	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

Accounting has been called the "language of business". The work of the accountant is to assemble, analyze, and interpret the financial and quantitative information of an organization. These activities are not confined to a business enterprise, because trained specialists are needed in such institutions as hospitals, banks, railroads, and government.

The business world recognizes the importance of accounting. The subject has become as exacting in its requirements as the older professions of law and medicine. The curriculum is designed to give the student a broad base in liberal arts and the fundamentals of business as well as a basic knowledge of the concepts and practice of accounting.

Electives permit students to enter public accounting, governmental accounting, industrial or retail fields, as well as the teaching profession.

Competency in public accounting is recognized by a certificate which entitles the holder to the title of Certified Public Accountant. In Ohio this certificate is awarded by the Accountancy Board of Ohio, with headquarters in Columbus, who semi-annually administer the Uniform Accounting Examination of the American Institute of Certified Public Accountants. Graduates who major in accounting are now permitted to take this examination, although the certificate is not awarded until actual experience requirements specified are fulfilled.

\*\*Students in Business Administration may count only 8 hours of Advanced ROTC toward their graduation requirement.

## ACCOUNTING CURRICULUM

First Semester		<i>First Year</i>		Second Semester		
1:1	Written English .....	3		1:2	Written English .....	3
1:13	R & U in Science .....	3		1:14	R & U in Science .....	3
1:19	Personal Development .....	2		1:6	Effective Speaking .....	2
40:61	Business Organization .....	3		39:22	Accounting .....	3
39:21	Accounting .....	3		17:18	Intermediate Algebra .....	3
1:21	Physical Education .....	1/2		1:22	Physical Education .....	1/2
	ROTC 11 or 13 .....	1 1/2			ROTC 12 or 14 .....	1 1/2
<i>Second Year</i>						
1:3	Written English .....	2		1:4	Written English .....	2
1:7	Speech .....	2		40:62	Production Management .....	3
1:15	Institutions in U. S. ....	3		1:16	Institutions in U. S. ....	3
39:43	Accounting .....	3		39:44	Accounting .....	3
6:45	Economics .....	3		6:46	Economics .....	3
	Elective* .....	3			ROTC 44 or 54 .....	1 1/2
	ROTC 43 or 53 .....	1 1/2				
<i>Third Year</i>						
1:17	Western Cult. Trad. ....	3		1:18	Western Cult. Trad. ....	3
40:141	Business Law .....	3		40:142	Business Law .....	3
39:27	Cost Accounting .....	3		40:147	Statistics .....	3
40:83	Marketing .....	3		6:144	Economic Institutions or	
40:171	Finance .....	3			Economic Geography .....	3
	Elective* .....	3			Elective* .....	3
<i>Fourth Year</i>						
39:233	Taxation .....	3		1:101	Senior Seminar .....	2
39:237	Auditing .....	3		39:238	Auditing .....	3
	Electives .....	9		40:268	Business Policy .....	3
					Electives .....	7

\* A minimum of nine hours of electives shall be selected from Liberal Arts subjects.

The Level I achievement test, prepared and graded by the American Institute of Certified Public Accountants, is required of all students before credit will be granted for Accounting 22. Students interested in majoring in Accounting should score well on this test. The Level II accounting test is required of all students desiring credit for Accounting 238.

In addition to the accounting courses required in the above program, students preparing for a career in public accounting are advised to take Accounting 231. Majors preparing for careers in industrial accounting are suggested to take Advanced Cost Accounting 228, Budgeting 123, plus selected courses in Industrial Management (such as Production Control and Motion and Time Study).

## 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 Year

First Semester	Credits	Second Semester	Credits
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	1/2
1:19 Personal Development	2	39:22 Accounting	3
39:21 Accounting or 121*	3	ROTC 12 or 14	1 1/2
ROTC 11 or 13	1 1/2	40:61 Business Organization	3
		1:14 Science	3

## Second Year

1:21 Physical Education	1/2	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	40:83 Marketing	3
40:62 Production Mgmt.	3	6:46 Economics	3
6:45 Economics	3	33:20 Drawing	1
18 Algebra	3**	ROTC	1 1/2
ROTC	1 1/2		

## Third Year

1:17 Western Cultural Traditions	3	1:18 Western Cultural Traditions	3
42:101 Industrial Plants	3	40:163 Personnel Management	2
40:147 Statistics	3	40:166 Motion & Time Study	4
39:27 Cost Accounting	3	40:171 Business Finance	3
Elective or ROTC	3	Major Elective or ROTC	4

During the last semester of his third and in his fourth year, the Industrial Management student must take at least 9 hours spread over both the SPECIALIZED, and GENERAL MAJOR COURSES with at least one course, but not more than two, in each category.

## Fourth Year

1:101 Senior Seminar	2	42:205 Quality Control	3
42:203 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

42:107 Industrial Safety	2	42:165 Job Evaluation	2
40:189 Purchasing	2	39:123 Budgeting	3
42:109 Plant Maintenance	2		

## GENERAL MAJOR COURSES

6:260 Collective Bargaining	3	6:241 Analytical Economics	3
40:264 Personnel Relations	3	30:207 Psychological Testing	3
6:106 Labor Problems	3	30:116 Industrial Psychology	3
40:172 Investments	3	40:151 Transportation	3
40:291 Sales Administration	3	21:110 Government and Business	3
		20:51 Physics	4

## SECRETARIAL SCIENCE DEPARTMENT

Students preparing for executive secretarial and office positions may choose between two programs offered in Secretarial Science: a two-year associate course, 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 1 1/2 units of Algebra in high school.

\*\*\*Students in Business Administration may count only 8 hours of Advanced ROTC toward their graduation requirement.

### 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
43:53-54	Typewriting .....	6	43:61	Shorthand Principles .....	4
43:27	Filing Systems .....	2	43:62	Shorthand and Trans. ....	3
43:25	Machine & Slide Rule .....		43:55	Advanced Typing and .....	
	Calculation .....	1		Secretarial Machines .....	3
43:23	Introduction to Office .....		39:21-22	Accounting .....	6
	Problems .....	2	40:61	Bus. Org. and Mgt. ....	3
Third Year		Credits	Fourth Year		Credits
43:93	Bus. Communications .....	2	43:165	Executive Secretarial Dictation ..	3
43:63-64	Adv. Dictation and Trans. ....	8	43:292	Executive Office Projects .....	3
6:45	Economics .....	3	43:296	Office Organization and .....	
40:141	Business Law .....	3		Management .....	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
43:63	Advanced Dictation and .....		43:64	Advanced Dictation and .....	
	Transcription .....	4		Transcription .....	4
43:23	Introduction to Office Problems ..	2	43:27	Filing Systems .....	2
40:61	Business Org. and Mgt. ....	3	43:296	Office Org. & Mgt. ....	3
39:21	Accounting .....	3	39:22	Accounting .....	3
43:25	Machine & Slide Rule .....		43:55	Advanced Typewriting and .....	
	Calculation .....	1		Secretarial Machines .....	3
43:93	Business Communications .....	2	43:292	Executive Office Projects .....	3

### SPECIAL TWO-YEAR CERTIFICATE COURSE IN SECRETARIAL SCIENCE

This curriculum is now included in the Associate Program. A description will be found in the General College section of this catalog.

## THE COLLEGE OF LAW

STANLEY A. SAMAD, LL.M., *Dean*

### HISTORY OF THE COLLEGE

The University of Akron College of Law was established on September 1, 1959, as the successor to The Akron Law School. The Akron Law School had been founded in September 1921 by Judge C. R. Grant, Paul S. Short and Charles A. Neale. The Akron Law School was a charter member of the League of Ohio Law Schools, the accrediting agency of the Supreme Court of Ohio, and at the time of the merger with The University of Akron was an applicant for approval by the Section of Legal Education and Admission to the Bar, American Bar Association. The University of Akron College of Law is a member of the League of Ohio Law Schools and is seeking approval by the American Bar Association.

### ADVISORY COMMITTEE

The University of Akron College of Law Committee of The Akron Bar Association serves as the Advisory Committee to the College of Law.

The members of the Committee are: Mr. James Olds, Chairman, Mr. Hugh M. Colopy, Mr. Raymond J. McGowan, Mr. Charles E. Pierson, Mr. John R. Quine, Mr. J. P. Riddle, Mr. Joseph Wise, Mr. John Wortman.

### OBJECTIVES OF THE COLLEGE

The University of Akron College of Law offers a four-year program of legal education leading to the Bachelor of Laws degree. The aims of the program of instruction are to prepare students for a learned profession, equipped to fulfill their roles as protectors of the rights of the public and of the individual, as officers of the courts, as leaders in governmental affairs, and as designers of a legal system to meet more effectively the changing needs of our society. In furtherance of these aims the program and methods of instruction are designed to impart information concerning legal institutions, jurisprudence, and basic principles of the substantive and procedural law, to develop the powers of legal analysis and legal reasoning, to develop an active and critical attitude rather than a passive approach toward law and its social implications, to instill a sense of professionalism and a high sense of ethical values in the practice of law and to develop technical skills in legal advocacy, draftmanship, research and writing.

The casebook method of instruction is extensively employed throughout the four-year period of instruction. During the last half of the third year, and in the fourth year, in addition to the casebook method, the method of instruction of problem solving and discussion in small groups is provided, through seminars and a reasonable freedom in selection of electives.

### THE PLAN OF INSTRUCTION

The scheduling of courses is based on the plan of part-time study of law with all classes meeting in the evening, three nights a week, leaving time on

the alternate nights and weekends for preparation and research. To meet the needs of part-time students, the schedule of courses is designed to provide a normal semester load of nine credits. The summer session is an integral part of the program. Although students are on occasion permitted to depart from the normal program, they are encouraged to follow the established sequence in order to maintain the proper progression of courses and to promote the student's steady development.

Except in the case of transfer students admitted to advanced standing, the Bachelor of Laws degree may be obtained in four academic years, consisting of four fall semesters, four spring semesters, and three summer sessions.

#### REQUIREMENTS FOR ADMISSION

An applicant for admission to the College of Law desiring to become a candidate for the Bachelor of Laws degree must satisfy the following requirements:

1. He must be of good character.
2. He shall show evidence that he has received a Bachelor's degree from a regionally accredited college or university in a field of study deemed appropriate by the faculty of the College of Law, with an academic average better than the minimum average required for such degree.
3. He must have taken prior to admission the Princeton Law Aptitude Test and earned a satisfactory score.

The procedures for securing admission are as follows:

1. Obtain an application form for the College of Law from the University Registrar.
2. File with the University Registrar two official copies of the transcript of the record from the institution which awarded the degree, at least one week prior to the official registration period published in the University Calendar.
3. Arrange to take the Princeton Law Aptitude Test which is given by the University, or submit evidence of the score if the test was taken elsewhere.
4. Arrange for a personal interview with the Dean of the College of Law.

All inquiries and correspondence pertaining to admission should be sent to:

The Registrar  
The University of Akron  
Akron 4, Ohio

#### ADMISSION TO ADVANCED STANDING

A law student who has completed part of his law course at a school on the approved list of the Section of Legal Education and Admission to the Bar, American Bar Association, and who is eligible for readmission to his former law school, may be admitted to advanced standing. A student desiring admission to advanced standing shall (1) obtain from the Dean of his former law school a letter setting forth the fact that he is eligible for further instruction, and consent to the transfer; (2) submit evidence of meeting the admission requirements of the University of Akron College of Law; (3) present an official transcript of all work completed at his previous law school. Credit to be given for the prior law school work shall be that determined by the Dean of the College of Law.

### AUDITORS

An auditor is a student who, with the permission of the Dean of the College of Law, is enrolled for a course without credit. The auditor is required to do all the work prescribed for the regular student enrolled for credit except taking examinations. The fee for the auditor is the same as for a regular student.

### STANDARDS OF ACADEMIC WORK

The following system of grades is used in recording the quality of a student's academic work:

<i>Grade</i>	<i>Quality Points Per Credit</i>
A Excellent	4
B Good	3
C Satisfactory	2
D Poor	1
F Failed	0
I Incomplete	0

Academic averages are computed by dividing the quality points achieved by the hours attempted. When a course is failed and repeated, the hours and the quality points involved each time are included in the computation as if the repeated course were an independent course.

A quality point ratio of less than 2 is unsatisfactory. A law 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.

If a student withdraws from a course on the recommendation of the Dean it will not count as work attempted. If a student leaves a course without the recommendation of the Dean, or is dropped from any course by the Dean, he is given a failing grade in the course and it is counted as work attempted.

### REQUIREMENTS FOR A DEGREE

The degree of Bachelor of Laws is conferred upon students of good character who have been recommended by the Dean and faculty of the College of Law and who have:

1. Completed satisfactorily all required courses which shall include two seminars and enough electives to earn 80 credits.

Those students who were enrolled in the Akron Law School prior to January 1, 1957 and who were in attendance during the 1959-1960 academic year shall be awarded the degree on the basis of completing 74 credits. Those students from the Akron Law School who entered after January 1, 1957 and who were in attendance during the 1959-1960 academic year shall be awarded the degree on the basis of completing 76 credits.

2. Attained at least a 2 average for all courses taken and at least a 2 average for the senior year.

3. Spent their last year in residence at the University unless excused by the Dean.

In addition, the faculty of the College of Law reserves the right to require a non-credit course of a clinical nature in legal aid as a condition for the degree.

### FEEES AND EXPENSES

The University Catalog should be consulted for rules governing non-resident tuition and for special and miscellaneous fees that may be applicable.

A resident of Akron shall pay a fee of \$27.00 per credit for all credit work.

A nonresident of Akron shall pay a fee of \$32.00 per credit for all credit work.

Each student shall pay a library fee of \$15.00 for each semester and a \$5.00 fee for each summer session, irrespective of the number of credits for which he is enrolled.

### REFUNDS

The University Catalog should be consulted for regulations regarding refunds. The schedule of refunds set out therein is as follows:

	<i>Regular</i>	<i>Summer</i>
First Week .....	80%	60%
Second Week .....	60%	20%
Third Week .....	40%	0
Fourth Week .....	20%	0
Thereafter .....	0	0

No refunds shall be issued when a student is dismissed or suspended from the College of Law for disciplinary reasons.

### 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.

### LIBRARY

The law library is the laboratory of the College of Law and is most important in providing the law student with materials for research and study. The law library contains approximately 16,000 volumes. University libraries comprising more than 100,000 volumes are available to law students.

### ENROLLMENT IN OTHER SCHOOLS

A student who is enrolled in the program leading to the Bachelor of Laws degree may not take work in any other school, college, or course of instruction, unless he first obtains the written consent of the Dean. No student may attend a course designed as a review for the bar examination until he has completed all course requirements for the Bachelor of Laws degree.

### BAR ADMISSION REQUIREMENTS

Each student entering the College of Law is encouraged to read Rule XIV of the Supreme Court of Ohio, *ADMISSION TO THE BAR*, or the comparable rule of court in the jurisdiction wherein he desires to take the bar examination and practice law.

The Supreme Court of Ohio requires that each student entering a law school shall file during his first semester in law school an application for registration as a law student, evidence of his meeting the pre-legal educational requirements established by the Rule, a legible set of fingerprints on a prescribed form, and a filing fee of \$10.00. As a condition for taking the bar

examination, the applicant must file an application not less than 90 days prior to the date of the bar examination, a certificate of the College of Law that the student has, or will, complete all courses required by the Rule and a filing fee of \$30.00. The Rule requires that a student must have had instruction in the following courses as a condition of taking the bar examination: Business Associations (including Agency, Partnerships and Private Corporations) Constitutional Law, Contracts, Criminal Law, Equity (including Trusts) Evidence, Negotiable Instruments, Pleading and Practice, Torts, and Wills. Further, the student must be certified as having had instruction in Legal Ethics and in four electives from the list contained in the Rule.

The appropriate forms may be obtained from the College of Law on request. It is the responsibility of the student to initiate a request for, to execute properly, and to file timely, the requisite forms.

## STUDENT ORGANIZATIONS

### HONORARY

Law students are eligible for membership in ALPHA SIGMA LAMBDA, a national honorary fraternity for evening students. Nomination to membership is based on the completion of thirty or more credits with a 3.25 average.

### CLUBS

THE STUDENT BAR ASSOCIATION is designed to introduce law students to the professional responsibilities and problems they will face upon admission to the bar, to provide closer integration among the future lawyers and present-day leaders of the legal profession, to promote professional responsibility, and to acquaint law students with the opportunities and obligations to improve the administration of justice through the organized bar. In addition, the Student Bar Association provides a form of student government and promotes good fellowship.

An appellate moot court program known as THE CASE CLUB is offered to all students. The Case Club has as its purpose the development of skills in legal research, brief writing and oral advocacy before a moot appellate tribunal. All first-year students enrolled in Legal Writing are required to participate. Participation in the Case Club thereafter is voluntary. Successful teams in the Case Club competition are eligible to represent the College of Law in national moot court competition. The Case Club is student-managed.

Student organizations sponsored by the Evening and Adult Education Division of The University of Akron are available to law students.

## BOOK AWARDS

The W. H. Anderson Company, Publisher, awards to the highest ranking student in Corporations each year a copy of ANDERSON'S OHIO CORPORATION DESK BOOK, and to the highest ranking student in Pleading and Practice a copy of LEYSHON'S OHIO PRACTICE MANUAL, Second Edition.

The Lawyers Co-operative Publishing Company and Bancroft-Whitney Company, joint publishers of AMERICAN JURISPRUDENCE, award to top ranking students in about twenty courses a specially bound copy of the equivalent title from their multi-volume publication.

## CURRICULUM

*First Year*

First Semester	Credits	Second Semester	Credits
50:211* Contracts I .....	3	50:212* Contracts II .....	3
50:213* Introduction to Law .....	2	50:214* Property I .....	3
50:215* Legal Research .....	1	50:216* Legal Writing .....	1
50:217* Torts I .....	3	50:218* Torts II .....	2

Summer Session: 50:219\* Agency-Partnership.....3 Credits

*Second Year*

50:221* Corporations I .....	3	50:222* Corporations II .....	1
50:223* Legislation .....	3	50:224* Equity .....	4
50:225* Property II .....	3	50:226* Property III .....	3
		50:228* Legal Profession .....	1

Summer Session: Electives..... 2-3 Credits

50:252 Creditors' Rights .....	3	50:256 Restitution and Damages .....	2
50:254 Domestic Relations .....	2	50:258 Security Transactions .....	3

*Third Year*

50:231* Commercial Transactions I....	3	50:232* Commercial Transactions II .....	1
50:233* Evidence I .....	3	50:234* Evidence II .....	1
50:235* Code Pleading .....	3	50:236* Constitutional Law .....	4
		50:238* Criminal Law .....	3

Summer Session: Electives or Seminars..... 2-3 Credits  
(See Summer Session Electives as set out in Summer Session Second Year)

*Fourth Year*

50:241* Trusts .....	3	50:242* Trial Practice .....	3
50:243* Wills .....	2	Electives or Seminars .....	5-6
Electives or Seminars .....	4		

<i>First Semester Electives</i>		<i>Second Semester Electives</i>	
50:251 Future Interests .....	2	50:250 Conflict of Laws .....	3
50:253 Municipal Corporations .....	2	50:262 Seminar in Estate Planning....	2
50:255 Research Problems .....	1-3	50:264 Seminar in Federal Taxation .....	3
50:261 Seminar in Administrative Law .....	2	50:266 Seminar in Jurisprudence .....	2
50:263 Seminar in Patent, Trademark, and Copyright Law .....	2	50:268 Seminar in Labor Law .....	2

\*Required courses.

## 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: Biology, 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. 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.

#### FEEES

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

A number of scholarships and fellowships are available for graduate study leading to the Master of Science or Doctor of Philosophy degree in rubber and polymer chemistry. They range in amount up to annual stipends of \$1,700. In addition, tuition and fees may be remitted by the University to the recipients of some fellowships in return for nine hours of work per week as laboratory assistants.

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 section of the Catalog on "Scholarships, Fellowships, Awards, Grants-In-Aid, and Loans."

#### 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 course 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:

**Biology:** Research and thesis 6 credits. A minor may be taken in approved graduate courses, including education. Participation in seminars and demonstration, prior to last semester of enrollment, of reading proficiency in a foreign language appropriate to the field of study. Summer study at a biological station recommended.

**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, 297-298, 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; a comprehensive examination covering three fields to be determined in conjunction with the departmental adviser; demonstration, prior to the last semester of enrollment, of reading proficiency in a foreign language appropriate to the field of study.

**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 300, 400 and 402; oral examination.

#### 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 courses:
  - 33 :301. Computers and Computer Methods, 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 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 9 of the 30 credits required:

27:300	Philosophies of Education .....	3 credits
27:301	Developmental Procedures in Learning .....	2 credits
27:303	Techniques of Research .....	2 credits
27:499	Research in Education .....	2 credits

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

##### Required:

27:314	Evaluation and Diagnosis of Learning Problems .....	3 credits
27:330	Elementary School Curriculum and Instruction .....	2 credits
27:436	Seminar in Elementary Education .....	4-8 credits

##### Electives:

Sufficient to make 30 credits which may include up to 12 semester hours in pertinent electives from course offerings outside the College of 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

## Required:

27:302	Principles of Guidance .....	2 credits
27:319	Secondary School Curriculum and Instruction .....	2 credits
Graduate study in subject field (6 credits of 200 level courses will be accepted) .....		9-14 credits

## Electives:

27:308	Advanced Child & Adol. Psych. ....	2 credits
27:314	Evaluation and Diagnosis of Learning Problems .....	3 credits
27:320	Secondary School Administration .....	2 credits
27:437	Seminar in Secondary Education .....	2-6 credits

## ELEMENTARY SCHOOL PRINCIPAL

## Required:

27:322	Supervision of Instruction .....	3 credits
27:330	Elementary School Curriculum and Instruction .....	2 credits
27:331	Elementary School Administration .....	2 credits
27:345	Principles of Educational Administration .....	3 credits
At least two (2) additional credits from courses in Administration, Supervision and Curriculum .....		2 credits

## Electives:

Any other courses to make minimum of 30 credits which may include up to 6 credits in pertinent electives from course offerings outside College of Education. The following courses in Education are recommended:

27:350	Legal Basis of Education .....	2 credits
27:352	Principles of School Finance .....	2 credits
27:354	School and Community Relations .....	2 credits
27:314	Evaluation and Diagnosis of Learning Prob. ....	3 credits
27:420	School Building and Construction .....	2 credits
27:436	Seminar in Elementary Education .....	2-4 credits

## SECONDARY SCHOOL PRINCIPAL

## Required:

27:302	Principles of Guidance .....	2 credits
27:319	Secondary School Curriculum and Instruction .....	2 credits
27:320	Secondary School Administration .....	2 credits
27:322	Supervision of Instruction .....	3 credits
27:345	Principles of Educational Administration .....	3 credits

## Electives:

Any other courses to make a minimum of 30 credits, which may include up to 6 credits in pertinent electives from course offerings outside College of Education. The following courses in Education are recommended:

27:350	Legal Basis of Education .....	2 credits
27:352	Principles of School Finance .....	2 credits
27:354	School and Community Relations .....	2 credits
27:420	School Building and Construction .....	2 credits
27:437	Seminar in Secondary Education .....	2-6 credits
27:314	Evaluation and Diagnosis of Learning Problems .....	3 credits
27:441	Evaluating Educational Institutions .....	2 credits

**Required: SCHOOL SUPERINTENDENT**

27:345	Principles of Educational Administration .....	3 credits
27:322	Supervision of Instruction .....	3 credits
27:319	Secondary School Curriculum and Instruction .....	2 credits
27:330	Elementary School Curriculum and Instruction .....	2 credits
27:350	Legal Basis of Education .....	2 credits
27:352	Principles of School Finance .....	2 credits
27:420	School Building and Construction .....	2 credits
At least eight (8) additional credits in courses in administration and supervision .....		8 credits

**Electives:**

Any other courses considered necessary or desirable by student, with advice of his counselor, which may include up to 6 credits in pertinent electives from course offerings outside College of Education.

**Required: SUPERVISOR**

27:319	Secondary School Curriculum and Instruction .....	2 credits
27:322	Supervision of Instruction .....	3 credits
27:330	Elementary School Curriculum and Instruction .....	2 credits

**Electives:**

Any other courses to make minimum of 30 credits which may include up to 6 credits in pertinent electives from course offerings outside College of Education. The following courses in Education are recommended:

27:314	Evaluation and Diagnosis of Learning Problems .....	3 credits
27:320	Secondary School Administration or Elementary School Administration depending upon level for which preparing .....	2 credits
27:436	Seminar in Elementary Education .....	2-6 credits
27:345	Principles of Educational Administration .....	3 credits
27:437	Seminar in Secondary Education .....	2-6 credits

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.

**Required: EXECUTIVE HEAD**

27:345	Principles of Educational Administration .....	3 credits
27:322	Supervision of Instruction .....	3 credits
27:319	Secondary School Curriculum and Instruction .....	2 credits
27:330	Elementary School Curriculum and Instruction .....	2 credits
27:350	Legal Basis of Education .....	2 credits
27:352	Principles of School Finance .....	2 credits

**Electives:**

Any other courses to make minimum of 30 credits, which may include up to 6 credits in pertinent electives from course offerings outside College of Education. The following courses in Education are recommended:

27:320	Secondary School Administration .....	2 credits
27:331	Elementary School Administration .....	2 credits
27:420	School Buildings and Construction .....	2 credits
27:436	Seminar in Elementary Education .....	2-6 credits
27:347	Seminar in Secondary Education .....	2-6 credits
27:441	Evaluating Educational Institutions .....	2 credits
27:445	Administration of Student Personnel Programs .....	2 credits

**Prerequisites: GUIDANCE COUNSELOR**

30:206	Normal and Abnormal Personality .....	3 credits
30:207	Psychological Tests and Measurements .....	3 credits
30:208	Techniques in Guidance and Counseling .....	2 credits

**Required:**

27:319	Secondary School Curriculum and Instruction	
or		
27:330	Elementary School Curriculum and Instruction	2 credits
27:320	Secondary School Administration	
or		
27:331	Elementary School Administration	2 credits
27:314	Evaluation and Diagnosis of Learning Problems	2 credits
27:302	Principles of Guidance	2 credits
27:304	Techniques of Guidance	2 credits
27:309	Vocational Guidance and Occupational Information	2 credits
27:315	Practicum in School Counseling	1-4 credits
30:304	Advanced Developmental Psychology	3 credits

**Electives:**

Choice of graduate education courses in administration, curriculum and instruction or of 200 or above level courses in sociology, economics, labor relations, or psychology if the candidate has the proper undergraduate program.

**SCHOOL PSYCHOLOGIST****Prerequisites:**

30:206	Normal and Abnormal Personality	3 credits
30:207	Psychological Tests and Measurements	3 credits
30:208	Techniques in Guidance and Counseling	2 credits

**Required:**

27:330	Elementary School Curriculum and Instruction	2 credits
27:331	Elementary School Administration	2 credits
27:322	Supervision of Instruction	2 credits
27:314	Evaluation and Diagnosis of Learning Problems	2 credits
30:304	Advanced Developmental Psychology	3 credits
30:306	Individual Intelligence Testing I	2 credits
30:307	Individual Intelligence Testing II	2 credits
30:310	Theories of Psychotherapy	2 credits
30:311	The Psychology of Individual Differences	3 credits
30:320	Practicum in Clinical and Counseling Psychology	3 credits

**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 credits
40:374	Financial Management and Policy .....	3 credits
40:390	Marketing Management and Policy .....	3 credits
42:363	Industrial Relations .....	3 credits
  - b. Administration Courses as follow:
 

40:366	Management Behavior—Methods .....	3 credits
40:369	Organizational Theory and Policy Formulation .....	3 credits
2. *General Courses as follow:*

40:350	Administrating Costs and Prices .....	3 credits
6:241	Economic Analysis .....	3 credits
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.

#### 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 the last sentence 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

27:300	27:314	27:330	27:356
27:301	27:315	27:331	27:420
27:302	27:317	27:335	27:433
27:303	27:319	27:345	27:436
27:304	27:320	27:350	27:437
27:309	27:321	27:352	27:441
27:311	27:322	27:354	27:445

## 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 33:303

## HISTORY

12:301 12:311-312

## INDUSTRIAL MANAGEMENT

42:307 42:363 42:398

## MECHANICAL ENGINEERING

36:300 36:301 36:302 36:303 36:304

## PHYSICS

20:301 20:304L 20:306L 20:311-312 20:317-318 20:351  
20:304 20:306 20:307 20:314 20:331-332 20:352  
20:309-310 20:314L 20:333

## POLITICAL SCIENCE

21:301 21:302 21:303 21:311

## PSYCHOLOGY

30:300 30:306 30:310 30:313 30:315 30:320  
30:301 30:307 30:311 30:314 30:317 30:400  
30:304 30:309 30:318 30:402

## 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 the last sentence 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 :209 2 :225-226

BIOLOGY

3 :207-208 3 :217 3 :235 3 :255 3 :258 3 :267-268  
3 :215-216 3 :218-219 3 :248 3 :256 3 :265

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 :240  
7 :202 7 :207 7 :212 7 :214 7 :221 7 :223 7 :297-298

GENERAL BUSINESS

40 :247 40 :268 40 :279 40 :293 40 :296 40 :297-298  
40 :264 40 :277 40 :291

HISTORY

12 :218 12 :222 12 :224 12 :242 12 :246 12 :253  
12 :219 12 :223 12 :225 12 :245 12 :251 12 :254  
12 :261

INDUSTRIAL MANAGEMENT

42 :256 42 :260

MATHEMATICS

17 :201 17 :207 17 :212 17 :215 17 :218 17 :221  
17 :204 17 :208 17 :213 17 :216 17 :219 17 :257  
17 :206 17 :210 17 :214 17 :217 17 :220

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 :204 30 :206 30 :208 30 :210 30 :212 30 :216  
30 :205 30 :207 30 :209 30 :211 30 :215

SOCIOLOGY

22 :202 22 :206 22 :213 22 :216 22 :219-220  
22 :204 22 :210 22 :215 22 :217 22 :221

SPEECH

24 :271-272 24 :273-274 24 :277 24 :290 24 :291-292 24 :293

## EVENING AND ADULT EDUCATION DIVISION

WILLIAM A. ROGERS, ED.M., *Acting 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.

Announcements of courses and programs may be obtained from the Evening Division office in Buchtel Hall. Bulletins 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 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.

## CITIZENS ADVISORY COMMITTEE

The Division maintains a Citizens Advisory Committee of prominent civic leaders with various fields of interest related to adult education. This Committee, appointed by the University Board of Directors, meets periodically with the Dean and his faculty associates to discuss such matters as academic policies, admission requirements, instructional and research matters, and teaching facilities.

The members of this Committee are: Mr. Arthur Brintall, Mr. Chester Conner, Mr. Joseph Glazer, Mrs. George Leonard, Mrs. D. A. MacDougall, Mr. Douglas Mueller, Mrs. Fred Nimmer, Mr. Thomas Powers, and Mr. T. W. Prior.

## 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-ninth annual Summer Session (1960) is organized as follows:

1. Six-Week Day Session ..... June 20 — July 29
2. Eight-Week Engineering College Program ..... June 20 — August 12
3. Eight-Week Evening Session ..... June 20 — August 12
4. Post-Session ..... August 1 — August 26

### 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 1960 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 1960 Summer Session is scheduled as follows:

- |   |                    |
|---|--------------------|
| Spicer Elementary, Barberton Elementary ..... | June 20 — July 29  |
| Barberton High School .....                   | June 20 — July 29  |
| Akron Central High School .....               | June 13 — August 5 |
| West Junior High School .....                 | June 13 — August 5 |

## RESERVE OFFICERS' TRAINING CORPS

The United States Government established a unit of the Army Reserve Officers' Training Corps at The University of Akron in 1919, making it one of the oldest in the country. In 1946, the United States Air Force established a unit of the Air Force Reserve Officers' Training Corps at the University.

Both programs are divided into two parts: the basic course to include the Freshman and Sophomore years and the advanced course which covers the Junior and Senior years.

### 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 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 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 thirteen 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. Upon being commissioned he will be called to active duty as an officer for either six months or two years, unless deferred. Deferment is granted for up to three years to work on a Master's or Doctor's degree.

On the basis of scholastic attainment and demonstrated leadership, students may be designated distinguished military students and be given an opportunity to qualify for a regular Army commission upon graduation.

The Army ROTC allows credit for RFA training for six months.

Army ROTC cadets may, during their senior (graduating) year, enroll in the Army Flight Training Program. This program, leading to an FAA-approved pilot's license and offered without cost to the cadet is designed to afford an opportunity for those who, upon being commissioned, wish to qualify for Army pilot training. Consisting of 35 hours of flying instruction and 35 hours of ground instruction, the program is extra-curricular and is taken in addition to regular classroom work.

The constantly expanding field of rockets and guided missiles offers many opportunities for Army officers in the operational area (firing and controlling missiles) and in the research and development area (such as engineers, physicists, biologists, chemists, etc.).

### 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, meeting rooms, 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; Campus Christian Fellowship; Chemistry Club; Commerce Club; Eastern Orthodox Christian Fellowship; Economics Association; Future Teachers of

\*A detailed description of the objectives and purposes of these organizations is given in the "A" book, a handbook of student rules and regulations. N means National. L means Local.

America; History Club; Home Economics Club; Independent Student Organization; 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; Society for Advancement of Management; Sociology Club; Speech Club; Student Bar Association; Tertulia Espanola; The United Nations Club; 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; Ivyettes (L) Chartered 1959.

#### FRATERNITIES

Alpha Epsilon Pi (N) Chartered 1941; Alpha Phi Alpha (N) Chartered 1957; Lambda Chi Alpha (N) Chartered 1919; Phi Delta Theta (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 inter-collegiate 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, located in Buchtel Hall, sponsors special community conferences and workshops, as well as opportunities for informal adult study.

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.

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.

### 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, the Vice Presidents, the Deans

of the General College and of the Evening and Adult Education Division, the Registrar, Director of Student Personnel, Treasurer, Bursar, Director of University Relations (including Public Relations), the Institute for Civic Education and the IBM Office.

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 Provisional 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 has a collection of 120,000 volumes and 886 periodical titles. Among its distinctive features are the unique library of the Rubber Division of the American Chemical Society and the Herman Muehlstein collection of rare British and American first editions.

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.

The new Men's Dormitory (accommodating 98) opens in the Summer of 1960, on E. Buchtel Ave. opposite Knight Hall.

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, Post Office and Central Stores, 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. The Armory, near Crouse Gym, houses the Army R. O. T. C.

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, 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.

### 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, 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.

### AKRON DISTRICT SOCIETY OF PROFESSIONAL ENGINEERS

A scholarship in the amount of \$250 a year for a Junior or Senior Engineering student.

### AKRON TEACHER EDUCATION SCHOLARSHIPS

Two scholarships a year are sponsored jointly by The University of Akron, the Akron Board of Education and the Akron Education 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 Education 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 awarding 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.

### AKRON UNIVERSITY ALUMNI FUND SCHOLARSHIPS

Akron University alumni designated the total amount of their 1959 annual fund drive for scholarships for young men or women of excellent scholastic accomplishment in high school work. It is the intention that these scholarships be four-year awards, subject to review of the University Committee on Scholarships each semester. There are no geographical restrictions. The University Committee on Scholarships will award the scholarships upon the recommendation of the Assistant Registrar.

### AKRON UNIVERSITY ASSOCIATES SCHOLARSHIPS

The purpose of these scholarships is to assist well-qualified students who are in need of financial aid to attend The University of Akron. The scholarships will be administered by the University Committee on Scholarships. Scholarships will cover maintenance fees only and may be renewed each year contingent upon high scholastic achievement.

### AKRON UNIVERSITY AWARDS

Upon recommendation of the University Committee on Scholarships, students who possess talent in athletics, the dramatic arts, journalism, music, or fine arts and an overall academic record of acceptable quality, The University of Akron provides an award to the student according to the University Committee on Scholarships estimate of need. Such awards are subject to review each semester.

## ALPHA KAPPA ALPHA SCHOLARSHIP

The purpose of this scholarship is to encourage high scholastic attainment among Negro college women. The recipient must be a second semester sophomore, a junior or a first semester senior with a cumulative average of three point. The amount of the scholarship shall be a minimum of \$100 or a maximum of \$176, to be applied to fees only.

## 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 SOCIETY OF CIVIL ENGINEERS MEMORIAL AWARD

The purpose of this fund is to honor the memory of members of American Society of Civil Engineers who have made outstanding contributions to the civil engineering profession. The fund will pay one year's dues in the Society to a graduating member of the Akron University Student Chapter of American Society of Civil Engineers. The student is to be selected by the Dean of the Engineering College as representing the best qualities of a civil engineer.

## 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.

## THE BREWSTER AWARDS

A fund established by Mr. and Mrs. Evan B. Brewster provides money for any number of awards not to exceed \$125 a year to aid freshman pledges of Lone Star and/or Phi Delta Theta and/or Kappa Kappa Gamma during their initial year. Awards will be made by the University Scholarship Committee upon the recommendation of the Director of Student Personnel.

## 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.

## 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 \$200 a year is available to full-time women students. Fresh 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 TIRE & RUBBER COMPANY FELLOWSHIP**

A fellowship in the Department of Chemistry is offered by the Firestone Tire & Rubber Company for the study of the chemistry and technology of rubber. The fellowship is open to graduates of standard American colleges and universities and is in 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**

The Board of Directors of the University has voted to establish a maximum of 13 scholarships per year to be awarded to graduates of Akron high schools in the amount \$150 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 \$300 a year each 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.

**THE GENERAL TIRE & RUBBER COMPANY RESEARCH FELLOWSHIP**

This fellowship is given to a graduate student in the Department of Chemistry who is interested in working in the field of polymer chemistry.

**GOODYEAR TIRE & RUBBER COMPANY FELLOWSHIP**

A fellowship in the value of \$1,700 per year is available to all graduates of standard American colleges. This fellowship is offered for the study of the chemistry and technology of rubber in the Department of Chemistry.

**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. Recommendation is made by the head of the Chemistry Department.

**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.

**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.

**THE MCNEIL MACHINE & ENGINEERING COMPANY SCHOLARSHIPS**

Two four-year scholarships each year have been established by the McNeil Machine and Engineering Company in the amount of \$1,700 each. A scholarship will be renewable each semester contingent upon the student's satisfactory scholastic progress. The scholarships will be awarded to students enrolling in the College of Engineering with preference for those in the field of mechanical engineering. Scholarship recipients will have an opportunity for summer employment with the company and upon completion of their degree in engineering, will receive priority in consideration for employment with the company; however, no obligation will be compelling with the company or with the student for such employment.

**LEON F. MOLDAVSKY SCHOLARSHIP**

This scholarship, in the amount of \$250 a year, 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.

**HERMAN MUEHLSTEIN SCHOLARSHIPS**

Two scholarships in the amount of \$400 a year each were established by Herman Muehlstein for needy students of high quality. The Scholarship Committee will name the recipients.

**JULIUS MUEHLSTEIN SCHOLARSHIPS**

These scholarships amount to \$300 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.

**MUSIC DEPARTMENT WORK SCHOLARSHIP**

Each member of the Music Faculty may award to one student a work scholarship each semester, covering the cost of one lesson per week in applied music, when such study is over and above the minimum course requirements in applied music, in return for a stated number of hours per week of work for the faculty member awarding the scholarship.

**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. Recipient must be an entering Freshman planning to enter the field of Mechanical or Electrical Engineering. The University Scholarship Committee shall select one who appears 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 woman in the Department of Secretarial Science to defray normal collegiate expenses. The student is selected by the Department on the basis of criteria mutually acceptable to the Department and to Tire Town Chapter, N. S. A. This scholarship is known as the Louise Gamble Memorial Scholarship.

**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.

**DOWNTOWN OPTIMIST CLUB OF AKRON SCHOLARSHIP**

A scholarship in the amount of \$200 a year was established with the purpose of encouraging talented young people to enroll in the University and pursue a career of benefit to themselves and society.

**DOWNTOWN AND WEST AKRON OPTIMIST CLUBS SCHOLARSHIP**

A scholarship in the amount of \$175 a semester is sponsored jointly by the Optimist Club of Downtown Akron and the West Hill Branch.

**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.

**THE PHILADELPHIA RUBBER GROUP SCHOLARSHIP**

The Philadelphia Rubber Group offers an annual scholarship of \$500, tenable at the University of Akron, subject to the following restrictions: (1) the holder of the scholarship must be a full-time graduate student in the field of rubber and polymer chemistry (2) he must have attended a high school, preparatory school, or college in the states of Pennsylvania, New Jersey, Delaware or Maryland (3) if no applicant has the qualifications set forth in provision 2, the scholarship may be awarded to some other qualified candidate.

**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 \$150 is made to the outstanding Junior in the field of purchasing and a \$100 award is made to the outstanding Senior in the field of purchasing among the students in the College of Business Administration.

**WILLIAM S. RICHARDSON FELLOWSHIP**

This is an annual fellowship in the amount of \$1,200 for a student who will serve as a graduate assistant in the undergraduate teaching program while pursuing graduate work in the Department of Chemistry.

**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, upon recommendation of the college faculty.

**CLETUS G. AND CLARA E. ROETZEL SCHOLARSHIP FUND**

An endowment fund with earnings to be used to provide a scholarship or scholarships to worthy students and a matching amount to be used for the general operating expenses of the University.

**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.

**RUBBER AGE AWARD**

An award of \$100 each to the students writing the best master's thesis and the best doctoral thesis on some aspect of rubber chemistry or technology.

**MORRIS SACKS SCHOLARSHIP FUND**

Mr. and Mrs. Alex Schulman donated shares of A. Schulman, Inc., to establish this scholarship in memory of Morris Sacks. The income from this fund is to be used annually for scholarships, with a matching amount to be used for current operating expenses.

**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 \$250 a year 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.

**THE 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. Applicant must have the recommendation of the Scholarship Committee of the Tuesday Musical Club and the Music Department of The University of Akron.

## UNITED STATES RUBBER RESEARCH GRANT

This grant is to be used to support basic research in anionic polymerization under the supervision of the Director of the Institute of Rubber Research. The recipient must be a graduate student in the Department of Chemistry who is working in the field of polymer chemistry.

## LYNN F. (PINDY) WAGNER SCHOLARSHIPS

These scholarships amount to \$352 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 ART LEAGUE

An award made to an outstanding student majoring in Art, in the amount of \$50 a semester.

## WOMEN'S AUXILIARY OF THE AKRON DISTRICT SOCIETY OF PROFESSIONAL ENGINEERS SCHOLARSHIP

An award of \$250 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.

## NATIONAL DEFENSE EDUCATION LOAN FUND

The University administers these loans under the following provisions: the student must (a) be in need of the amount of the loan to pursue a course of study; (b) be capable of maintaining good standing in such course; and (c) have been accepted for enrollment as a full-time student, or, if already attending an institution, be in good standing and in full-time attendance as an undergraduate or graduate student. Repayment begins one year after a borrower ceases to pursue a full-time course of study at an institution of higher education, and ends 11 years thereafter. Interest rate is 3%. Up to one-half of any loan (plus interest) is canceled for service as a full-time teacher in a public elementary or secondary school.

Other Loan Funds available are:

Akron College Club Loan Fund  
Akron Council of Parent-Teacher  
Associations Loan Fund  
Maxwell P. Boggs Memorial Fund  
Homer C. Campbell Fund  
Katherine Claypole Loan Fund  
Cuyahoga Portage Chapter D. A. R.  
Loan Fund  
Evening Session Loan Fund

Harriet Hale Loan Fund  
Hermine Z. Hansen Loan Fund  
Indian Trail Chapter of Daughters of  
The American Colonists Loan Fund  
Lichter Foundation Loan Fund  
Mabel Jane Rogers Memorial Fund  
Henry Strong Educational  
Foundation  
Thomas-Litchfield Loan Fund  
Richard J. Witner Loan Fund

## Subjects of Instruction

### GENERAL COLLEGE

#### THE GENERAL STUDIES

#### 1:1-2. WRITTEN ENGLISH. 3 credits each semester.

1:1 is prerequisite to 1:2. 1:6 must be taken concurrently with 1:2.

#### 1:3-4. WRITTEN ENGLISH. 2 credits each semester.

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. 2 credits each semester.

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.

3 credits each semester.

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. 3 credits each semester.

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. 3 credits each semester.

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.  $\frac{1}{2}$  credit each semester.

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 SEMINAR 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.

## ASSOCIATE PROGRAMS

## GENERAL

## 60 :31. MATHEMATICAL ANALYSIS. 3 credits.

Prerequisite, 1 unit of algebra; 1 unit of plane geometry. The number system of algebra; elements and operations of algebra; equalities and inequalities; logarithms, trigonometry of the right triangle and applications; functions and variation.

## 60 :32. MATHEMATICAL ANALYSIS. 3 credits.

Prerequisite, Mathematical Analysis 60:31. Plane trigonometry; numerical and analytical; trigonometric functions of the general angle, reduction formulas, identities and equations, graphical analysis, solution of oblique triangles, special formulas. Various topics from the algebra of Mathematical Analysis 31 will be extended; binomial theorem.

## 60 :33. MATHEMATICAL ANALYSIS. 3 credits.

Prerequisite, Mathematical Analysis 60:32. Analytic geometry of the straight line, circle and conics; functions and limits, differentiation and integration of simple functions with applications; the definite integral with geometric applications; introduction to Boolean Algebra; inequalities; theory of equations.

## INDUSTRIAL ELECTRONICS

## 60 :41. CIRCUIT THEORY. 3 credits. (3-0-3).

Corequisite, Mathematical Analysis 60:32 and Physics 20:52. General laws of A.C. and D.C. circuits, effective values, phasors, resistance, inductance, capacitance, complex numbers, analysis of series and parallel circuits.

## 60 :42. CIRCUIT THEORY. 3 credits. (3-0-3).

Prerequisite, Circuit Theory 60:41. Solution of networks, network theorems, three phase systems, magnetic and electric field concepts.

- 60 :43. ELECTRONICS. 4 credits. (3-1-4).  
Prerequisite, Circuit Theory 60:41. Theory and characteristics of vacuum, gas and photo tubes, semiconductors, rectifier circuits, amplifier circuits.
- 60 :44. ELECTRONICS. 4 credits. (3-1-4).  
Prerequisite, Electronics 60:43. Amplifier circuits continued, oscillators and modulation.
- 60 :45. MACHINERY. 3 credits. (2-1-3).  
Corequisite, Circuit Theory 60:42. Operating principles of A.C. and D.C. machinery including fractional sizes.
- 60 :46. MEASUREMENTS. 3 credits. (2-1-3).  
Prerequisite, Circuit Theory 60:42. Principles of some of the important measuring circuits and instruments.
- 60 :47. ELECTRONICS. 3 credits. (3-0-3).  
Prerequisite, Electronics 60:44 and Machinery 60:45. Investigation of electron circuits used in industry such as motor control, timers, photo controllers, chopper amplifiers and the like.

#### MECHANICAL DESIGN

- 60 :51. STATICS AND DYNAMICS. 3 credits. (3-0-3).  
Prerequisite, Physics 20:51. Prerequisite or corequisite, Mathematical Analysis 60:32. Forces, resultants and couples. Equilibrium of force systems. Trusses. Friction. Moments of inertia. Motion of particles and rigid bodies.
- 60 :52. STRENGTH OF MATERIALS. 3 credits. (3-0-3).  
Prerequisite, Statics and Dynamics 60:51. Corequisite, Mathematical Analysis 60:33. Stress-strain relationships. Stresses. Beams. Columns.
- 60 :53. DESIGN MATERIALS. 3 credits. (3-0-3).  
Prerequisite, Mathematical Analysis 60:31. The fundamental properties of materials and their uses in Engineering. Instrumentation and testing of materials. Application of methods used to vary properties of materials to meet specific design conditions.
- 60 :54. MECHANICAL DESIGN. 4 credits. (1½-2½-4).\*  
Corequisites, Mathematical Analysis 60:33, Design Materials 60:53 and Strength of Materials 60:52. Design of machine elements. Motion in machines. Velocities. Special mechanisms. Determination of design dimensions. Bolts and screw design. Springs, shafting and cranks. Couplings, brakes and clutches. Bearings.
- 60 :55. MECHANICAL DESIGN. 4 credits. (1½-2½-4).\*  
Prerequisite, Mechanical Design 60:54. Complete overall design of a simple machine including detail and assembly drawings for each part or sub-assembly.
- 60 :56. APPLIED THERMAL ENERGY. 3 credits. (2½-½-3).\*  
Prerequisites, Mathematical Analysis 60:33 and Physics 20:52. Thermodynamic principles. Study of cycles involving gases, vapors and mixtures. Applications in I.C. engines, compressors, steam plants and refrigeration.

### 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 :23-24. COSTUME-STYLES AND FASHION. *2 credits each semester.*  
Desirable that 21 precede this course. Design as applied to costume, contributing influences, the human figure, occasion and personality. Discussion and studio. No credit toward major.

\* Three one-hour lectures odd number weeks.  
Two one-hour lectures and one three-hour lab even weeks.  
Total: 51 lectures and 8 three-hour lab periods.

2 :29-30. ART APPRECIATION. *2 credits each semester.*

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. *2 credits each semester.*

Desirable that 21 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.

*2 credits each semester.*

Desirable that 21 or 45 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, 21 and Engineering Drawing 25. Materials and process requirements necessary to design for mass production. Discussion and studio.

2 :45. DRAWING. *2 credits.*

Prerequisite, 21 or permission of Head of Department. Fundamentals of graphic expression: perspective, development of form and space in line, value and texture through variety of media and techniques. Studio.

2 :50-51. DRAWING AND PAINTING. *2 credits each semester.*

Desirable that 45 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 :57. DESIGN IN CRAFTS. *2 credits.*

Prerequisite, 21. Extension of design to objects in space; emphasis on the continuous interaction of physical materials, structural processes and significance of the total organization. Studio.

2 :59. CERAMICS. *2 credits.*

Prerequisite, 21. 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 :69. LIFE DRAWING. *2 credits.*

Prerequisite, 45. Structure of the human figure: its anatomy, proportion and articulation as they relate to the visual arts. 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.

2 :90. ADVANCED DRAWING. *2 credits.*

Prerequisite, 69. Drawing as an expressive, independent art form; development of creative attitudes through individual exploration of various media and techniques. Studio.

## UPPER COLLEGE

2 :102. ADVANCED DESIGN IN CRAFTS. *2 credits.*

Prerequisite, 57. Advanced problems of greater complexity and broader scope: individual exploration of sculptural and structural potentials of materials. Studio.

2 :105. GRAPHIC ARTS. *2 credits.*

Prerequisite, 45 or 69. Design related to screen printing (film and touche), wood cut, wood engraving, acid and dry point etching. Studio.

2 :106-107. WEAVING. *2 credits each semester.*

Prerequisite, 21. 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. *2 credits each semester.*

Prerequisite, 21. Creative design in terms of metals and processes, hammering, piercing, etching, stone setting, enameling. Studio.

2 :115-116. PAINTING. *2 credits each semester.*

Prerequisite, 90 or permission. Creative and individual expression through painting media, color and composition, experimentation in techniques. First semester, oil; second semester, water color. Studio.

27 :121. ART FOR THE GRADES. *2 credits.*

Prerequisite, 21. Art requirements in elementary grades; laboratory work to give teachers a knowledge of materials, mediums, and skill in handling them.

2 :131-132. COMMERCIAL ART. *2 credits each semester.*

Prerequisite, 21 or 90. Professional approach to creative advertising art, lettering, layout, "finished art" techniques, reproduction processes. Studio.

2 :151-152. COSTUME DESIGN. *3 credits each semester.*

Prerequisite, 21 or 69. Professional creative dress design, historic costume as source material. Discussion and studio.

2 :171-172. INTERIOR DESIGN. *3 credits each semester.*

Prerequisite, 57, 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 :179. BOOK ILLUSTRATION. *2 credits.*

Prerequisite 90. Professional approach to book illustration, different age levels, the book as an art form. Studio.

27 :191. METHODS IN TEACHING ART. *3 credits.*

Prerequisite, completion of the required course for art teachers. Study of trends and procedure in teaching and supervision; relation of art to the home, school, and community; observation in selected schools.

2 :200. HISTORY OF ART, ANCIENT, CLASSICAL AND MEDIEVAL. *3 credits.*

Architecture, sculpture, painting and the minor arts in environments of Pre-historic, 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. *3 credits each semester.*

Prerequisite, permission of Head of Department. A restricted field of study to be selected.

2 :209. ADVANCED LIFE DRAWING. *2 credits.*

Prerequisite 90. A more fully developed conception of creative design in terms of the human figure and its significance as a fundamental expressive element. Studio.

2 :225-226. SPECIAL PROBLEMS IN ART. *3 credits each semester.*

Prerequisite, permission of Head of Department. Problems of an advanced nature in the field of special interest. Studio.

## BIOLOGY

## GENERAL COLLEGE

3 :21-22. PRINCIPLES OF BIOLOGY. *4 credits each semester.*

Selected biological principles will be treated in historically oriented lectures, and illustrated by studies in the laboratory. The first semester will deal with principles most easily illustrated by plant materials, the second with those best treated in connection with animals, but neither semester is to be exclusively botany or zoology. Not open to students who have credit in 3:51-52 or 3:61-62.

3 :33. MICROBIOLOGY. *3 credits.*

Sterilization, immunity and disease. Designed primarily for nursing students. Two lectures and two hours laboratory per week.

3 :35-36. NATURE STUDY. *3 credits each semester.*

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. *4 credits each semester.*

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. *3 credits each semester.*

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 :77. INTRODUCTORY BACTERIOLOGY. *2 credits.*

Basic principles of morphology, growth and techniques. Offered as an 8-week course for engineers, others by permission. Three hours lecture and three hours laboratory per week.

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 :113-114. FIELD BOTANY. *3 credits each semester.*

Classification and recognition of plants, principally seed plants of the region. Two lectures and three hours of laboratory a week. 22 is desirable as background.

3 :127. HISTOLOGICAL TECHNIQUE. *2 credits.*

Prerequisite, 22. 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, 22. Study of animal tissues. Two lectures and one 3-hour laboratory period a week.

3 :135-136. HUMAN PHYSIOLOGY. *3 credits each semester.*

Prerequisite, 22 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, 22. 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, 22. Insects, their nature, structure, life history, and economic importance; insect orders, representative families and types. An insect collection is made.

3 :145. INTRODUCTION TO PARASITOLOGY. *3 credits.*

Prerequisite, 22. Principles of parasitism; survey of the more important human and veterinary parasitic diseases.

3 :146. GENERAL GENETICS. *3 credits.*

Principles of heredity illustrated by plant and animal organisms. 22 or equivalent desirable as background.

3 :207-208. BACTERIOLOGY. *4 credits each semester.*

Prerequisites, 22 and Chemistry 22 or 24. Microorganisms, principles of growth, sterilization, infection, immunity, and public health. The physiology of bacteria and pathogenic organisms. Three lectures and three hours of laboratory per week.

3 :215-216. PLANT PHYSIOLOGY. *4 credits each semester.*

Prerequisite, 22 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, 22. 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 :218-219. PLANT MORPHOLOGY. *4 credits each semester.*

Prerequisite, 22. Algae and fungi; evolution of cells, tissues, body plans, organ systems, sexual and asexual reproduction. Liverworts and mosses; ferns and their relatives; vegetative and reproductive adaptations to land environment; evolution of seeds; lower seed plants; flowering plants. Two hours lecture and six hours laboratory per 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 :248. HUMAN GENETICS. *2 credits.*

Prerequisite, 22. Principles of heredity as illustrated by the human species; eugenics problems.

3 :255. VERTEBRATE ANATOMY. *4 credits.*

Prerequisite, 22. Comparative study of all organ systems from fishes to mammals. Two lectures and two 3-hour laboratory periods a week.

3 :256. EMBRYOLOGY OF VERTEBRATES. *4 credits.*

Prerequisite, 255. 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, 22. 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. *1 to 3 credits each semester.*

Individual problem work of laboratory type. Open to Seniors and in exceptional cases to Juniors. Two continuous semesters are advisable.

3 :367-368. RESEARCH. *3 or more credits each semester.*

Individual problem work of advanced nature.

## CHEMISTRY

## GENERAL COLLEGE

5 :21-22. GENERAL INORGANIC CHEMISTRY. *4 credits each semester.*

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. *3 credits each semester.*

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.

## 5 :27-28. GENERAL INORGANIC CHEMISTRY FOR ENGINEERS.

*4 credits each semester.*

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.

*4 credits each semester.*

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. *4 credits each semester.*

Prerequisite, 43. Theory, technique and calculations, acidimetry and alkali-metry, 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. *5 credits each semester.*

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. *2 credits each semester.*

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. *2 credits each semester.*

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. *2 credits each semester.*

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.

*1 credit each semester.*

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. *2 credits each semester.*

Prerequisite, 152. Thermodynamics, fugacity solutions, partial molar quantities, atomic-molecular structure, quantum-statistical principles.

5 :337-338. ADVANCED PHYSICAL CHEMISTRY LABORATORY. *1 credit each semester.*

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. *2 credits each semester.*

Prerequisite, 108. Definitions and classification of polymeric substances into fibers, plastics and rubbers. Sources, structures and properties of naturally occurring polymers. Survey of monomers. Methods of preparation, structure and properties of organic and inorganic polymers. Mechanism of condensation and addition polymerization reactions.

## 5 :303-304. CHEMISTRY OF POLYMERS LABORATORY.

*2 credits each semester.*

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. *2 credits each semester.*

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. *2 credits each semester.*

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.

*2 credits each semester.*

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.

*2 credits each semester.*

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.

*2 credits each semester.*

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. *1 to 3 credits each semester.*

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. *1 to 16 credits each semester.*

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 :45-46. PRINCIPLES OF ECONOMICS. *3 credits each semester.*

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 PROBLEMS. 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 :144. DEVELOPMENT OF ECONOMIC INSTITUTIONS. 3 credits.

Analytical survey of the origins and growth of the institutional frame of contemporary economic life in all its forms.

## 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 controlled trade, international monetary problems, world economic planning.

## 6 :293. 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. *2 credits each semester.*  
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. *3 credits each semester.*  
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. *3 credits each semester.*  
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. *3 credits each semester.*  
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. *3 credits each semester.*  
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. *3 credits each semester.*  
 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. *1 or 2 credits each semester.*  
 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 :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 :218. RENAISSANCE AND REFORMATION. *3 credits.*  
European history from 1400 to 1648; reawakening of intellectual interest, nation-states, religious struggles.
- 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 :253. ENGLAND TO 1689. *3 credits.*  
Development of parliamentary government; constitution and common law.
- 12 :254. ENGLAND AND THE EMPIRE. *3 credits.*  
Imperial expansion, policies; growth of Dominions; relations with India; Commonwealth since 1689.
- 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.
- 12 :311-312. INDIVIDUAL READING OR SEMINAR. *3 credits each semester.*

## HOME ECONOMICS

### GENERAL COLLEGE

- 13 :21. TEXTILES. *3 credits.*  
Natural 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. Speakers from different professions open to home economics trained women.

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.*

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.

27 :151. HOME ECONOMICS EDUCATION. *3 credits.*

Organization of home economics in secondary schools. Two hours observation, two hours lecture.

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. *4 credits each semester.*

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.

*1 to 3 credits each semester.*

Prerequisites depend upon subject, which may be either in language or archaeology.

## LATIN

## GENERAL COLLEGE

16 :21-22. ELEMENTARY LATIN. *4 credits each semester.*

Grammar and reading.

16 :43-44. SECOND YEAR LATIN. *3 credits each semester.*

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.  
*1 to 3 credits each semester.*  
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.
- 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.

\*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 :46. INTEGRAL CALCULUS. *4 credits.*  
Prerequisite, 45. Formal integration, definite integral application to areas, volumes, moments of inertia, centroids, approximation methods, multiple integral.
- 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.
- 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.

## UPPER COLLEGE

- 17 :104. HISTORY OF MATHEMATICS. *3 credits.*  
Prerequisite, 24 (or equivalent). Origin and development of mathematical ideas and processes.
- 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 :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 :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 :212. PARTIAL DIFFERENTIAL EQUATIONS. *3 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 :213. NUMERICAL ANALYSIS I. *3 credits.*  
Prerequisite, 204. Interpolation, finite difference methods, numerical differentiation and integration, numerical solutions of ordinary differential equations, algebraic and transcendental equations, coding, least squares method.

## 17 :214. NUMERICAL ANALYSIS II. 3 credits.

Prerequisite, 213. Least square polynomial approximation, Gaussian quadrature, approximations of types other than polynomial, numerical solution of partial differential equations of various types, integral equations and solutions of systems of equations.

## 17 :215. FUNCTIONS OF A REAL VARIABLE I. 3 credits.

Prerequisite, 201. Structure of the real number system, sets and their properties, limit theorems, properties of continuous and semi-continuous functions, derivatives of functions, Borel sets and Baire functions.

## 17 :216. FUNCTIONS OF A REAL VARIABLE II. 3 credits.

Prerequisite, 215. Measure, measurable sets, measurable functions, Riemann and Lebesgue integration, the Lebesgue integral as a set function, planar measure and double integration.

## 17 :217. THEORY OF NUMBERS. 3 credits.

Prerequisite, 46. Development of an integral domain, prime numbers, Euler's algorithm, congruence, Euler's Phi function, quadratic residues, Pell equation, Waring's problem.

## 17 :218. LAPLACE TRANSFORMS AND SPECIAL FUNCTIONS. 3 credits.

Prerequisite, 204. Applied properties, convolution, differentiation and integration of transforms, transforms of unit, impulse and periodic functions, applications to ordinary and partial differential equations, Fourier series, Bessel functions, Legendre polynomials.

## 17 :219. CALCULUS OF FINITE DIFFERENCES. 3 credits.

Prerequisite, 46. (204 desirable but not essential). Difference Formulas, Symbolic Operators, Finite Integration, Bernoulli and Euler Polynomials, Beta and Gamma Functions, Difference Equations with emphasis on the linear types.

## 17 :220. MATRIX ALGEBRA. 3 credits.

Prerequisite, 204. Solution of Cubic and Biquadratic Equations, Matrices, Symmetric-Hermitian, Matrix Algebra, Inverse of Matrix, Rank, Linear Equations, Vector Spaces and Linear transformations, Characteristic Equation of Matrix, Bilinear, Quadratic and Hermitian Forms, Introduction to Algebra of Sets.

## 17 :221. PROJECTIVE GEOMETRY. 3 credits.

Prerequisite, 46. Desargue's theorem, principle of duality, ranges and pencils, theorem of Pappus, polarity, homogeneous and line coordinates, cross ratio, metric properties of an involution.

## 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. 4 credits each semester.

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

## 8 :43-44. SECOND YEAR FRENCH. 3 credits each semester.

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. 4 credits each semester.

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

## 10 :43-44. SECOND YEAR GERMAN. 3 credits each semester.

Prerequisite, 22. Grammar review, practice in reading, writing, and speaking; short stories, plays, novels on intermediate level, outside reading.

14 :21-22. FIRST YEAR RUSSIAN. *4 credits each semester.*

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

14 :43-44. SECOND YEAR RUSSIAN. *3 credits each semester.*

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. *4 credits each semester.*

Reading, speaking, writing, and understanding; intensive drill in pronunciation, short stories, outside reading.

23 :43-44. SECOND YEAR SPANISH. *3 credits each semester.*

Prerequisite, 22. Grammar review; practice in reading, writing, and speaking; short stories, plays, novels on intermediate level, outside reading.

## UPPER COLLEGE

## FRENCH

## 8 :101-102. THIRD YEAR FRENCH: THE FRENCH NOVEL.

*2 credits each semester.*

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.

*2 credits each semester.*

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. FROM ROMANTICISM TO SYMBOLISM. *3 credits each semester.*

Prerequisite, 102 or 104. Poetry and Drama of the Nineteenth Century including the works of Lamartine, Hugo, Musset, Vigny, Leconte de Lisle, Gautier, Dumas père, Dumas fils, Becque, Rostand, Baudelaire, Rimbaud, Verlaine, Mallarmé.

8 :213-214. THE AGE OF ENLIGHTENMENT. *3 credits each semester.*

Prerequisite, 102 or 104. French literature of the Eighteenth Century.

8 :217-218. FRENCH CLASSICISM. *3 credits each semester.*

Prerequisite, 102 or 104. Representative works of the Seventeenth Century writers Malherbe, Théophile, Boileau, La Fontaine, Corneille, Racine, Molière, Descartes, Pascal, Bossuet, La Rochefoucauld, La Bruyère, Mme. de Sévigné, and Mme. de la Fayette.

## 8 :219-220. TWENTIETH CENTURY FRENCH LITERATURE.

*3 credits each semester.*

Prerequisite, 102 or 104. Representative plays, novels, and poems by Gide, Proust, Valéry, Claudel, Bernanos, Péguy, Giraudoux, Cocteau, Anouilh, Malraux, Sartre, Camus and others.

## GERMAN

## 10 :103-104. GERMAN CONVERSATION AND COMPOSITION.

*2 credits each semester.*

Prerequisite, German 44. Advanced composition using German models, special attention to words and idioms, development of oral expression and conversational ability.

10 :207-208. SCHILLER. *3 credits each semester.*

Prerequisite, 44.

10 :209-210. GOETHE. *3 credits each semester.*

Prerequisite, 44.

10 :213-214. MODERN GERMAN DRAMA. *3 credits each semester.*

Prerequisite, 44.

10 :217-218. GERMAN SHORT STORY. *3 credits each semester.*

Prerequisite, 44.

10 :219-220. TWENTIETH CENTURY GERMAN LITERATURE.

*3 credits each semester.*

Prerequisite, 44. Representative novels, dramas, and poems of Hauptman, Hoffmannsthal, George Rilke, Benn, Kaiser, Werfel, Zuckmayer, Mann, Doblin, Kafka, and others with emphasis on ideas and interpretations of life.

#### SPANISH

23 :101-102. SPANISH CONVERSATION AND COMPOSITION.

*2 credits each semester.*

Prerequisite, Spanish 44. Advanced composition using Spanish models, special attention to words and idioms, development of oral expression and conversational ability. (Students with credit in Spanish 103-104 are not eligible to enroll in this course.)

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. *3 credits each semester.*

Prerequisite, 44.

23 :209-210. SPANISH LITERATURE OF THE GOLDEN AGE AND EIGHTEENTH CENTURY (1550-1800). *3 credits each semester.*

Prerequisite, 44.

23 :211-212. SURVEY OF SPANISH LITERATURE. *3 credits each semester.*

Prerequisite, 44.

231-232. INDIVIDUAL READING IN FRENCH, GERMAN, OR SPANISH.

*1 to 3 credits each semester.*

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. Students seeking the B.S. degree in the College of Education include credits in Music Organizations in the 42 semester hours of "musical performance" required for the degree.

18 :1. UNIVERSITY SINGERS. *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. *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. *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. *3-4 hours a week. 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.

18:21. PERCUSSION INSTRUMENTS	18:28-2. HORN
18:24. VOICE	18:28-3. TROMBONE
18:25. PIANO	18:28-4. BARITONE
18:26. ORGAN	18:28-5. TUBA
18:27-1. VIOLIN	18:29-1. FLUTE OR PICCOLO
18:27-2. VIOLA	18:29-2. OBOE
18:27-3. CELLO	18:29-3. CLARINET
18:27-4. BASS	18:29-4. BASSOON
18:28-1. TRUMPET OR CORNET	18:29-5. SAXOPHONE

## 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, sight-singing, 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 :43. THEORY I. 3 credits.

Creative harmony and musicianship. Study of scales, intervals, chord formations, basic forms; creative use of these elements: sight-singing, melodic, harmonic and rhythmic dictation, ear training.

## 18 :44. THEORY II. 3 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, 44. 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, 44. Playing of string instruments with emphasis on violin. Materials and teaching techniques.

## 18 :57. WOODWIND CLASS. 2 credits.

Prerequisite, 44. Playing of woodwind instruments with emphasis on clarinet. Materials and teaching techniques.

## 18 :58. BRASS AND PERCUSSION CLASS. 2 credits.

Prerequisite, 44. Playing of brass and percussion instruments with emphasis on cornet. Materials and teaching techniques; rudimentary drumming.

## 27 :62. ELEMENTARY SCHOOL MUSIC LITERATURE AND APPRECIATION. 2 credits.

Prerequisite, 44. 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. 2 credits each semester.

Prerequisite, 44. Development of music from ancient to modern times; recordings as illustrative material.

## 18 :103. THEORY III. 3 credits.

Prerequisite, 44. 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, 44. 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.

27 :121. PRIMARY-ELEMENTARY MUSIC EDUCATION. *2 credits.*

Prerequisite, 44. 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.

27 :123. SECONDARY MUSIC EDUCATION. *2 credits.*

Prerequisite, 44. 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, 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. *3 credits each semester.*
- 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 :25. MECHANICS, SOUND AND HEAT. *4 credits.*  
Prerequisite, High school algebra (1 year) or Mathematics 18. Vectors; scalars; composition and resolution of vectors; conditions of equilibrium; Rectilinear Motion with constant acceleration; Newton's laws of motion; friction; rotary motion; work and energy; elastic properties of matter; properties of fluids; temperature, expansion; specific heat and method of mixtures; change of state, gas laws; transference of heat; heat and work; wave motion; properties of sound; vibrating strings and air columns; acoustics. Three recitations and one laboratory period per week. Not open to students who have credit in 20:51.
- 20 :26. ELECTRICITY, LIGHT AND MODERN PHYSICS. *4 credits.*  
Prerequisite, 25. Electric charges; Coulomb's law; electric field and potential; Ohm's law for circuits; resistance laws; Kirchhoff's laws; magnetic effect of an electric current; electrolysis; heating effect; electric energy and power; electric instruments; electromagnetic induction; conduction through gases; cathode rays; X-rays; thermionic effect; photoelectric effect; radioactivity; velocity of light; photometry; images and their formation in mirrors and lenses; prisms; spectra; interference; diffraction; and polarization. Three recitations and one laboratory period per week. Not open to students who have credit in 20:52.
- 20 :31. MECHANICS, HEAT AND SOUND. *5 credits.*  
Co-requisite, Mathematics 45. For Chemistry, Mathematics, Physics, and Engineering majors. Four recitation 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.*

Prerequisites, 32, 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.*

Prerequisite, 201 or permission. Advances in physics since 1890; electrons, X-rays, radioactivity, emission of light, atoms, relativity.

20 :206. OPTICS. *3 credits.*

Prerequisite, 32 and Mathematics 46. Reflection from mirrors; refraction; prisms; thin lenses; thick lenses; waves and their propagation; diffraction; interference; polarization; spectra; emission of light from the atom; velocity of light; photometry.

20 :207. KINETIC THEORY AND THERMODYNAMICS. *3 credits.*

Prerequisite, 32 and Mathematics 46. Kinetic theory of gases; temperature; thermodynamic systems; work; ideal gases; real gases; laws of thermodynamics; entropy; reversibility and irreversibility; Carnot cycle; Kelvin temperature scale; change of phase.

20 :209-210. PHYSICAL MEASUREMENTS. *2 credits each semester.*

Laboratory course involving advanced laboratory techniques. For Physics majors in their Senior year.

20 :221-222. COLLOQUIUM. *1 credit each semester.*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. ELECTROMAGNETIC THEORY. *3 credits.*

Prerequisites, 202, 204, Mathematics 204. 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.

*1 to 3 credits each semester.*

Graduate thesis course. Credit according to work done. Usually 2 credits per semester.

20 :311-312. THERMODYNAMICS. *3 credits each semester.*

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. *3 credits each semester.*

Prerequisite, 204 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. 1 hour recitation and 3 hours laboratory per week.

20 :351. ATOMIC SPECTRA. *3 credits.*

Prerequisite, 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. *3 credits each semester.*  
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. *3 credits each semester.*  
Administrative organization, personnel recruitment, sound budget organization and procedure, public reporting, public relations.
- 21 :217-218. FIELD WORK. *3 credits each semester.*  
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.*

## PSYCHOLOGY

## GENERAL COLLEGE

- 30 :21. **ELEMENTARY PSYCHOLOGY.** *3 credits.*  
Introduction to psychology with emphasis on basic facts and principles in the behavior of the typical human adult. Open only to students in the Pre-Clinical Nursing Program.
- 30 :41. **GENERAL PSYCHOLOGY.** *3 credits.*  
Basic facts and principles in the scientific study of behavior.
- 30 :43. **APPLIED PSYCHOLOGY.** *3 credits.*  
Prerequisite, 41. Applications of psychology to business and industry, education, clinical problems and law.
- 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.

## UPPER COLLEGE

- 30 :107. **PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE.** *3 credits.*  
Prerequisite, 41. Development of the individual from birth through the adolescent period; emphasis on needs and problems of typical children and adolescents; preparation of case histories.
- 30 :110. **EXPERIMENTAL PSYCHOLOGY.** *3 credits.*  
Prerequisites, 47 and a course in Statistics or permission. Scientific methods and tools of modern experimental psychology; group and individual laboratory experiments in sensory processes, attention and perception, and learning. One lecture and two 2-hour laboratory periods a week.
- 30 :115. **SOCIAL PSYCHOLOGY.** *3 credits.*  
Prerequisite, 41. Responses of the individual in relation to group situations and social influences of modern life.
- 30 :116. **INDUSTRIAL PSYCHOLOGY.** *3 credits.*  
Prerequisite, 41. Approaches to the improvement of industrial selection, promotion, classification, training, and performance evaluation.
- 30 :204 **PSYCHOLOGY OF EXCEPTIONAL CHILDREN AND ADOLESCENTS.**  
*3 credits.*  
Prerequisite, 107. Atypical or exceptional conditions in the development of children and adolescents; diagnostic and treatment procedures in the clinical approach to helping these individuals in their adjustment.
- 30 :205. **PHYSIOLOGICAL PSYCHOLOGY.** *3 credits.*  
Prerequisite, 47. Behavior in terms of its biological and neurological basis. Emphasis on sensation and perception, vision, audition, autonomic functions, cortical dynamics and integrated behavior, motivation, emotional behavior, and psychosomatic problems. Readings in current literature and reviews. Biology 91 desirable as background.

- 30 :206. NORMAL AND ABNORMAL PERSONALITY. 3 credits.  
Prerequisite, 6 credits in psychology. The nature, development, and organization of normal personality; range of adjustment mechanisms including normal, minor maladjustment area, psychoneuroses, and extreme psychoses.
- 30 :207. PSYCHOLOGICAL TESTS AND MEASUREMENTS. 3 credits.  
Prerequisites, 41 and a statistics course or permission. The nature, proper use, and construction of tests and measurements in industry, government, and education. Aptitude and achievement tests, rating scales, attitude and opinion analysis.
- 30 :208. TECHNIQUES IN GUIDANCE AND COUNSELING. 2 credits.  
Prerequisite, 207. The use of tests, interviews and personal history data in vocational and academic counseling and guidance.
- 30 :209. HUMAN UTILIZATION. 3 credits.  
Prerequisite, 41. Effective use of human skills in the working situation; environmental arrangements and techniques for increasing efficiency; special arrangements for marginal, older, accident prone and handicapped employees.
- 30 :210. COMPARATIVE PSYCHOLOGY. 3 credits.  
Prerequisite, 47. Use of animals in scientific study of behavior; understanding the animal and discovery of principles leading to understanding of human behavior.
- 30 :211. PSYCHOLOGICAL FACTORS IN MARITAL AND HOME ADJUSTMENT. 2 credits.  
Prerequisite, Senior or adult status. Psychology of sex adjustment in adolescence, adulthood, and marriage; factors which are important to successful marriage and parenthood.
- 30 :212. PSYCHOLOGY OF LEARNING. 3 credits.  
Prerequisite, 47. Problems of conditioning and learning; acquisition of individual responses; reinforcement, drive, frequency, transfer, retention, problem solving.
- 30 :215. METHODOLOGY IN PSYCHOLOGY. 3 credits.  
Prerequisite, Psychology 47 and a course in statistics. Typical research problems in psychology and techniques of solution via scientific methodology.
- 30 :216. SEMINAR AND RESEARCH PROBLEM. 2 credits.  
Prerequisite, 215. Reports by students on reading and experimental research; individual experimental problem; review and discussion of current literature.

## GRADUATE COURSES

- 30 :300 ADVANCED PSYCHOLOGICAL STATISTICS. 3 credits.  
Prerequisite, 17:57. Analysis of variance and covariance, multiple correlation and regression, discriminant function, factor analysis, nonparametric statistics.
- 30 :301. ADVANCED GENERAL PSYCHOLOGY. 2 credits.  
Prerequisite, 9 credits in psychology including 300. Major findings in the study of the normal human adult, physiological background and experimental results.
- 30 :304. ADVANCED DEVELOPMENTAL PSYCHOLOGY. 3 credits.  
Prerequisite, 9 credits of psychology. Influence of developmental stages upon individual and group behavior throughout the life span with implications for educational, clinical and industrial counseling.

- 30 :306. INDIVIDUAL INTELLIGENCE TESTING I: STANFORD—BINET.  
2 credits.  
Prerequisite, 207 and permission. Lectures and practice in the administration and scoring of the Stanford-Binet.
- 30 :307. INDIVIDUAL INTELLIGENCE TESTING II: WECHSLER—BELLEVUE.  
2 credits.  
Prerequisite, 207 and permission. Lectures and practice in the administration and scoring of the Wechsler-Bellevue.
- 30 :309. THEORIES OF PERSONALITY. 2 credits.  
Prerequisite, 9 credits of psychology including 206. Major personality theories and their respective contributions to the understanding of personality dynamics and organization.
- 30 :310. THEORIES OF PSYCHOTHERAPY. 2 credits.  
Prerequisite, 309 or permission. Contemporary theories of psychotherapy; client centered therapy; Freudian, Rankian, Adlerian and Jungian systems.
- 30 :311. THE PSYCHOLOGY OF INDIVIDUAL DIFFERENCES. 3 credits.  
Prerequisite, 9 credits of psychology. Significance, nature and role of inter- and intra-individual differences; applications to educational, industrial, and clinical situations; group differences and their measurement.
- 30 :313. APPLIED EXPERIMENTAL PSYCHOLOGY. 3 credits.  
Prerequisites, 205, 300 or permission. Contributions of psychology to the design of equipment and adaptation of work environment for optimum human use.
- 30 :314. ADVANCED INDUSTRIAL PSYCHOLOGY. 3 credits.  
Prerequisite, 116 or permission. Selection and training methods, conditions of work, performance rating, supervision, safety, attitude studies, motivation, personal adjustment, and labor-management relations.
- 30 :315. ADVANCED TESTS AND MEASUREMENTS. 3 credits.  
Prerequisite, 300. Basic variables, qualifying concepts, current trends in measurement; validation concepts; cross-validation; item analysis statistics.
- 30 :317. HISTORY AND SYSTEMS OF PSYCHOLOGY. 2 credits.  
Methods and concepts of psychology and contemporary points of view.
- 30 :318. GRADUATE SEMINAR IN PSYCHOLOGY. 3 credits.  
Prerequisite, 20 graduate credits of psychology. Special topics in the major areas.
- 30 :320. PRACTICUM IN CLINICAL AND COUNSELING PSYCHOLOGY.  
3 credits.  
Prerequisites, 20 hours of psychology including 206, 207, 309, and 310 and permission (306 and 307 are recommended). One class meeting per week and 300 hours of practice in field institutions which includes the State Department of Education requirement for certification of school psychologists. Diagnostic techniques, remedial methods, and personal counseling.
- 30 :400. THESIS SEMINAR. 2 credits.  
Prerequisite, permission. Review and discussion of contemporary research; preparation for independent research and thesis preparation.
- 30 :402. PSYCHOLOGY RESEARCH PROBLEM. 2 to 4 credits.  
Prerequisite, 400. Research, analysis of data, and preparation of thesis for the Master's Degree.

## SOCIOLOGY

## GENERAL COLLEGE

- 22 :23. INTRODUCTION TO SOCIOLOGY. *3 credits.*  
For Nurses. Social groups, culture, and personality.
- 22 :41. GENERAL SOCIOLOGY. *3 credits.*  
Origin, development, structure, and function of social groups.
- 22 :42. SOCIAL ATTITUDES. *3 credits.*  
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. *2 credits each semester.*  
For Seniors only. Study of research techniques and preparation of a research paper.
- 22 :111-112. FIELD WORK. *3 credits each semester. (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.*  
Structure and function of the community as a social system.
- 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. *3 credits each semester.*  
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. *2 credits each semester.*  
Theory of argument, analysis of logical processes in speech situation, practice in argument and discussion.
- 24 :47-48. BUSINESS AND PROFESSIONAL SPEAKING.  
*2 credits each semester.*  
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 and the variety of crafts involved in dramatic production.
- 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 effective discussion leader and participant.
- 24 :57-58. INTERCOLLEGIATE DEBATE. *1 or 2 credits each semester.*  
Argument in its application to a particular question debated among universities 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 :104. SPEECH PHONETICS. 2 credits.

Phonetic transcription using International Phonetic Alphabet.

## 27 :114. TEACHING OF SPEECH. 2 credits.

Methods to improve speech of elementary and secondary school children.

## 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. PLAY DIRECTING. 3 credits.

Prerequisite, permission of Head of Department. A practical course in the principles and techniques of presenting various types of theatrical material to an audience.

## 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 :271-272. SPEECH CORRECTION. 3 credits each semester.

First semester: etiology of speech disorders. Second semester: principles of speech therapy.

## 24 :273-274. CLINICAL PRACTICE IN SPEECH CORRECTION.

1 or 2 credits each semester.

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. 2 credits each semester.

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. 2½ credits. (2½-0)

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 :101. NUCLEAR ENGINEERING FUNDAMENTALS. 3 credits. (3-0)

Prerequisites, 17 :46, 20 :32. Lectures on atomic and nuclear structure, radio activity, nuclear transformation, radiation protection, instrumentation, nuclear fission, reactor principles and types. Demonstrations with nuclear reactor and instrumentation.

\*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. *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.

#### 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 :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. *2½ credits. (2½-0)*

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. (2½-1½)*

Prerequisite, 34 :105. Indeterminate beams, frames, and trusses. Moment-Area, Energy, Slope-deflection, Moment distribution, Williot-Mohr, and Column analogy methods. Laboratory work in deformer 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.

†Rec.-Lab. credit.

**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.

**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. 3 credits. (3-0)**

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.

## 34 :310. SPECIAL PROBLEMS. 1 to 6 credits.

Prerequisite, permission of Department Head. For qualified candidates for the Master's degree. Supervised research or investigation in student's major field of training or experience. Credit dependent upon nature and extent of project as determined by Supervisor, Department Head and Dean.

## ELECTRICAL ENGINEERING COURSES

## GENERAL COLLEGE

## 35 :30. DIRECT CURRENT AND ALTERNATING CURRENT PRINCIPLES.

2 credits. (1½-1½)†

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. (2½-1½)

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. (2-1½)

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. (2½-1½)

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. (2½-1½)

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.

†Rec.-Lab. credit.

## 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.

## 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. ELEMENTS OF 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.
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## MECHANICAL ENGINEERING COURSES

## GENERAL COLLEGE

## 36 :41. HEAT POWER PRINCIPLES. 3 credits. (2½-1½)\*

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 :172. MANUFACTURING METHODS. 2 credits. (2-0)

Prerequisite, 33 :36. Production machine tools. Foundry methods and equipment. Stamping. Spinning. Welding. Precision measurement. Inspection. Safety.

## 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. (2-1½)

Prerequisites, 20 :31, 17 :46. Fundamental concepts, including the first and second laws, fluid properties and gas characteristics. Instrumentation.

## 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. (2-1½)

Prerequisite, 36 :177. Study of real gases, mixtures and combustion, including flow of fluids.

## 36 :182. MACHINE DESIGN I. 2½ credits. (2½-0)

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. (2-0)

Prerequisite, 36 :182. Dynamic and combined stresses in machine elements.

\*Rec.-Lab. credit.

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 :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, 36 :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.

36 :304. 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.

36 :305. JET PROPULSION PRINCIPLES. *3 credits. (3-0)*

Prerequisites, 36 :171, 36 :191. Fundamentals of propulsion systems. Analysis of ramjet, turbojet, rockets, and thrust augmentation.

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## COLLEGE OF EDUCATION

## ART EDUCATION

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, Typewriting 52 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, Shorthand 66 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 :56. EDUCATION IN AMERICAN SOCIETY. *Either semester. 2 credits.*

Nature and purposes of education in American society including description of its distinctive features and analysis of factors determining its character.

27 :57. HUMAN DEVELOPMENT AND LEARNING. *3 credits.*

A study of the principles underlying the intellectual, emotional, social and physical growth and development of the human organism; and of the learning process with its implications for the instructional procedures.

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 :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 :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 :201. PROBLEMS IN EDUCATION. *Either semester. 3 credits.*

Prerequisite, Senior status in Education. To assist the Senior student in developing a personal philosophy of education upon which he will base his professional practices; to deepen personal commitment to teaching as a profession.

27 :202. STUDENT TEACHING AND SEMINAR. *6-8 credits.*

*(Fall and Spring Semesters—8 credits. Summer Sessions—6 credits.)*

Prerequisite, Education 27:113 or equivalent. Student teaching under supervision of directing teacher and University supervisor; includes 2-hour seminar per week or equivalent.

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 :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. ELEMENTARY EDUCATION. *Evening and Summer sessions.*

*3 credits.*

Evaluation of recent trends and practices in elementary education.

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## 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 :300. PHILOSOPHIES OF EDUCATION. 3 credits.

A survey and analysis of educational ideas and their relationship to society throughout the history of Western Culture, with some emphasis on contemporary philosophies.

## 27 :301. DEVELOPMENTAL PROCEDURES IN LEARNING. 2 credits.

A study of the learning process, with emphasis on the latest research findings in the area of human development and its relationship to learning.

## 27 :303. TECHNIQUES OF RESEARCH. 2 credits.

Research methods and techniques commonly used in education and psychology; preparation of research reports.

## 27 :311. STATISTICS IN EDUCATION. 3 credits.

Statistical methods and techniques used in the field of measurement and by research workers in education.

## 27 :315. PRACTICUM IN SCHOOL COUNSELING. 1 or 2 credits.

Prerequisite, 27:304. 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 INSTRUCTION. 2 credits.

Application of the findings of recent research 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 :321. 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 :322. SUPERVISION OF INSTRUCTION. *3 credits.*  
Study of the principles, organizations, and techniques of supervision with a view to the improvement of instruction.
- 27 :330. ELEMENTARY SCHOOL CURRICULUM AND INSTRUCTION.  
*2 credits.*  
Application of the findings of recent research 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 and Secondary School*). *2 credits.*  
Lectures on workshop technique supplemented by the working out of individual problems under staff guidance.
- 27 :345. PUBLIC SCHOOL ADMINISTRATION. *2 credits.*  
Theory and practices of educational administration in state and county systems, cities, and rural districts. School law, organizing, administration, finance, pupil accounting, planning, and completion of school buildings.
- 27 :350. LEGAL BASIS OF EDUCATION. *2 credits.*  
The legal principles underlying American Education as reflected in statutory provisions and the decisions of our courts. Some specific attention.
- 27 :352. PRINCIPLES OF SCHOOL FINANCE. *2 credits.*  
Study of financial operations of school systems including tax and other income, expenditures, and budgeting.
- 27 :354. SCHOOL AND COMMUNITY RELATIONS. *2 credits.*  
Principles and practices in maintaining cooperative relationships between the schools and the public.
- 27 :356. EDUCATION AND SOCIAL TRENDS. *2 credits.*  
Study of contemporary political, economic, and social trends and their effects on educational policies and practices.
- 27 :420. SCHOOL BUILDING AND CONSTRUCTION. *2 credits.*  
Designed mainly for the potential superintendent, executive head, or post-Master's student in administration.
- 27 :433. COMPARATIVE EDUCATION. *2 credits.*  
Educational philosophy and organization in foreign country.
- 27 :436. SEMINAR IN ELEMENTARY EDUCATION. *2 credits.*
- 27 :437. SEMINAR IN SECONDARY EDUCATION. *2 credits.*
- 27 :441. EVALUATING EDUCATIONAL INSTITUTIONS. *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 :445. ADMINISTRATION OF STUDENT PERSONNEL PROGRAMS.  
*2 credits.*  
Principles and practices in the development and overall administration of programs of guidance and other special services.
- 27 :499 RESEARCH IN EDUCATION. *2 credits.*  
Thorough study and analysis in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to a specific topic.

## 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 EDUCATION

27 :151. HOME ECONOMICS EDUCATION. *First semester.* 3 credits.

Organization of home economics in secondary schools. Two hours observation, two hours lecture.

## MUSIC EDUCATION

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.

## 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.

†Prerequisite, Geography 71.

## 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 inter-departmental 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.  $\frac{1}{2}$  credit each semester.

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.

## MEN

Men's Physical Activities ( $\frac{1}{2}$  credit each semester)

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## 45-46. BASIC COURSE IN PHYSICAL EDUCATION PRACTICE.

*2 credits each semester.*

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 :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*).

*2 credits each semester.*

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 each semester.*

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 each semester.*

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. 2 credits each semester.

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.

### SPEECH EDUCATION

27 :114. TEACHING OF SPEECH. 2 credits.

Methods to improve speech of elementary and secondary school children.

## 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.

28 :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 :82. CONSUMER ECONOMICS. *3 credits.*40 :83. MARKETING. *3 credits.*

Prerequisite, 3 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 :84. PUBLIC RELATIONS. *2 credits.*

General course in Public Relations covering newspaper publicity, industrial publications, and other types of organizational publicity.

## 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 :181. PRINCIPLES OF SALESMANSHIP. 3 credits.

Prerequisite, 40:83. A study of personal selling as a part of the marketing process including the qualifications, economics, functions and obligations of salesmen. Emphasis is placed upon demonstrations and sales projects.

## 40 :185. PRINCIPLES OF ADVERTISING. 3 credits.

Prerequisite, 40:83. Study of place, objectives, and tools of modern advertising. Creation and development of a campaign based upon research and trade requirements.

## 40 :188. SALES PROMOTION AND MARKET DEVELOPMENT. 3 credits.

Prerequisite, 40:185. The development of local, regional, and national markets. Covers planning, execution of specific promotions directed to the manufacturer's marketing division, the dealer organization, and the consumer.

## 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 :194. PRINCIPLES OF MERCHANDISING. 3 credits.

Prerequisite, 40:83. The development and application of the basic concepts of moving merchandise toward the customer. The relationship of market availability and product research to merchandising.

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 :284. PROBLEMS IN RETAIL MANAGEMENT. 3 credits.

Prerequisite, 40:194. Problems involved in the application of management principles to the retail organizations of various types. Also implication on social trends on retail management.

40 :286. PROBLEMS IN ADVERTISING. 3 credits.

Prerequisite, 40:188 or permission of instructor. Advertising problem analysis and creation of layouts and copy.

40 :291. SALES ADMINISTRATION. 3 credits.

Prerequisite, 40:83 and 40:181 or 185. 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, 40:83 and 40:147. A study of the objectives, techniques, and methods of analyzing market behavior and market forces.

40 :297-298. SEMINAR. 1 credit each semester.

## 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 critically 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. *3 credits each semester.*

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. *3 credits each semester.*

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.

\*Accounting 121 and 123 may be taken by advanced and qualified students in place of 21, 22, and 27.

## 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. 3 credits each semester.

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. 3 credits each semester.

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.

## 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, 40:62 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, 40:62. 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, 40:163 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. 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 40:147. 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 last semester 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. INTRODUCTION TO OFFICE PROBLEMS. *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 :35. BUSINESS ENGLISH. *Either semester. 2 credits.*  
Fundamentals of English, its use in business world.
- 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 61-62.
- 43 :53. TYPEWRITING PRINCIPLES. (*Beginning*) *First semester. 3 credits.*  
Fundamentals of typewriting followed by drill to acquire skillful coordination of machine parts. This is followed by application of the skill to simple typing problems.
- 43 :54. TYPEWRITING PROJECTS. *Second semester. 3 credits.*  
Prerequisite, 53 or equivalent. Application of typewriting skill on a problem basis to letter writing, data writing, report writing, and legal writing.
- 43 :55. ADVANCED TYPEWRITING AND SECRETARIAL MACHINES.  
*Either semester. 3 credits.*  
Prerequisite, 62 and 54 or equivalent. Advanced typewriting, transcription, business forms, duplication processes, dictating and transcribing machines.
- 43 :61. SHORTHAND PRINCIPLES. *First semester. 4 credits.*  
Prerequisite, Typewriting 53 unless taken concurrently. Gregg Shorthand Theory is covered. No credit unless second semester is completed satisfactorily.
- 43 :62. SHORTHAND AND TRANSCRIPTION. *Second semester. 3 credits.*  
Prerequisite, Shorthand 61 or equivalent. Typewriting 54 or equivalent must precede or accompany. Introduction of machine transcription and general dictation. Speed attainment: 80 to 100 words per minute.
- 43 :63. ADVANCED DICTATION AND TRANSCRIPTION. *First semester.*  
*4 credits.*  
Prerequisite, Shorthand and Transcription 62 and Typewriting Projects 54 or equivalent. Vocabulary building, general dictation on letters and articles. Speed attainment: 90 to 110 words per minute.
- 43 :64. ADVANCED DICTATION AND TRANSCRIPTION. *Second semester.*  
*4 credits.*  
Prerequisite, Shorthand and Transcription 63. Advanced Typewriting and Secretarial Machines 55 must precede or accompany. Specialized vocabularies, dictation on letters and articles. Speed attainment: 110 to 130 words per minute.
- 43 :93. BUSINESS COMMUNICATIONS. *First semester. 2 credits.*  
Principles involved in various types of written business communication, and application of these principles.

## UPPER COLLEGE

- 43 :165. EXECUTIVE SECRETARIAL DICTATION. *First semester. 3 credits.*  
Prerequisite, 64 or equivalent. Dictating articles and letters, including special vocabularies. Techniques of reporting and taking of lectures. Speed attainment: 120 to 140 words per minute.
- 43 :195-196. OFFICE MANAGEMENT. *Evening session. 2 credits each semester.*  
Office functions and principles involved in office management, adapted for adults with office experience. Credit not allowed for this course and also 296.
- 43 :234. ADVANCED BUSINESS COMMUNICATION. *Second semester. 2 credits.*  
Prerequisite, 93. An advanced treatment of written business communication from the management standpoint, designed primarily for qualified persons experienced in some phase of business communication.
- 43 :292. EXECUTIVE OFFICE PROJECTS. *Second semester. 3 credits.*  
Prerequisite, 25, 27, 64. Projects related to the secretary's work, general secretarial functions, administrative problems, and office experience.
- 43 :296. OFFICE ORGANIZATION AND MANAGEMENT. *Second semester. 3 credits.*  
Prerequisite, Bus. Org. 40:61. Individual projects relating to analyses of various aspects of the office and to problems involved in office management.

## COLLEGE OF LAW

## FIRST YEAR—REQUIRED COURSES

- 50:211. **CONTRACTS I. 3 credits.**  
Formation of simple contracts. Consideration. Beneficiaries. Assignments. Statute of Frauds. Parol evidence rule.
- 50:212. **CONTRACTS II. 3 credits.**  
Conditions. Performance and breach. Illegal contracts. Discharge.
- 50:213. **INTRODUCTION TO LAW. 2 credits.**  
History of causes of action at law for injuries to the person, to property, and breach of contract and debts. Survey of the principles of common law system of pleading and procedure.
- 50:214. **PROPERTY I. 3 credits.**  
Chattels and rights and liabilities incident to their possession and ownership. Adverse possession (of land and chattels). Bailments. Liens. Finders. Accession. Confusion. Gifts. Fixtures. Emblements.
- 50:215. **LEGAL RESEARCH. 1 credit.**  
Law books and their use. Methods of legal research.
- 50:216. **LEGAL WRITING. 1 credit.**  
Practice in the use of search methods in a problem or problems to be assigned, with substantial attention to the form, content and style of writing.
- 50:217. **TORTS I. 3 credits.**  
Intended interference with person and property and defenses thereto. Unintended interference with persons and property. Negligence.
- 50:218. **TORTS II. 2 credits.**  
Negligence continued, and defenses thereto. Liability without fault. Interference with intangibles. Misrepresentation. Defamation. Malicious prosecution. Interference with advantageous relations.
- 50:219. **AGENCY-PARTNERSHIP. 3 credits.**  
Vicarious liability. Relationships of master and servant, principal and agent, and problems of the independent contractor. Scope of employment. Authority and apparent authority. Misrepresentation by an agent. Undisclosed principal. Ratification. Elements of partnership.

## SECOND YEAR—REQUIRED COURSES

- 50:221. **CORPORATIONS I. 3 credits.**  
Nature of private corporations; their creation, powers, and liabilities. Directors and officers. Stock and stockholders. Rights and remedies of creditors. Dissolutions and reorganizations. Foreign corporations.
- 50:222. **CORPORATIONS II. 1 credit.**  
Corporations I continued.
- 50:223. **LEGISLATION. 3 credits.**  
Organization, function, and procedure of legislative bodies. Drafting of statutes. Interpretation of statutes.
- 50:224. **EQUITY. 4 credits.**  
History of equity. General nature and scope of equitable relief. Injunctions. Bills of peace, interpleader and *quia timet*. Removal of cloud on title. Declaratory judgments. Specific performance of contracts and defenses thereto. Conditions in contracts, express and implied. Part performance and the Statute of Frauds. Equitable conversion by contract. Equitable servitudes.
- 50:225. **PROPERTY II. 3 credits.**  
Freehold estates and estates less than freehold. Future interests. Concurrent estates. Land titles and modes of conveyance. Easements. Covenants. Estoppel by deed. Recording and priorities. Land registration.

50:226. PROPERTY III. *3 credits.*

Use and enjoyment of land. Physical extent of property in land. Support. Water. Nuisance. Statutory regulation. Licenses. Agreements running with land. Waste.

50:228. LEGAL PROFESSION. *1 credit.*

The legal profession as an institution. Professional responsibility. Duties and privileges of members of the legal profession.

## THIRD YEAR—REQUIRED COURSES

50:231. COMMERCIAL TRANSACTIONS I. *3 credits.*

Sale of goods. Use of negotiable instruments in sales transactions or otherwise. Warranties. Security. Risk of loss. Negotiability concept. Formal requirements of a negotiable instrument. Indorsements. Rights and liabilities of the parties to the instrument. Uniform Commercial Code.

50:232. COMMERCIAL TRANSACTIONS II. *1 credit.*

Continuation of Commercial Transactions I.

50:233. EVIDENCE I. *3 credits.*

Determination of facts: judicial notice, burden of proof and presumptions. Problems of remoteness and prejudice. Examination of witnesses. Competency and privilege. Opinion evidence. Hearsay rule and its exceptions. Principles relating to writings. Parol evidence rule. Illegally obtained evidence.

50:234. EVIDENCE II. *1 credit.*

Continuation of Evidence I.

50:235. CODE PLEADING. *3 credits.*

Pleading under modern codes and rules. Petition. Answer. Reply. Motions and demurrers. Parties. Joinder. Amendment. General rules of pleading.

50:236. CONSTITUTIONAL LAW. *4 credits.*

Judicial function in constitutional cases. The federal system. Powers delegated to the national government. Powers of the states as affected by delegation to national government. Limitations of powers of government. Political and civil rights. Amendments.

50:238. CRIMINAL LAW. *3 credits.*

Nature and source of criminal liability. The act. Mental conditions requisite to criminal responsibility. Specific crimes and defenses thereto. These materials are studied in the light of modern trends and needs.

## FOURTH YEAR—REQUIRED COURSES

50:241. TRUSTS. *3 credits.*

Nature of a trust. Creation and elements. Comparison with other devices. Charitable trusts. Resulting and constructive trusts. Administration of trusts. Liabilities to third persons. Transfer of beneficial interests. Termination.

50:242. TRIAL PRACTICE. *3 credits.*

Judicial power, jurisdiction and venue. Beginning a suit. Process. Discovery before trial and pre-trial hearings. Continuances. Judgments without trial of facts. Right to, and incidents of, jury trials. Verdicts. Judgments notwithstanding the verdict. New trials. Nature and effect of judgments.

50:243. WILLS. *2 credits.*

Testate disposition of property. Testamentary capacity. Execution and revocation of wills. Some phases of administration of estates. Intestacy.

## ELECTIVE COURSES

50:250. CONFLICT OF LAWS. *3 credits.*

Questions of law applicable in situations involving more than one state, in contracts, domestic relations, estates, judgments, procedure, property, and torts.

50:251. FUTURE INTERESTS. 2 *credits*.

History and development of future interests in property. Types and characteristics. Class gifts. Powers. Rule against perpetuities. Restraints on alienation.

50:252. CREDITORS' RIGHTS. 3 *credits*.

Enforcement of judgments. Execution, attachment and garnishment. Creditors' bills. Fraudulent conveyances. General assignments for benefit of creditors. Creditors' agreements. Bankruptcy.

50:253. MUNICIPAL CORPORATIONS. 2 *credits*.

Nature of municipal corporations. Home rule. Creation. Annexation. Powers. Officers. Zoning. Rights of abutters. Contractual and delictual liability. Dissolution.

50:254. DOMESTIC RELATIONS. 2 *credits*.

Marriage. Divorce. Alimony. Husband and wife. Parent and child. Infants. Non-judicial settlement of domestic problems and community services available therefor.

50:255. RESEARCH PROBLEMS. 1 to 3 *credits*.

Work on a research problem to be selected by the student with the advice of the faculty member to whom the student is assigned. The work will include conferences and writing of a paper. Admission with consent of the Dean.

50:256. RESTITUTION AND DAMAGES. 2 *credits*.

A comparison of the relief afforded in damage actions, with emphasis on the measurement of damages, with the relief afforded by such restitutionary devices as quasi-contract, constructive trust, equitable lien, equitable and legal accounting. Rescission and reformation for fraud or mistake.

50:258. SECURITY TRANSACTIONS. 3 *credits*.

A study of the principles of mortgage and suretyship relations.

## SEMINARS

50:261. SEMINAR IN ADMINISTRATIVE LAW. 2 *credits*.

Problems of delegation of powers, statutory and constitutional controls in administrative procedure, rights to notice and hearing, adequacy of findings, and judicial review.

50:262. SEMINAR IN ESTATE PLANNING. 2 *credits*.

Problems involved in planning an effective and economical distribution of property interests with reference to the law of property, future interests, insurance, federal and state taxation, and wills.

## 50:263. SEMINAR IN PATENT, TRADEMARK AND COPYRIGHT LAW.

2 *credits*.

A study of the prerequisites to federal protection of patents, trademarks and copyrights, registration procedures, appeals from administrative actions, rights of patentees, trademark owners and copyright holders, grants, licenses and assignments, infringements, plagiarism, and unfair competition.

50:264. SEMINAR IN FEDERAL TAXATION. 3 *credits*.

A consideration of the law of federal estate, gift, and income taxation, and a survey of federal tax practice.

50:266. SEMINAR IN JURISPRUDENCE. 2 *credits*.

A critical study of comparative jurisprudential thought as represented by the various general theories of or about law.

50:268. SEMINAR IN LABOR LAW. 2 *credits*.

Establishment of collective bargaining processes, including representation procedure under the Labor-Management Relations Act, and the duty to bargain. The collective bargaining process together with grievance arbitration. Legal limitation on economic pressures of both management and unions, including interference with bargaining, strikes, picketing and boycotts, and the use of the restraining order. Reporting procedures. Internal union control.

U.S. ARMY ROTC  
MILITARY SCIENCE AND TACTICS

- 11-12. FIRST YEAR BASIC MILITARY SCIENCE. *1½ credits each semester.*  
Three 1-hour classes each week. Required of Freshmen not taking 13-14.
- 43-44. SECOND YEAR BASIC MILITARY SCIENCE. *1½ credits each semester.*  
Prerequisite, 12.
- 101-102. FIRST YEAR ADVANCED MILITARY SCIENCE. *3 credits each semester.*  
Prerequisite, 44.
- 111-112. FIRST YEAR ADVANCED MILITARY SCIENCE. *1½ credits each semester.*  
For Prejunior Cooperative Engineering Students. Prerequisite, 44.
- 121-122. FIRST YEAR ADVANCED MILITARY SCIENCE. *1½ credits each semester.*  
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. *3 credits each semester.*  
For Seniors. Prerequisite, 102, Cooperative Engineers, 141.

U.S. AIR FORCE ROTC  
AIR SCIENCE

- 13-14. BASIC AIR SCIENCE. *1½ credits each semester.*  
Three 1-hour classes each week. Required of Freshmen not taking 11-12.
- 53-54. SECOND YEAR BASIC AIR SCIENCE. *1½ credits each semester.*  
Prerequisite, 14. 43-44 or 53-54 is required of second year men.
- 103-104. ADVANCED AIR SCIENCE. *3 credits each semester.*  
Prerequisite, 54.
- 115-116. ADVANCED AIR SCIENCE. *1½ credits each semester.*  
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. *1½ credits each semester.*  
Prerequisite, 117. For Junior Cooperative Engineering Students.
- 153-154. ADVANCED AIR SCIENCE. *3 credits each semester.*  
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.*  
For Second Semester Senior Cooperative Engineering Students.

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