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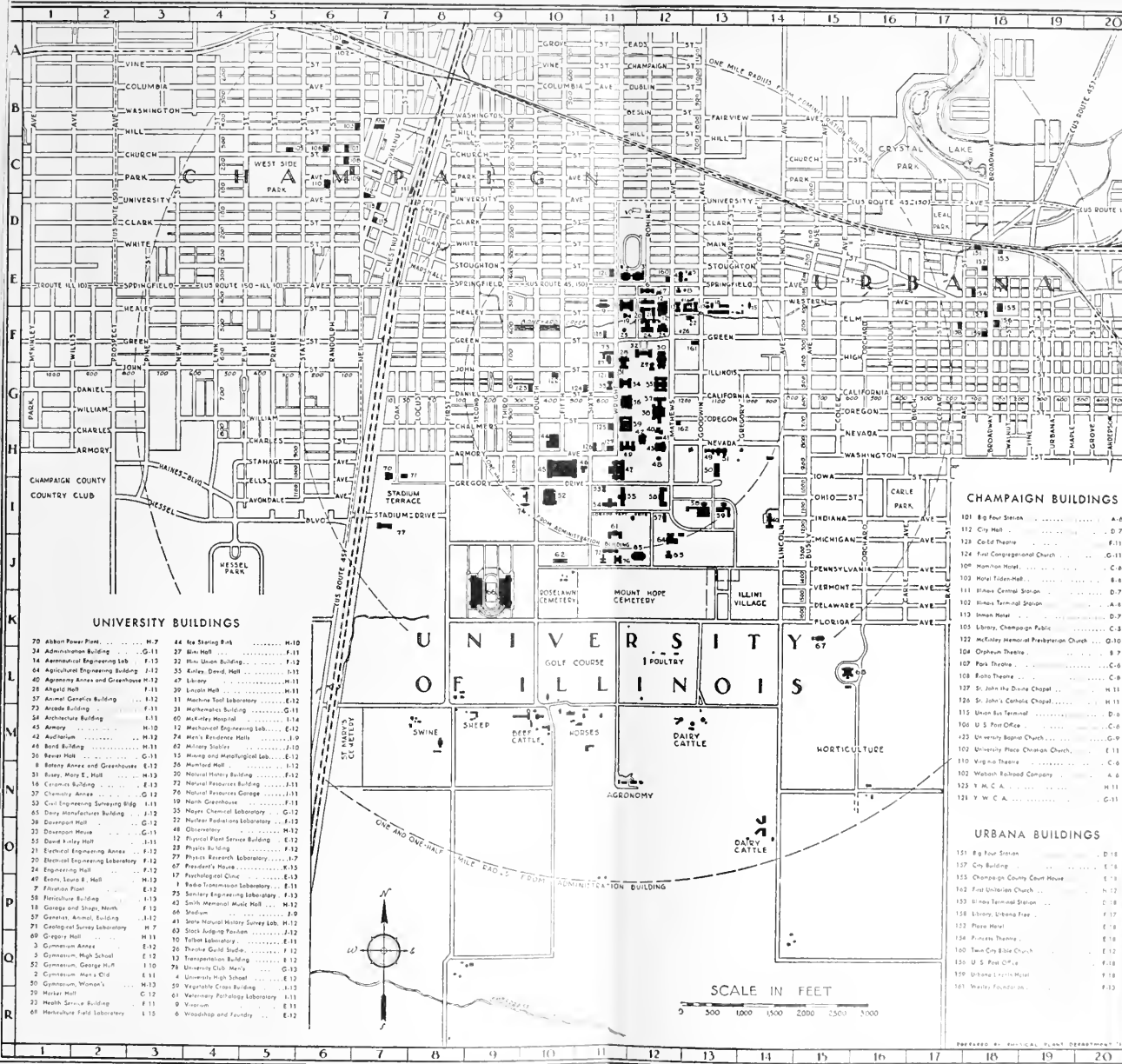
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UNIVERSITY BUILDINGS

70 Ribbon Power Plant	M-7	44 Ice Storage Bank	H-10
24 Administration Building	G-11	37 Ill. Hall	F-11
14 Agricultural Engineering Lab	F-15	32 Ill. Union Building	F-12
40 Agricultural Engineering Building	F-12	35 Kotler David Hall	H-11
40 Agronomy Annex and Greenhouse	F-12	47 Library	H-11
26 Art and Handicraft	F-11	39 Lincoln Hall	H-11
57 Animal Care and Building	F-12	31 Machine Tool Laboratory	E-12
37 Ardele Building	F-11	31 Mathematics Building	G-11
54 Architecture Building	F-11	60 McAlester Hospital	F-11
45 Army	H-10	12 Mechanical Engineering Lab.	E-12
42 Aufhauser	H-12	74 Men's Residence Hall	F-9
48 Bard Building	H-11	62 Military Studies	F-10
30 Bevier Hall	G-11	15 Mining and Metallurgical Lab.	E-12
8 Battery Annex and Greenhouse	E-12	26 Marshall Hall	F-12
31 Bayer, Mary E. Hall	E-12	30 Natural History Building	F-12
16 Ceramics Building	E-13	72 Natural Resources Building	F-11
37 Chemistry Annex	G-12	76 Natural Resources Garage	F-11
52 Civil Engineering Sounding Ship	F-11	19 North Greenhouse	F-11
65 Dairy Manufacture Building	F-12	35 Noyes Chemical Laboratory	G-12
22 Davidson Hall	G-12	22 Nuclear Radiation Laboratory	F-12
22 Deason House	G-11	48 Observatory	H-12
55 Davis Kelley Hall	F-11	12 Physical Plant Service Building	F-12
21 Electrical Engineering Annex	F-12	21 Physics Building	F-12
20 Electrical Engineering Laboratory	F-12	17 Psychology Lab.	F-12
24 Engineering Hall	F-12	7 President's House	F-15
47 Egan, Sara B. Hall	H-12	17 Psychological Clinic	F-12
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58 Fletcher Building	F-13	75 Sanitary Engineering Laboratory	F-13
18 Garage and Shop, North	F-12	42 South Memorial Music Hall	H-12
37 Geneva Alumni Building	H-12	66 Stadium	F-9
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49 Gregory Hall	H-11	43 Stone Building Pavilion	H-12
3 Gymnasium Annex	F-12	10 Tuller Laboratory	F-11
5 Gymnasium, High School	F-12	20 Throne Guild Auditor.	F-12
52 Gymnasium, George H.H.	F-12	12 Transportation Building	F-11
2 Gymnasium, H.C.H.	H-12	78 University Club Men's	G-12
50 Gymnasium, Women's	F-12	4 University High School	F-12
30 Huxar Hall	H-12	59 Vegetable Crops Building	F-12
32 Health Service Building	F-11	6 Veterinary Pathology Laboratory	F-11
68 Mechanical Field Laboratory	F-12	9 Vocational	F-11
		6 Workshops and Foundry	F-12

CHAMPAIGN BUILDINGS

101 E. Four Street	A-6
112 City Hall	D-11
121 Co. of Theaters	B-11
124 First Congregational Church	G-11
106 Municipal Hotel	C-6
103 Hotel Indiana	C-6
111 Illinois Central Station	D-7
102 Illinois Terminal Station	A-6
113 Iman Hotel	C-7
105 Library, Champaign Public	D-3
122 McElroy Memorial Presbyterian Church	G-10
104 Opera Theatre	F-9
107 Park Theatre	C-6
108 Radio Theatre	C-6
127 St. John's Divine Chapel	C-6
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111 Union Trust Terminal	D-6
106 U. S. Post Office	G-6
123 University Baptist Church	G-10
110 Wesleyan Baptist Church	E-11
110 Wigwag Theatre	C-6
102 Western Railroad Company	A-6
121 Y. M. C. A.	H-11
121 Y. W. C. A.	G-11

URBANA BUILDINGS

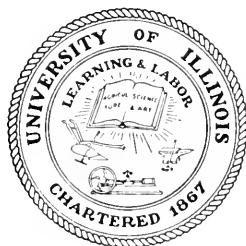
151 E. Four Street	D-18
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155 Champaign County Court House	E-18
152 First Baptist Church	H-12
150 Illinois Terminal Station	C-6
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124 Plaza Hotel	E-18
154 Process Theatre	E-18
150 Two-On-Bite Church	F-12
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156 University Club Hotel	F-12
161 Wesleyan Foundation	F-12



UNIVERSITY OF ILLINOIS CATALOG

1946-1947

SEVENTY-NINTH YEAR
OF THE UNIVERSITY



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UNIVERSITY OF ILLINOIS

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UNIVERSITY CALENDAR (Continued)

1948 — Second Semester

Feb. 6, Fri.—Feb. 10, Tues.	Registration (Galesburg).
Feb. 9, Mon.—Feb. 12, Thurs.	Registration (Chicago).
Feb. 11, Wed.	Instruction begins (Galesburg).
Feb. 13, Fri.	Instruction begins (Chicago).
March 25, Thurs., 12 m.	Easter vacation begins (Galesburg).
March 25, Thurs., 1 p.m.	Easter vacation begins (Chicago).
March 29, Mon., 1 p.m.	Easter vacation ends.
June 1, Tues.—June 9, Wed.	Semester examinations (Galesburg).
June 1, Tues.—June 10, Thurs.	Semester examinations (Chicago).

1948 — Summer Session

June 21, Mon.—June 22, Tues.	Registration.
June 23, Wed.	Instruction begins.
Aug. 11, Wed.—Aug. 14, Sat.	Summer Session examinations.

PROFESSIONAL COLLEGES IN CHICAGO

1946 — Fall Quarter

Sept. 30, Mon.	Registration of undergraduates.
Oct. 1, Tues., 8 a.m.	Instruction begins.
Oct. 3, Thurs.	Registration of graduate students.
Nov. 28, Thurs.	Thanksgiving Day (holiday).
Dec. 21, Sat., 5 p.m.	Fall quarter ends.

1947 — Winter Quarter

Jan. 6, Mon.	Registration of undergraduates.
Jan. 7, Tues., 8 a.m.	Instruction begins.
Jan. 9, Thurs.	Registration of graduate students.
March 29, Sat., 5 p.m.	Winter quarter ends.

1947 — Spring Quarter

March 31, Mon.	Registration of undergraduates.
April 1, Tues., 8 a.m.	Instruction begins.
April 3, Thurs.	Registration of graduate students.
May 30, Fri.	Memorial Day (holiday).
June 21, Sat., 5 p.m.	Spring quarter ends.

1947 — Fall Quarter

Sept. 29, Mon.	Registration of undergraduates.
Sept. 30, Tues., 8 a.m.	Instruction begins.
Oct. 2, Thurs.—Oct. 3, Fri.	Registration of graduate students.
Nov. 27, Thurs.	Thanksgiving Day (holiday).
Dec. 20, Sat., 5 p.m.	Fall quarter ends.

1948 — Winter Quarter

Jan. 5, Mon., 8 a.m.	Winter quarter begins.
Jan. 8, Thurs.—Jan. 9, Fri.	Registration of graduate students.
March 27, Sat., 5 p.m.	Winter quarter ends.

1948 — Spring Quarter

March 29, Mon., 8 a.m.	Spring quarter begins.
April 1, Thurs.—April 2, Fri.	Registration of graduate students.
May 30, Sun.	Memorial Day.
June 18, Fri.	Commencement exercises.
June 19, Sat., 5 p.m.	Spring quarter ends.

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Term 1947-1953

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 CHARLES CLAIRE CAVENY, Ph.D., Dean of the Undergraduate Division in Chicago
 ROBERT BINGHAM DOWNS, M.S., Litt.D., Director of the Library and the Library School
 MELVIN LORENIUS ENGER, M.S., C.E., Dean of the College of Engineering
 ROBERT GRAHAM, B.S., D.V.M., Dean of the College of Veterinary Medicine
 COLEMAN ROBERTS GRIFFITH, Ph.D., LL.D., Provost
 FREDERIC R. HAMILTON, Ph.D., Dean of the Undergraduate Division at Galesburg
 HAROLD WINFORD HANNAH, B.S., LL.B., Director of the Division of Special Services for War Veterans
 ALBERT JAMES HARNO, B.S., LL.B., Litt.D., LL.D., Dean of the College of Law
 WHITNEY CLARK HUNTINGTON, M.S., C.E., Professor of Civil Engineering and Head of the Department
 ANDREW CONWAY IVY, Ph.D., M.D., Vice-President of the University in charge of the Professional Colleges in Chicago
 MATTHEW THOMPSON McCLURE, Ph.D., Litt.D., Dean of the College of Liberal Arts and Sciences
 WALTER SCOTT MONROE, Ph.D., Acting Dean of the College of Education
 REXFORD NEWCOMB, A.M., M.Arch., Dean of the College of Fine and Applied Arts
 HENRY PERLY RUSK, M.S., Dean of the College of Agriculture
 HIRAM THOMPSON SCOVILL, A.B., C.P.A., LL.D., Acting Dean of the College of Commerce and Business Administration
 EARL ROY SERLES, Ph.G., Ph.D., Dean of the College of Pharmacy
 FREDRICK SEATON SIEBERT, A.B., J.D., Director of the School of Journalism
 SEWARD CHARLE STALEY, Ph.D., Director of the School of Physical Education
 JOHN BARLOW YOUMANS, M.S., M.D., Dean of the College of Medicine

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JOSEPH CULLEN BLAIR, M.S., D.Sc., Professor of Horticulture and Dean of the College of Agriculture, *Emeritus*.
THOMAS EDWARD OLIVER, Ph.D., Professor of French, *Emeritus*§
FREDERICK GREEN, A.M., LL.B., Professor of Law, *Emeritus*
HARRY SANDS GRINDLEY, D.Sc., Professor of Animal Nutrition, *Emeritus*
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GEORGE ABRAM MILLER, Ph.D., LL.D., Professor of Mathematics, *Emeritus*
PHINEAS LAWRENCE WINDSOR, Ph.B., Litt.D., Professor of Library Science, Director of the Library, and Director of the Library School, *Emeritus*
JOHN WILLIAM LLOYD, Ph.D., Professor of Fruit and Vegetable Marketing, *Emeritus*
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ERNEST LUDLOW BOGART, Ph.D., Professor of Economics, *Emeritus*
CHARLES FREDERICK HOTTES, Ph.D., Professor of Plant Physiology, *Emeritus*
ELLERY BURTON PAINE, M.S., E.E., Professor of Electrical Engineering, *Emeritus*
LORING HARVEY PROVINE, B.S., A.E., Professor of Architectural Engineering and Head of the Department of Architecture
HERBERT FISHER MOORE, M.E., D.Sc., Research Professor of Engineering Materials, *Emeritus*
OSCAR ADOLPH LEUTWILER, B.S., M.E., Professor of Mechanical Engineering Design, *Emeritus*
ALBERT HOWE LYBYER, Ph.D., Professor of History, *Emeritus*
ERNEST BERENBAUM, Ph.D., Professor of English, *Emeritus*
CULLEN WARNER PARMELEE, M.S., D.Sc., Professor of Ceramic Engineering, *Emeritus*
DAVID HOBART CARNAHAN, Ph.D., Professor of French, *Emeritus*
CHARLES TOBIAS KNIPP, Ph.D., Professor of Experimental Electricity, *Emeritus*
FLOYD ROWE WATSON, Ph.D., Professor of Physics, *Emeritus*
HARRISON EDWARD CUNNINGHAM, A.B., Director of the University Press with the rank of Professor, Director of the Information Office, Secretary of the Board of Trustees, and Secretary of the University Retirement System
WILLIAM LEONIDAS BURLISON, Ph.D., D.Agr., Professor of Crop Production and Head of the Department of Agronomy
HERMAN BERNARD DORNER, M.S., Professor of Floriculture, *Emeritus*
JAMES LLOYD EDMONDS, B.S., Professor of Horse Husbandry
MELVIN LORENIUS ENGER, M.S., C.E., Professor of Mechanics and Hydraulics, Dean of the College of Engineering, and Director of the Engineering Experiment Station
ROBERT GRAHAM, B.S., D.V.M., Professor of Veterinary Pathology and Hygiene, Head of the Department, and Dean of the College of Veterinary Medicine
HARVEY HERBERT JORDAN, B.S., Professor of General Engineering Drawing, Head of the Department, and Associate Dean of the College of Engineering
FRED HENRY RANKIN, B.S., Superintendent of Agricultural College Extension and Assistant Dean of the College of Agriculture, *Emeritus*
HENRY PERLY RUSK, M.S., Professor of Cattle Husbandry, Dean of the College of Agriculture, Director of the Agricultural Experiment Station, and Director of the Extension Service in Agriculture and Home Economics
HIRAM THOMPSON SCOVILL, A.B., C.P.A., LL.D., Professor of Accountancy, Head of the Department of Business Organization and Operation, and Acting Dean of the College of Commerce and Business Administration
JAMES BYRNIE SHAW, D.Sc., Professor of Mathematics, *Emeritus*
EVERETT EDGAR KING, M.S., M.C.E., Professor of Railway Civil Engineering, *Emeritus*
CHARLES MANFRED THOMPSON, Ph.D., Litt.D., LL.D., Professor of Economics and Dean of the College of Commerce and Business Administration, *Emeritus*

¹ The Senate includes all University officers of full professorial rank and all others in charge of independent departments of instruction; also those members of Senate committees who are not otherwise members of the Senate. The names are listed in order of seniority of appointment.

§ Deceased.

- ROGER ADAMS, Ph.D., D.Sc., Professor of Organic Chemistry and Head of the Department of Chemistry
- JOSEPH HOWARD BEARD, A.M., M.D., Professor of Hygiene, Head of the Department of Health Service, and University Health Officer
- GEORGE TOBIAS FLOM, Ph.D., Professor of Scandinavian Languages and English Philology, *Emeritus*
- WALTER LEE GAINES, Ph.D., Professor of Milk Production
- SIMON LITMAN, Dr. Jur. Pub. et Rer. Cam., Professor of Economics, *Emeritus*
- THOMAS EDMUND SAVAGE, Ph.D., Professor of Geology, *Emeritus*
- TERENCE THOMAS QUIRKE, E.M., Ph.D., Professor of Geology
- ROBERT DANIEL CARMICHAEL, Ph.D., Professor of Mathematics and Dean of the Graduate School
- MARTIN JOHN PRUCHA, Ph.D., Professor of Dairy Bacteriology, *Emeritus*
- WILLIAM SPENCE ROBERTSON, Ph.D., Professor of History, *Emeritus*
- WALTER LEE SUMMERS, A.B., LL.B., J.D., Professor of Law
- ALBERT JAMES HARNO, B.S., LL.B., Litt.D., LL.D., Professor of Law and Dean of the College of Law
- EMIL WILHELM LEHMANN, B.S., E.E., A.E., Professor of Agricultural Engineering and Head of the Department
- CLELL LEE METCALF, D.Sc., Professor of Entomology and Head of the Department (on leave of absence)
- HARRISON AUGUST RUEHE, Ph.D., Professor of Dairy Manufactures
- LOUISE FREER, A.M., Professor of Physical Education for Women and Head of the Department
- GEORGE WASHINGTON GOBLE, A.B., LL.B., Professor of Law
- ALBERT AUSTIN HARDING, Mus.D., Professor of Music and Director of Military Bands
- ALONZO PLUMSTED KRATZ, M.S., Research Professor of Mechanical Engineering, *Emeritus*
- WALTER SCOTT MONROE, Ph.D., Professor of Education, Acting Dean of the College of Education, and Director of the Bureau of Educational Research
- LLOYD MOREY, A.B., B.Mus., C.P.A., LL.D., Professor of Accountancy and Comptroller
- REXFORD NEWCOMB, A.M., M.Arch., Professor of the History of Architecture, Dean of the College of Fine and Applied Arts, and Director of the Bureau of Community Planning
- FRED B. SEELY, M.S., Professor of Theoretical and Applied Mechanics and Head of the Department
- FRED WILBUR TANNER, Ph.D., D.Sc., Professor of Bacteriology and Head of the Department
- WILBUR M. WILSON, M.M.E., C.E., D.Eng., Research Professor of Structural Engineering
- ROBERT CARL ZUPPKE, Ph.B., Professor of Physical Education for Men, *Emeritus*
- FREDERIC BENJAMIN STIVEN, B.Mus., Mus.D., A.A.G.O., Professor of Music and Director of the School of Music§
- LESLIE ELLSWORTH CARD, Ph.D., Professor of Poultry Husbandry
- MATTHEW THOMPSON MCCLURE, Ph.D., Litt.D., Professor of Philosophy, Acting Head of the Department, and Dean of the College of Liberal Arts and Sciences
- WILLIAM CUMMING ROSE, Ph.D., Professor of Biochemistry
- ROBERT HORACE BAKER, Ph.D., D.Sc., Professor of Astronomy and Head of the Department
- MARIA LEONARD, A.M., Litt.D., Dean of Women, *Emerita*
- HAROLD CLAYTON M. CASE, Ph.D., Professor of Agricultural Economics and Head of the Department (on leave of absence until January 1, 1947)
- FREDERICK CHARLES BAUER, Ph.D., Professor of Soil Fertility
- ARTHUR MOSES BUSWELL, Ph.D., Research Professor of Chemistry
- JAY COURTLAND HACKLEMAN, A.M., Professor of Crops Extension
- B. SMITH HOPKINS, Ph.D., D.Sc., LL.D., Professor of Inorganic Chemistry, *Emeritus*
- JOHN MABRY MATHEWS, Ph.D., Professor of Political Science
- JOHN ADDISON CLEMENT, Ph.D., Professor of Education, *Emeritus*
- WILLIAM EVERETT BRITTON, A.M., J.D., Professor of Law and Legal Counsel
- EDWARD JOSEPH FILBEY, Ph.D., C.P.A., Professor of Accountancy
- WORTH HUFF RODEBUSH, Ph.D., Professor of Physical Chemistry

§ Deceased.

- FREDERIC ARTHUR RUSSELL, Ph.D., Professor of Business Organization and Operation
(on leave of absence for the year)
- WILLIAM ERNEST CARROLL, Ph.D., Professor of Swine Husbandry and Associate Director of the Agricultural Experiment Station
- MAXWELL JAY DORSEY, Ph.D., Professor of Pomology and Head of the Department of Horticulture
- HAROLD EATON BABBITT, M.S., Professor of Sanitary Engineering
- NEIL CONWELL BROOKS, Ph.D., Professor of German, *Emeritus*
- ERNEST E. DE TURK, Ph.D., Professor of Soil Fertility
- HAROLD HANSON MITCHELL, Ph.D., Professor of Animal Nutrition
- RAYMOND STRATTON SMITH, Ph.D., Professor of Soil Physics
- OLIVER LEROY McCASKILL, Ph.B., J.D., Professor of Law, *Emeritus*
- THEODORE CALVIN PEASE, Ph.D., Professor of History and Head of the Department
- ROBERT FRANCIS SEYBOLT, Ph.D., Professor of the Humanities
- WHITNEY CLARK HUNTINGTON, M.S., C.E., Professor of Civil Engineering and Head of the Department
- JOHN STANLEY CRANDELL, B.S., C.E., Professor of Highway Engineering
- EVERETT GILLHAM YOUNG, M.S., M.E., Professor of Railway Mechanical Engineering§
- ARNOLD EMCH, Ph.D., Professor of Mathematics, *Emeritus*
- CLARENCE WALTER HAM, M.E., Professor of Machine Design
- ARTHUR BEVERLY MAYS, A.M., Professor of Industrial Education
- JOSEPH ALBERT POLSON, B.S., M.E., Professor of Steam Engineering, *Emeritus*
- WARREN ALBERT RUTH, Ph.D., Professor of Pomological Physiology
- VICTOR ERNEST SHELFORD, Ph.D., Professor of Zoology, *Emeritus*
- LAWRENCE WILLIAM MURPHY, A.M., Litt.D., Professor of Journalism
- DONALD REED TAFT, Ph.D., Professor of Sociology (on leave of absence first semester)
- CARL HERBERT CASBERG, B.S., M.E., Professor of Mechanical Engineering
- THOMAS WHITFIELD BALDWIN, Ph.D., Professor of English (on leave of absence for the year)
- ARTHUR WILBUR CLEVINGER, Ed.D., High School Visitor with the rank of Professor
- ARTHUR BYRON COBLE, Ph.D., LL.D., Professor of Mathematics and Head of the Department
- HERBERT WOODROW, Ph.D., Professor of Psychology and Head of the Department
- MERRILL ISAAC SCHNEBLY, A.B., J.D., J.S.D., Professor of Law
- GEORGE LINDENBERG CLARK, Ph.D., D.Sc., Professor of Chemistry
- GEORGE BATES WEISIGER, B.S., LL.B., J.D., Professor of Law
- ERNEST THEODORE HILLER, Ph.D., Professor of Sociology
- JOHN THEODORE BUCHHOLZ, Ph.D., Professor of Botany
- MERLIN HAROLD HUNTER, Ph.D., LL.D., Professor of Economics and Head of the Department
- FREDERIC EDWARD LEE, Ph.D., Professor of Economics
- FRANCIS WHEELER LOOMIS, Ph.D., Professor of Physics and Head of the Department
- ARTHUR SAMUEL COLBY, Ph.D., Professor of Pomology
- RALPH KENT HURSH, B.S., Professor of Ceramic Engineering
- CYRUS EDMUND PALMER, M.S., Professor of Architectural Engineering and Associate Dean of the College of Fine and Applied Arts
- CHRIS SIMEON RHODE, B.S., Professor of Dairy Husbandry Extension
- WALDO SHUMWAY, Ph.D., Professor of Zoology
- JOSEPH TYKOCINSKI TYKOCINER, E.E., Special Research Professor of Electrical Engineering
- HARLEY JONES VAN CLEAVE, Ph.D., Professor of Zoology (on leave of absence second semester)
- CLYDE MELVIN WOODWORTH, Ph.D., Professor of Plant Genetics
- WILLIAM WODIN YAPP, Ph.D., Professor of Dairy Cattle Husbandry
- GUY ALAN TAWNEY, Ph.D., Professor of Philosophy, *Emeritus*§
- FREDERICK CHARLES DIETZ, Ph.D., Professor of History
- HAROLD WRIGHT HOLT, A.B., LL.B., S.J.D., Professor of Law
- PAUL VAN BRUNT JONES, Ph.D., Professor of History
- CARL SHIPP MARVEL, Ph.D., Professor of Organic Chemistry
- JAMES GARFIELD RANDALL, Ph.D., Professor of History
- SEWARD CHARLE STALEY, Ph.D., Professor of Physical Education for Men, Head of the Department, and Director of the School of Physical Education

§ Deceased.

- WILLIAM OSCAR BLANCHARD, Ph.D., Professor of Geography
 OTTO GEORGE SCHAFER, B.S., Professor of Landscape Architecture and Head of the Department
 STANLEY HART WHITE, M.L.A., Professor of Landscape Architecture
 KARL BAPTISTE LOHMANN, M.L.A., Professor of Landscape Architecture
 CLARENCE ARTHUR BERDAHL, Ph.D., Professor of Political Science and Chairman of the Department
 THOMAS ELIOT BENNER, Ed.D., Professor of Education (on leave of absence for the year)
 FRANK WALBRIDGE DE WOLF, B.S., Professor of Geology, *Emeritus*
 FRED HAROLD TURNER, Ph.D., Dean of Students
 GEORGE PHILIP TUTTLE, B.S., Registrar
 HARRY WARREN ANDERSON, Ph.D., Professor of Plant Pathology
 PAUL D. CONVERSE, A.M., LL.D., Professor of Business Organization and Operation, and Research Professor in the Bureau of Economic and Business Research
 HAROLD NEWCOMB HILLEBRAND, Ph.D., Professor of English (on leave of absence)
 RANDOLPH PHILIP HOELSCHER, M.S., C.E., Professor of General Engineering Drawing and Secretary of the University Senate
 ANANIAS CHARLES LITTLETON, Ph.D., C.P.A., Professor of Accountancy
 HORACE JAMES MACINTIRE, M.M.E., Professor of Refrigeration (on leave of absence second semester)
 FRANK ERWIN RICHART, M.S., C.E., Research Professor of Engineering Materials
 WILLIAM H. SEVERNS, M.S., Professor of Mechanical Engineering (on leave of absence)
 JOHN VAN HORNE, Ph.D., Professor of Spanish and Italian, and Head of the Department
 ARTHUR G. ANDERSON, C.E., Ph.D., Professor of Business Organization and Operation
 HENRI JACOBUS VAN DEN BERG, Graduate, Royal Conservatory, Amsterdam, Professor of Music, *Emeritus*
 REYNOLD CLAYTON FUSON, Ph.D., Professor of Organic Chemistry
 CHARLES F. SCHLATTER, M.S., C.P.A., Professor of Accountancy
 GEORGE FOSS SCHWARTZ, B.Mus., A.M., Professor of Music, *Emeritus*
 ANDREW IRVING ANDREWS, Ph.D., Professor of Ceramic Engineering and Head of the Department
 JAMES JOSEPH DOLAND, M.S., C.E., D.Sc., Professor of Civil Engineering
 ABNER RICHARD KNIGHT, M.E., M.S., E.E., Professor of Electrical Engineering
 WILLIAM JAMES PUTNAM, M.S., M.E., Professor of Theoretical and Applied Mechanics
 THOMAS CLARK SHEDD, M.S., C.E., Professor of Structural Engineering
 PAUL THOMAS YOUNG, Ph.D., Professor of Psychology
 JASPER OWEN DRAFFIN, M.S., Professor of Theoretical and Applied Mechanics
 COLEMAN ROBERTS GRIFFITH, Ph.D., LL.D., Professor of Education and Provost
 ROBERT R. HUDELSON, Ph.D., Professor of Agricultural Economics and Associate Dean of the College of Agriculture
 NEWLIN DOLBEY MORGAN, M.S., C.E., Professor of Architectural Engineering
 ELMER ROBERTS, Ph.D., Professor of Animal Genetics
 CHARLES LESLIE STEWART, Ph.D., D.Sc., Professor of Agricultural Economics
 CHARLES ALLYN WILLIAMS, Ph.D., Professor of German, *Emeritus*
 NEIL EVERETT STEVENS, Ph.D., Professor of Botany and Head of the Department
 CHARLES STEWART HAVENS, M.S., Director of the Physical Plant Department
 ROBERT BELL BROWNE, Ph.D., Professor of Education and Dean of the Summer Session and of University Extension
 GEORGE HARLAN DUNGAN, Ph.D., Professor of Crop Production
 WILLIAM BARBOUR NEVENS, Ph.D., Professor of Dairy Cattle Feeding
 LAURENCE JOSEPH NORTON, Ph.D., Professor of Agricultural Economics
 JULIET LITA BANE, A.M., D.Sc., Professor of Home Economics and Head of the Department
 EDWIN HEWETT REEDER, Ph.D., Professor of Education
 ROBERT CHILDERS ASHBY, Ph.D., Professor of Livestock Marketing
 REUEL RICHARD BARLOW, A.M., Professor of Journalism
 MARTIN LUTHER MOSHER, M.Agr., Professor of Farm Management Extension
 THOMAS ERWIN PHIPPS, Ph.D., Professor of Physical Chemistry
 JOSEPH WARD SWAIN, Ph.D., Professor of History
 PAUL HUBERT TRACY, Ph.D., Professor of Dairy Manufactures
 JAMISON VAWTER, M.S., C.E., Professor of Civil Engineering

- CARROLL CARSON WILEY, B.S., C.E., Professor of Civil Engineering
 JOHN NELSON SPAETH, M.F., Ph.D., Professor of Forestry and Head of the Department
 ESSEL RAY DILLAVOU, A.M., J.D., Professor of Business Law
 HARRIS FRANCIS FLETCHER, Ph.D., Professor of English
 HERBERT McNEE HAMLIN, Ph.D., Professor of Agricultural Education
 PETER GERALD KRUGER, Ph.D., Professor of Physics
 MRS. ALTA GWINN SAUNDERS, A.M., Professor of Business English
 HENNING LARSEN, Ph.D., Professor of English and Head of the Department
 JOSEPH FRANCIS JACKSON, Ph.D., Professor of French, Head of the Department, and
 Chairman of the Division of Humanities
 LEVERETT ALLEN ADAMS, Ph.D., Professor of Zoology, *Emeritus*, and Curator of the
 Museum of Natural History
 HENRY ROY BRAHANA, Ph.D., Professor of Mathematics
 SLEETER BULL, M.S., Professor of Meats
 WILLIAM NELSON ESPY, M.S., Professor of Mechanical Engineering
 STANLEY WILLIAM HALL, B.S., Professor of Floriculture
 WILLIAM PATRICK HAYES, Ph.D., Professor of Entomology
 WALTER AUGUST HUELSEN, M.S., Professor of Vegetable Crops
 HENRY FRASER JOHNSTONE, Ph.D., Professor of Chemical Engineering
 WILLIAM GARFIELD KAMMLADE, Ph.D., Professor of Sheep Husbandry
 CHARLES MAYARD KNEIER, Ph.D., J.D., Professor of Political Science
 JOHN OTTO KRAEHNBUHEL, M.S., E.E., Professor of Electrical Engineering
 OLIVER RALPH OVERMAN, Ph.D., Professor of Dairy Chemistry
 JOHN JAY PARRY, Ph.D., Professor of English
 FREDERICK STANLEY RODKEY, Ph.D., Professor of History
 OGLE HESSE SEARS, Ph.D., Professor of Soil Biology
 GEORGE FREDERICK SMITH, Ph.D., Professor of Chemistry
 ROSCOE RAYMOND SNAPP, Ph.D., Professor of Beef Cattle Husbandry
 JOHN CLYDE SPITLER, B.S., Professor of Agricultural Extension
 GEORGE THOMAS STAFFORD, Ed.D., Professor of Physical Education for Men
 WALDEMAR JOSEPH TRJITZINSKY, Ph.D., Professor of Mathematics
 ARTHUR GIBSON VESTAL, Ph.D., Professor of Botany (on leave of absence for the year)
 OSCAR FRIEDOLIN WEBER, Ph.D., Professor of Education
 SAMUEL FREDERIC WILL, Ph.D., Professor of French
 FREDRICK SEATON SIEBERT, A.B., J.D., Professor of Journalism and Director of the
 School of Journalism
 FLORIAN WITOLD ZNANIECKI, Ph.D., Professor of Sociology
 ERNEST THOMPSON ROBBINS, M.S.A., Professor of Animal Husbandry Extension,
Emeritus
 JOHN WILLIAM ALBIG, Ph.D., Professor of Sociology and Chairman of the Department
 HAROLD LEROY WALKER, M.S., Met.E., Professor of Metallurgical Engineering and
 Head of the Department of Mining and Metallurgical Engineering (on leave of
 absence beginning April 1, 1947)
 CARL GOTTFRIED HARTMAN, Ph.D., Professor of Zoology and Physiology, Head of the
 Department, and Chairman of the Division of Biological Sciences
 LAFORCE BAILEY, M.S., B.P., Professor of Art (on leave of absence first semester)
 JOHN FRED BELL, Ph.D., Professor of Economics
 CHARLES EARL BRADBURY, B.P., M.F.A., Professor of Art
 PEMBERKE HOLCOMB BROWN, Ph.D., Professor of Economics
 MRS. KATHRYN VAN AKEN BURNS, A.M., Professor of Home Economics
 DEANE G. CARTER, M.S., Professor of Farm Structures
 HORACE MONTGOMERY GRAY, Ph.D., Professor of Economics and Associate Dean of
 the Graduate School
 TOM SHERMAN HAMILTON, Ph.D., Professor of Animal Nutrition
 PAUL EVANS JOHNSTON, Ph.D., Professor of Agricultural Economics
 GARRET LOWELL JORDAN, Ph.D., Professor of Agricultural Economics
 ALAN KEMP LAING, A.B., B.S., Professor of Architecture
 OTHO CLARKE LEITER, A.B., Professor of Journalism
 FRANK MILLS LESCHER, B.S., Professor of Architecture
 DAVID PHILIP LOCKLIN, Ph.D., McKinley Professor of the Economics of Public Utilities
 RUSSELL HANCOCK MILES, M.Mus., Professor of Music
 BEN EDWIN PERRY, Ph.D., Professor of the Classics and Acting Head of the De-
 partment
 ROBERT COOKE ROSS, Ph.D., Professor of Farm Management

- FRED ALBERT SHANNON, Ph.D., Professor of History
 RAY IRIS SHAWL, M.S., Professor of Farm Machinery
 FREDERICK GUY STRAUB, M.S., Met.E., Special Research Professor of Chemical Engineering
 SHERLOCK SWANN, JR., Ph.D., Research Professor of Chemical Engineering
 FRANCIS GRAHAM WILSON, Ph.D., Professor of Political Science
 ELMER JOSEPH WORKING, M.S., Professor of Agricultural Economics (on leave of absence for the year)
 CECIL VINCENT DONOVAN, B.P., M.F.A., Professor of Art
 BENJAMIN KOEHLER, Ph.D., Professor of Crop Pathology (on leave of absence second semester)
 ROBERT BINGHAM DOWNS, M.S., Litt.D., Professor of Library Science, Director of the Library, and Director of the Library School
 GERALD MARKS ALMY, Ph.D., Professor of Physics
 JOHN CHRISTIAN BAILAR, JR., Ph.D., Professor of Chemistry and Department Secretary
 ROLAND WILLEY BARTLETT, Ph.D., Professor of Agricultural Economics
 DWIGHT GRANVILLE BENNETT, B.S., Special Research Professor of Ceramic Engineering
 MAURICE KENDALL FAHNESTOCK, M.S., Research Professor of Mechanical Engineering and Assistant Director of the Engineering Experiment Station
 DILMAN WALTER GOTSHALK, Ph.D., Professor of Philosophy
 GLENN DEVERE HIGGINSON, Ph.D., Professor of Psychology
 CHARLES ALVA KEENER, M.S., E.E., Professor of Electrical Engineering
 DONALD WILLIAM KERST, Ph.D., D.Sc., Professor of Physics
 DAVID EDGAR LINDSTROM, Ph.D., Professor of Rural Sociology
 NATHAN MORTIMORE NEWMARK, Ph.D., Research Professor of Civil Engineering
 NELLIE LOUISE PERKINS, Ph.D., Professor of Home Economics
 JOHN HENRY REEDY, Ph.D., Professor of Chemistry, *Emeritus*
 DAVID GERALD RYAN, M.S., M.E., Professor of Mechanical Engineering
 JESSE SAMPSON, D.V.M., Ph.D., Professor of Veterinary Physiology and Pharmacology, and Head of the Department
 HERMAN JOHN SCHRADER, M.S., Research Professor of Theoretical and Applied Mechanics
 CLIFFORD HARRY SPRINGER, M.S., C.E., Professor of General Engineering Drawing
 EDWARD EMERSON STAFFORD, B.S., Dean of Men
 DAVID CLEVELAND WIMER, Ph.D., Professor of Soil Physics
 SEICHI KONZO, M.S., Special Research Professor of Mechanical Engineering
 MARIETTA STEVENSON (MRS. LOUIS LIVINGSTON), Ph.D., Professor and Director of Social Welfare Administration
 RALPH VICTOR HUSSONG, Ph.D., Professor of Dairy Bacteriology
 FRANK BOLTON ADAMSTONE, Ph.D., Professor of Zoology
 REINHOLD BAER, Ph.D., Professor of Mathematics
 ORVILLE THOMAS BONNETT, Ph.D., Professor of Plant Genetics
 LELAND JOHN HAWORTH, Ph.D., Professor of Physics
 WILLIAM GRIFFITH HILL, A.M., M.Mus., Professor of Music
 RICHARD ROXSABRO KUDO, D.Sc., Professor of Zoology
 HENRY SHELDON STILLWELL, M.S., Professor of Aeronautical Engineering and Head of the Department
 ROGER HAMMOND BRAY, Ph.D., Professor of Soil Fertility
 WILLIAM LITTELL EVERITT, E.E., Ph.D., Professor of Electrical Engineering and Head of the Department
 JANICE MINERVA SMITH, Ph.D., Professor of Nutrition
 ERNEST OLIVER HERREID, Ph.D., Professor of Dairy Manufactures
 MRS. LEAH FULLENWIDER TRELEASE, A.M., Assistant Professor of English and Dean of Women
 HARRY KENNETH ALLEN, Ph.D., Professor of Economics and Director of the Bureau of Economic and Business Research
 JAMES BURTON ANDREWS, M.S., Professor of Farm Management Extension
 HENRY HEATON BAILY, A.M., C.P.A., Professor of Accountancy
 WALTER VALENTINE BALDUF, Ph.D., Professor of Entomology
 JAMES HOLLEY BARTLETT, Ph.D., Professor of Theoretical Physics
 MAXIMILIAN BECK, Ph.D., Visiting Professor of Philosophy

JAMES DATER BILSBORROW, B.S., Professor of Agricultural Extension
RALPH HAMILTON BLODGETT, Ph.D., Professor of Economics
DAVID GORDON BOURGIN, Ph.D., Professor of Mathematics
HERBERT EDMUND CARTER, Ph.D., Professor of Chemistry
RAYMOND BERNARD CATTELL, Ph.D., D.Sc., Research Professor of Psychology
THOMAS JAMES DOLAN, M.S., Research Professor of Theoretical and Applied Mechanics
JOSEPH LEO DOOB, Ph.D., Professor of Mathematics
NEWTON EDWARD ENSIGN, M.A., Professor of Theoretical and Applied Mechanics
JULIAN ROBERT FELLOWS, M.S., Professor of Mechanical Engineering
JOHN THEODORE GEISSENDOERFER, Ph.D., Professor of German
MORITZ GOLDBABER, Ph.D., Professor of Physics
ARTHUR HAMILTON, Ph.D., Professor of Spanish, Assistant Dean of Men for Foreign Students, and Counselor on the University Council on Teacher Education
MARVIN THEODORE HERRICK, Ph.D., Professor of English
HUBERT KESSLER, Ph.D., Professor of Music
PAUL NISSLEY LANDIS, Ph.D., Professor of English
FRANCIS EDWARD LONGMIRE, M.S., Professor of Agricultural Extension
WILLIAM ADDISON NEISWANGER, JR., Ph.D., Professor of Economics
EDWARD FREDERICK POTTHOFF, Ph.D., Professor of Education and Director of the Bureau of Institutional Research
WILLIAM HUNT SCHEICK, M.S., Professor of Architecture and Coordinator of the Small Homes Council
WILLIAM LOUIS SCHWALBE, M.S., Professor of Theoretical and Applied Mechanics
ARTHUR WELLESLEY SECORD, Ph.D., Professor of English
BUNNIE OTHANEL SMITH, Ph.D., Professor of Education
HUBERT WINSTON SMITH, M.B.A., LL.B., M.D., Professor of Legal Medicine
HAROLD RAY SNYDER, Ph.D., Professor of Chemistry
LEWIS FRANCIS STIEG, Ph.D., Professor of Library Science and Assistant Director of the Library School
KENNETH JAMES TRIGGER, M.S., M.E., Professor of Mechanical Engineering
ALEXANDER TURYN, Ph.D., Visiting Professor of the Classics
HAROLD ROLLIN WANLESS, Ph.D., Professor of Geology
HAROLD WINFORD HANNAH, B.S., LL.B., Associate Professor of Agricultural Economics and Director of the Division of Special Services for War Veterans
OSCAR ZARISKI, Ph.D., Research Professor of Mathematics
HARRY AUGUSTINE BUCKLEY, Colonel, Cavalry, Professor of Military Science and Tactics, and Commandant
HAROLD CURTIS HAND, Ph.D., Professor of Education
LELAND RALPH LAMPMAN, B.S., Captain, U.S.N., Professor of Naval Science and Commanding Officer
KENNETH BRYAN RAPER, Ph.D., Visiting Professor of Botany‡
LESLIE AULLS BRYAN, Ph.D., LL.B., Professor of Business Organization and Operation, and Director of the Institute of Aeronautics
JOHN ELDON GIESEKING, Ph.D., Professor of Soil Physics
TRUMAN GEORGE YUNCKER, Ph.D., D.Sc., Visiting Research Professor of Botany
GORDON NORTON RAY, Ph.D., Professor of English
HELMUT REHDER, Ph.D., Professor of German and Head of the Department
ARTHUR LEE SAMUEL, D.Sc., Professor of Electrical Engineering
KENNETH SMITH CARLSTON, LL.B., A.M., Professor of Law
EDWARD WAITE CLEARY, J.D., J.S.D., Professor of Law
THOMAS KIRK CURETON, JR., Ph.D., Professor of Physical Education for Men
ARTHUR FARWELL DODGE, Ph.D., Professor of Industrial Education
ROBERT EMERSON, Ph.D., Research Professor of Botany
MAX ALBERT FAUCETT, M.S., E.E., Professor of Electrical Engineering
MAX HAROLD FISCH, Ph.D., Professor of Philosophy
BRUCE RUTLEDGE FOOTE, B.Mus., Professor of Music
ALBERT EBY HERSHEY, Ph.D., Research Professor of Mechanical Engineering (on leave of absence for the year)
ROBERT WILLIAM JUGENHEIMER, Ph.D., Professor of Plant Genetics
CHARLES ANTHONY KNUDSON, Ph.D., Professor of French

‡ Second semester.

ELMER ISAAC LOVE, M.S., Professor of Architecture
 CHARLES WATERS ODELL, Ph.D., Professor of Education
 FRANCIS MARION PORTER, M.S., Professor of General Engineering Drawing
 LORENZ EDWARD ST. CLAIR, D.V.M., Ph.D., Professor of Veterinary Anatomy and
 Histology, and Head of the Department
 CHARLES HAROLD SANDAGE, Ph.D., Professor of Journalism
 SHERMAN SCHOONMAKER, M.Mus., Professor of Music
 FREDERICK THEODORE WALL, Ph.D., Professor of Chemistry
 NORMAN ALWYN PARKER, M.S., M.E., Professor of Mechanical Engineering and Head
 of the Department
 FRANK JOHN ROOS, JR., Ph.D., Professor of the History of Art and Head of the
 Department of Art
 AMIR BOKTOR, Ph.D., Exchange Professor of Education
 WILLIAM REUEL CHEDSEY, D.Eng., E.M., Professor of Mining Engineering
 PHILLIPS BRADLEY, Ph.D., Professor of Political Science and Director of the Institute
 of Labor and Industrial Relations
 WILLIAM HESTON MCPHERSON, Ph.D., Professor of Economics
 FAY VANISLE TOOLEY, Ph.D., Professor of Glass Technology
 WILLIAM ERNEST STEPHEN TURNER, D.Sc., Visiting Professor of Glass Technology*
 EUGENE I. RABINOWITCH, Ph.D., Research Professor of Botany

Members by Virtue of Membership on Senate Committees

BEULAH MAY ARMSTRONG, Ph.D., Assistant Professor of Mathematics
 WARREN FORD DOOLITTLE, JR., B.F.A., Assistant Professor of Art
 CHARLES EVERETTE FLYNN, A.M., Assistant Professor of Journalism
 MARGARET ROSE GOODYEAR, M.S., Associate in Home Economics
 CAMERON CHARLES GULLETTE, Ph.D., Associate Professor of French
 HARVEY WILBORN HUEGY, Ph.D., Associate Professor of Business Organization and
 Operation, and Research Associate Professor in the Bureau of Economic and
 Business Research
 CHESTER OSCAR JACKSON, Ed.D., Associate Professor of Physical Education for Men
 WALTER MILLER JOHNSON, JR., A.M., Instructor in Architecture
 ALVIN LEONARD LANG, M.S., Associate Chief in Soil Experiment Fields
 EMMETT B. McNATT, Ph.D., Associate Professor of Economics
 DOUGLAS RAYMOND MILLS, B.S., Assistant Professor of Physical Education for Men
 and Director of Intercollegiate Athletics
 GERALD EVERETT MOORE, Ph.D., Associate Professor of Mathematics and Associate
 Dean of the College of Liberal Arts and Sciences
 HALE LLOYD NEWCOMER, Ph.D., C.P.A., Associate Professor of Accountancy
 RUSSELL MARION NOLEN, Ph.D., Associate Professor of Economics
 WILLIAM ALBERT OLIVER, M.S., C.E., Associate Professor of Civil Engineering
 ROBERT FREDERICK PATON, Ph.D., Associate Professor of Physics
 JOSEPH WILLIAM PETERS, Ph.D., Assistant Professor of Mathematics and Counselor
 on the University Council on Teacher Education
 WILLIAM COULTER ROBB, A.M., J.D., LL.M., Assistant Professor of Economics and
 Assistant Dean of the College of Commerce and Business Administration
 CHARLES WALTER ROBERTS, Ph.D., Associate Professor of English and Executive
 Secretary of the Department
 CHARLES WILSON SANFORD, Ph.D., Associate Professor of Education and Coordinator
 of Teacher Education
 CLARENCE EDWIN SAWHILL, M.Mus., Associate Professor of Music and Assistant
 Director of Military Bands
 HAROLD WILLIAM SCOTT, Ph.D., Associate Professor of Geology
 RAYMOND PHINEAS STEARNS, Ph.D., Associate Professor of History and Chairman of
 the Division of Social Sciences
 FREDERIC RUSSELL STEGGERDA, Ph.D., Associate Professor of Physiology
 GEORGE IRA WALLACE, Ph.D., Associate Professor of Bacteriology
 LEWIS WARD WILLIAMS, Ph.D., Assistant Professor of Education and Secretary of
 the Senate Committee on the Appointment of Teachers

* Resigned.

Associate Professors

- ARETAS WILBUR NOLAN, Ph.D., Associate Professor of Agricultural Education, *Emeritus*
- WILLIAM EDWARD BURGE, Ph.D., Associate Professor of Physiology, *Emeritus*
- WILLIAM FREDERICK SCHULZ, E.E., Ph.D., Associate Professor of Physics, *Emeritus*
- FRANCES SIMPSON, B.L.S., M.L., Associate Professor of Library Economy and Assistant Director of the Library School, *Emerita*
- ROY HAROLD WILCOX, Ph.D., Associate Professor of Farm Management
- OLIVE CLIO HAZLETT, Ph.D., Associate Professor of Mathematics (on leave of absence)
- MATTHEW RUTHERFORD RIDDELL, B.A.Sc., Associate Professor of Mechanical Engineering, *Emeritus*
- FREDERICK FRANCIS WEINARD, Ph.D., Associate Professor of Floricultural Physiology
- ELMER HOWARD WILLIAMS, Ph.D., Associate Professor of Experimental Physics
- THOMAS EDWARD O'DONNELL, M.S., M.Arch., Associate Professor of Architecture
- JOSEF FRANKLIN WRIGHT, A.B., Associate Professor of Journalism, Director of Public Information, and Director of the Radio Station
- ERNEST ALEXANDER REID, M.S., E.E., Associate Professor of Electrical Engineering
- EDWIN LEODGAR THEISS, Ph.D., C.P.A., Associate Professor of Accountancy
- JOHN KLINE TUTHILL, B.S., E.E., Associate Professor of Railway Electrical Engineering
- EDWARD HARDENBERGH WALDO, M.E., M.S., E.E., Associate Professor of Electrical Engineering, *Emeritus*
- VICTOR WENDELL KELLEY, Ph.D., Associate Professor of Horticulture Extension
- ROBERT BRUCE WEIRICK, Ph.D., Associate Professor of English
- ETHEL BOND, A.B., B.L.S., Associate Professor of Library Science
- ANNE MORRIS BOYD, A.B., B.L.S., Associate Professor of Library Science
- DUANE TAYLOR ENGLIS, Ph.D., Associate Professor of Chemistry
- WAYLAND MAXFIELD PARRISH, Ph.D., Associate Professor of Speech
- JOHN ANGUS NICHOLSON, Ph.D., Associate Professor of Philosophy
- CHESTER REED ANDERSON, A.M., Associate Professor of English
- LUDWIG FREDERICK AUDRIETH, Ph.D., Associate Professor of Chemistry
- FLOYD HAMILTON CRANE, M.S., Associate Professor of Soil Fertility
- FRANK GREENE DICKINSON, Ph.D., Associate Professor of Economics (on leave of absence for the year)
- BENJAMIN FINLEY TIMMONS, Ph.D., Associate Professor of Sociology
- RICHARD VINCENT LOTT, Ph.D., Associate Professor of Pomology
- ARNE RAE, B.S., Associate Professor of Journalism
- JOSEPH BERNARD CUNNINGHAM, B.S., Associate Professor of Farm Management Extension
- JAMES ELWOOD DAVIS, B.S., M.F., Associate Professor of Forestry Extension*
- HARRY JAMES FULLER, Ph.D., Associate Professor of Botany and Counselor on the University Council on Teacher Education
- SIDNEY ERWIN GLENN, Ph.D., Associate Professor of English and Counselor on the University Council on Teacher Education
- SAMUEL CHARLES KENDEIGH, Ph.D., Associate Professor of Zoology
- WILLIAM HORACE RAYNER, C.E., M.S., Associate Professor of Civil Engineering
- LYELL JAY THOMAS, Ph.D., Associate Professor of Zoology
- RAYMOND CLARENCE WERNER, Ph.D., Associate Professor of History
- ARTHUR LEIGHTON YOUNG, M.S., Associate Professor of Farm Power
- ROLAND MITCHELL SMITH, Ph.D., Associate Professor of English
- NORVILLE JAMES ALLEMAN, M.S., Special Research Associate Professor of Engineering Materials
- EDWARD WALTER COMINGS, D.Sc., Associate Professor of Chemical Engineering
- RALPH ELLSWORTH CRAMER, M.S., Special Research Associate Professor of Engineering Materials
- CLYDE WILSON KEARNS, Ph.D., Associate Professor of Entomology
- PIERCE WADDELL KETCHUM, Ph.D., Associate Professor of Mathematics
- WALLACE MONROE LANSFORD, M.S., C.E., Associate Professor of Theoretical and Applied Mechanics

* Resigned.

- CLIFFORD LADD PROSSER, Ph.D., Associate Professor of Zoology
 WALTER LAIDLAW ROOSA, M.Mus., Associate Professor of Music
 CLYDE FRANK SNIDER, Ph.D., Associate Professor of Political Science
 FRANK HERMAN BEACH, Ph.D., Associate Professor of Business Organization and
 Operation, and Secretary of Senate Committee on Student Discipline
 JANE CHURCHILL WATT, M.Mus., Associate Professor of Music
 BENJAMIN VINCENT HALL, Ph.D., Associate Professor of Zoology
 RALPH CARROLL HAY, B.S., Associate Professor of Agricultural Engineering Extension
 MELVIN HENDERSON, M.S., Associate Professor of Vocational Agriculture
 FREDRICK ADOLPH PETERSEN, M.S., Special Research Associate Professor of Ceramic
 Engineering
 LETITIA WALSH, A.M., Associate Professor of Home Economics Education
 OREN LESLIE WHALIN, Ph.D., Associate Professor of Agricultural Extension
 KATHARINE NEWKIRK HANDLEY, A.M., M.S.W., Associate Professor of Social Welfare
 Administration
 LEWIS CAPERS BRANSCOMB, JR., A.M., Associate Professor of Library Science and
 Assistant University Librarian for Public Service Departments
 ROYAL ALFRED GETTMANN, Ph.D., Associate Professor of English
 EDWARD CONRAD JORDAN, Ph.D., Associate Professor of Electrical Engineering
 HARRY LEE ANDREWS, Ph.D., Associate Professor of Biology
 LUTHER BUNYAN ARCHER, M.S., E.E., Associate Professor of Electrical Engineering
 HARRIET THOMPSON BARTO, A.M., Associate Professor of Dietetics
 FANNIE MARIA BROOKS, A.B., R.N., Associate Professor of Health Education
 FRANCIS MATTHEW CLARK, Ph.D., Associate Professor of Bacteriology
 WILLIAM LEIGHTON COLLINS, M.S., Associate Professor of Theoretical and Applied
 Mechanics
 EDGAR L. ERICKSON, Ph.D., Associate Professor of History
 GILBERT HOWARD FETT, Ph.D., Associate Professor of Electrical Engineering
 FRANK HERSCHEL FINCH, Ph.D., Associate Professor of Education
 LOWELL BURDETTE FISHER, Ed.M., Assistant High School Visitor, with the rank of
 Associate Professor
 OLAF STAVSING FJELDE, A.M., Associate Professor of Architecture
 ROBERT FRANCIS FUELLEMAN, Ph.D., Associate Professor of Crop Production
 JOHN HENRY GARLAND, Ph.D., Associate Professor of Geography
 WILLIA KATHRYN GARVER, B.L.S., Associate Professor of Library Science and Assistant
 University Librarian for Acquisitions
 ANNA CUSHMAN GLOVER, Editor, with the rank of Associate Professor, in the Agri-
 cultural Experiment Station and the Extension Service in Agriculture and Home
 Economics
 CHARLES BANNER HAGAN, Ph.D., Associate Professor of Political Science
 STANLEY GILBERT HALL, M.S., Associate Professor of General Engineering Drawing
 THOMAS WILLARD HARRELL, Ph.D., Associate Professor of Psychology
 BRICE HARRIS, Ph.D., Associate Professor of English
 HAROLD NATHANIEL HAYWARD, M.S., E.E., Associate Professor of Electrical Engi-
 neering
 FRED CARLISLE HOOD, Ph.D., Assistant High School Visitor, with the rank of Associate
 Professor (on leave of absence for the year)
 MRS. FLORENCE ISBELL HOSCH, A.M., Associate Professor of Social Welfare Adminis-
 tration
 JOSIE BATCHELLER HOUCHEMS, B.L.S., A.M., Associate Professor of Library Science
 and Assistant University Librarian for Personnel and Binding
 ALBERT JORGENSEN, M.S., E.M., Associate Professor of General Engineering Drawing
 HENRY ROMANOS KAHANE, Ph.D., Associate Professor of Spanish, Portuguese, and
 Italian
 DONALD LORENZO KEMMERER, Ph.D., Associate Professor of Economics
 REINHOLD FRIDTJOF LARSON, Ph.D., Associate Professor of Mechanical Engineering
 JAMES THOBURN LENDRUM, M.S., Associate Professor of General Engineering Drawing
 and Associate Coordinator of the Small Homes Council
 CLYDE MAURICE LINSLEY, M.S., Associate Professor of Soils Extension
 LOUIS LAFORCE MCQUITTY, Ph.D., Associate Professor of Psychology
 HENRY JARVIS MILES, Ph.D., Associate Professor of Mathematics
 VERN G. MILUM, Ph.D., Associate Professor of Entomology

DON HAWK MORGAN, B.S., Associate Professor of Community Planning and Community Consultant in the Bureau of Community Planning
RICHARD MURPHY, Ph.D., Associate Professor of Speech
SEVERINA ELAINE NELSON, Ph.D., Associate Professor of Speech, Director of the Speech Clinic, and Counselor on the University Council on Teacher Education
CHARLES EDWARD NOWELL, Ph.D., Associate Professor of History
CHARLES EDWIN ODEGAARD, Ph.D., Associate Professor of History
JOHN LORENCE PAGE, Ph.D., Associate Professor of Geography
RALPH REX PARKS, A.M., Associate Professor of Agricultural Engineering Extension*
LEON ALFRED PENNINGTON, Ph.D., Associate Professor of Psychology
EDWIN IVAN PILCHARD, B.S., Associate Professor of Agricultural 4-H Club Work
FLORENCE BELL ROBINSON, M.L.D., Associate Professor of Landscape Architecture
HARRY GOULD RUSSELL, M.S., Associate Professor of Animal Husbandry Extension
CARL EDWARD SCHUBERT, B.S., Associate Professor of Mechanical Engineering
CARL ERIC SKRODER, M.S., Associate Professor of Electrical Engineering
E. EVELYN SMITH, A.M., Associate Professor of Institution Management
RUSSELL NEIL SULLIVAN, A.B., LL.B., LL.M., Associate Professor of Law
J. WESLEY SWANSON, M.A., Associate Professor of Speech and Supervisor of Dramatic Productions
HAROLD DANIEL TRIMBLE, A.M., Assistant High School Visitor, with the rank of Associate Professor
ARNOLD HERMAN TROTIER, A.M., Associate Professor of Library Science and Assistant University Librarian for Cataloging
STEWART LAWRENCE TUCKEY, Ph.D., Associate Professor of Dairy Manufactures
PAUL MARION VAN ARSDELL, Ph.D., Associate Professor of Economics
ERNEST DEWITT WALKER, B.S., Associate Professor of Agronomy Extension
SIDNEY MICHAEL DANCOFF, Ph.D., Associate Professor of Physics
ERNEST MCINTOSH LYMAN, Ph.D., Associate Professor of Physics
ROBERT WALLACE MAYER, Ph.D., Associate Professor of Economics
MARK HUBERT HINDSLEY, A.M., Associate Professor of Music and Assistant Director of Military Bands
CARTER BROOKE JENNINGS, B.S., Commander, U.S.N., Associate Professor of Naval Science
LOYD THOMAS DEVORE, Ph.D., Associate Professor of Electrical Engineering
JAKE LUTHER KRIDER, Ph.D., Associate Professor of Swine Husbandry
JOHN HUGH MCGEE, B.S., Colonel, Infantry, Associate Professor of Military Science and Tactics, and Executive Officer
RALPH LAVERNE COOK, Ph.D., Associate Professor of Ceramic Engineering
JOHN BENNETT LAUGERMAN, B.S., Lieutenant Colonel, Engineers, Associate Professor of Military Science and Tactics
HARRY LELAND VAN VELZER, Ph.D., Special Research Associate Professor of Electrical Engineering
GRACE BESSELENE ARMSTRONG, A.M., Associate Professor of Foods and Nutrition Extension
GLENN MYERS BLAIR, Ph.D., Associate Professor of Education
JAMES ELLIOTT BRANCH, M.S., Associate Professor of Architecture
DUANE ADAMS BRANIGAN, M.Mus., Associate Professor of Music and Counselor in the Student Personnel Bureau
MARY LOUISE CHASE, A.M., Associate Professor of Home Economics Extension
JAMES GORDON CLARK, M.S., Associate Professor of Civil Engineering
ALFRED FLETCHER CONARD, LL.M., J.S.D., Associate Professor of Law
EDWARD WILLIAM DOLCH, Ph.D., Associate Professor of Education
MARCUS SELDEN GOLDMAN, Ph.D., Associate Professor of English
WARREN SKINNER HARRIS, M.S., Special Research Associate Professor of Mechanical Engineering
MRS. PEARL ZIEGLER JANSSEN, M.S., Associate Professor of Home Economics
MARIA ZBIGNIEW KRZYWOBLOCKI, A.M., M.S., D.Ae.E., Associate Professor of Aeronautical Engineering
HERBERT AUGUST LAITINEN, Ph.D., Associate Professor of Chemistry
ROBERT WINSTON McCLOY, B.S., Associate Professor of Aeronautical Engineering
ROBERT MAURICE MELAMPY, Ph.D., Associate Professor of Physiology

* Resigned.

- GEORGE THERALD MOELLER, Ph.D., Associate Professor of Chemistry
 CHARLES CLEON MORRILL, D.V.M., Ph.D., Associate Professor of Veterinary Pathology and Hygiene
 RALPH BRAZELTON PECK, C.E., D.C.E., Research Associate Professor of Soil Mechanics
 HOWARD CREIGHTON ROBERTS, A.B., E.E., Special Research Associate Professor of Civil Engineering
 CHESTER G. STARR, JR., Ph.D., Associate Professor of History
 LEONARD DILWORTH WALKER, M.S., C.E., Associate Professor of General Engineering Drawing
 FREDERICK LUDWIG WILL, Ph.D., Associate Professor of Philosophy
 JOHN ELLIOT WILLS, Ph.D., Associate Professor of Farm Management
 JULIUS NICHOLAS HOOK, Ph.D., Visiting Associate Professor of English
 GRANVILLE SPEAR KEITH, M.S., Associate Professor of Architecture
 GEORGE WILSON POWER, B.S., Lieutenant Colonel, Field Artillery, Associate Professor of Military Science and Tactics
 LINDLEY JOSEPH STILES, Ed.D., Associate Professor of Education and Director of Student Teaching
 MERLE RICHARD SUMPTION, Ph.D., Associate Professor of Education
 EDNA ELLIOTT WALLS, A.M., Associate Professor of Child Development and Parent Education Extension
 JOHN THEODORE FLANAGAN, Ph.D., Associate Professor of English
 STANLEY FLETCHER, B.Mus., Associate Professor of Music
 GEORGE Z. HELBER, A.B., Major, Quartermaster Corps, Associate Professor of Military Science and Tactics, and Adjutant
 RUDARD ARTABAN JONES, M.S., Research Associate Professor of Architecture
 JOHN EOFF OLIVER, M.S., Lieutenant Colonel, Transportation Corps, Associate Professor of Military Science and Tactics
 WILLIAM GENE PHELPS, Major, Cavalry, Associate Professor of Military Science and Tactics
 PAUL ROLLAND, M.Mus., Associate Professor of Music
 MORRIS HENRY SHEDD, B.S., Lieutenant Colonel, Army Air Force, Associate Professor of Military Science and Tactics
 JAMES HARLAN SHORES, Ph.D., Associate Professor of Education
 LESTER TOUBY KURTZ, Ph.D., Associate Professor of Soil Fertility
 WILLARD MUIR, B.S., Major, Signal Corps, Associate Professor of Military Science and Tactics
 GEORGE HERBERT ROCKWOOD, JR., M.S., Associate Professor of Electrical Engineering†
 EVERETT LINUS WELKER, Ph.D., Associate Professor of Mathematics
 ELWOOD J. DEMPSEY, A.B., Major, Army Air Force, Associate Professor of Military Science and Tactics
 LISLE ABBOTT ROSE, Ph.D., Editor of Engineering Publications, with the rank of Associate Professor†
 FRANZ RUSSELL STEINBACHER, M.S., Associate Professor of Aeronautical Engineering†
 ROBERT GEHLMANN BONE, Ph.D., Associate Professor of History and Director of the Division of General Studies
 PHILLIPS LEWIS GARMAN, A.M., Associate Professor of Labor and Industrial Relations†
 MILDRED IRENE HENRY, A.B., Reference Librarian, with the rank of Associate Professor, and Research Associate in Labor and Industrial Relations†

Assistant Professors

- CLARISSA RINAKER, Ph.D., Assistant Professor of English (on leave of absence second semester)
 HARRY LEVY, Ph.D., Assistant Professor of Mathematics
 DAISY LUANA BLAISDELL, A.M., Assistant Professor of German, *Emerita*
 LOUISE BURNHAM DUNBAR, Ph.D., Assistant Professor of History
 MARY FLORENCE LAWSON, M.S., Assistant Professor of Physical Education for Women
 IRVING LEONARD PETERSON, B.S., Assistant Professor of Landscape Architecture
 VIRGINIA HOYT WEAVER, A.M., Assistant Professor of Home Economics
 MRS. NELL C. B. JOHNSTON, A.M., Litt.D., Assistant Professor of Education
 EDWARD EZRA BAUER, M.S., C.E., Assistant Professor of Civil Engineering
 PAUL EMILE JACOB, Ph.D., Assistant Professor of French
 GEORGE WILLIAM REAGAN, Ph.D., Assistant Professor of Education

† Second semester.

CARITA M. ROBERTSON, A.M., Assistant Professor of Physical Education for Women
 MARIE MILLER HOSTETTER, B.L.S., A.M., Assistant Professor of Library Science
 RUTH KELSO, Ph.D., Assistant Professor of English
 HARTLEY D'OYLEY PRICE, Ph.D., Assistant Professor of Physical Education for Men
 HAROLD EUGENE KENNEY, M.S., Assistant Professor of Physical Education for Men
 DARL MERIDETH HALL, Ph.D., Assistant Professor of Agricultural Extension
 CHARLES CAREY CURTIS, J.D., A.M., Assistant Professor of Business Law
 LEROY RAYMOND HAMP, Assistant Professor of Music
 LAURA JEWEL HUELSTER, A.M., Assistant Professor of Physical Education for Women
 and Counselor on the University Council on Teacher Education
 JOHN PASCHAL MCCOLLUM, Ph.D., Assistant Professor of Vegetable Crops
 RICHARD LACEY McMUNN, M.S., Assistant Professor of Pomology
 HARRY CLIFFORD GEBHART, B.S., M.D., Assistant Professor of Hygiene and Medical
 Adviser for Men
 KARL ALBERT WINDESHEIM, Ph.D., Assistant Professor of Speech and Counselor on
 the University Council on Teacher Education
 HENRY WILBUR GILBERT, B.S., Assistant Professor of Landscape Gardening Extension
 VIRGINIA BARTOW, Ph.D., Assistant Professor of Chemistry
 DOROTHY ELIZABETH BOWEN, B.Mus., Assistant Professor of Music
 WALTER HERBERT BRUCKNER, A.B., Ch.E., Research Assistant Professor of Metal-
 lurgical Engineering
 CHALMERS WOODRUFF CRAWFORD, B.S., Assistant Professor of Horse Husbandry
 HAROLD MORTIMER EDWARDS, LL.B., Assistant Professor of Business Organization and
 Operation, and Purchasing Agent
 EDNA RUTH GRAY, A.B., B.S., Assistant Professor of Clothing Extension
 WILBER EUGENE HARNISH, A.M., Assistant Professor of Education and Head of the
 Department of Science in University High School
 MILFORD KEITH HUMBLE, Ph.D., Assistant Professor of Industrial Education (on leave
 of absence for war service)
 MIMI IDA JEHLE, Ph.D., Assistant Professor of German
 FLORENCE MARY KING, M.S., Assistant Professor of Home Economics (on leave of ab-
 sence first semester)
 LIESETTE JANE MCHARRY, A.M., Assistant Professor of Education and Head of the
 Department of English in University High School
 HERBERT PENZL, Ph.D., Assistant Professor of German
 ANNA WINIFRED SEARL, A.M., Assistant Professor of Home Economics Extension
 HALBERT HOUSTON THORNBERRY, Ph.D., Assistant Professor of Plant Pathology
 CAROLINE FRANCES TUPPER, Ph.D., Assistant Professor of English, *Emerita*
 GLADYS JOSEPHINE WARD, A.M., Assistant Professor of Home Management Extension
 LLOYD VINCENT SHERWOOD, Ph.D., Assistant Professor of Crop Production*
 JAMES DENTON HOGAN, A.B., Assistant Professor of Art
 JOHN WILLIAM KENNEDY, A.B., Assistant Professor of Art
 WILBUR MARSHALL LUCE, Ph.D., Assistant Professor of Zoology
 RUSSELL SCOTT STAUFFER, Ph.D., Assistant Professor of Soil Physics
 LOUISE MARIE WOODROOFE, B.P., Assistant Professor of Art
 ARCHIBALD WATSON ANDERSON, Ph.D., Assistant Professor of Education
 RAYMOND ELIOT, A.M., Assistant Professor of Physical Education for Men
 LESLIE WILLARD MCCLURE, M.S., Assistant Professor of Journalism
 JAMES HOWARD LAMBERT, Ph.D., Assistant Professor of Industrial Education
 LOYD EDWIN BOLEY, D.V.M., M.S., Assistant Professor of Clinical Veterinary Medicine
 GEORGE HARPER DELL, Ph.D., C.E., Assistant Professor of Civil Engineering
 ARTHUR C. FORSYTH, Ph.D., Assistant Professor of Metallurgical Engineering
 ELMER FRANKLIN HEATER, B.S., Research Assistant Professor in the Engineering
 Experiment Station
 VALENTINE JOBST, III, Ph.D., Assistant Professor of Political Science
 MRS. VELMA KITCHELL WILSON, B.Mus., A.M., Assistant Professor of Music Education
 and Counselor on the University Council on Teacher Education
 WALTER GINDER McALLISTER, Ph.D., Assistant Professor of Psychology
 CECIL A. MOYER, Ph.D., C.P.A., Assistant Professor of Accountancy
 ROSE BERNICE PHELPS, Ph.D., Assistant Professor of Library Science
 HAROLD A. SCHULTZ, A.M., Assistant Professor of Art Education
 OSWALD TIPPO, Ph.D., Assistant Professor of Botany

* Resigned.

- EDMUND FRANCIS TOH, M.S., Assistant Professor of Architecture
 MANSON BRUCE LINN, Ph.D., Assistant Professor of Plant Pathology
 FRED MITCHELL JONES, Ph.D., Assistant Professor of Business Organization and Operation
 MERTEN JOSEPH MANDEVILLE, Ph.D., Assistant Professor of Business Organization and Operation
 PAUL CARMEN ROBERTS, B.S., LL.B., Assistant Professor of Business Law
 GWLADYS SPENCER, Ph.D., Assistant Professor of Library Science
 ADDISON WILLIAM McLINTOCK, Captain, Field Artillery, Assistant Professor of Military Science and Tactics, and Adjutant*
 WILLIAM O. STANLEY, A.M., Assistant Professor of Education
 CURTIS WALTER DOLLINS, M.S., Special Research Assistant Professor of Engineering Materials
 JACOB GERALD CASH, M.S., Assistant Professor of Dairy Husbandry Extension
 JOSEPHINE HUGHES CHANLER, Ph.D., Assistant Professor of Mathematics
 WILLIAM NICHOLS FINDLEY, M.S., Assistant Professor of Theoretical and Applied Mechanics
 MILES C. HARTLEY, Ph.D., B.Mus., Assistant Professor of Education and Head of the Department of Mathematics in University High School
 JAMES EDWARD HULETT, JR., Ph.D., Assistant Professor of Sociology
 LESTER INGLE, Ph.D., Assistant Professor of Zoology
 BRUCE CONNOR JOHNSON, Ph.D., Assistant Professor of Animal Nutrition
 DONALD McEWEN JOHNSON, Ph.D., Assistant Professor of Psychology
 WALTER GILBERT JOHNSON, Ph.D., Assistant Professor of English
 OSKAR ALFRED KUBITZ, Ph.D., Assistant Professor of Philosophy and Assistant Dean of the College of Liberal Arts and Sciences
 GLENN CLINE LAW, M.S., Assistant Professor of Physical Education for Men
 WILLIAM EGBERT MORRELL, Ph.D., Assistant Professor of Chemistry
 ANDREW VLADIMIR NALBANDOV, Ph.D., Assistant Professor of Animal Physiology
 EARL HUBERT REGNIER, M.S., Assistant Professor of Rural Sociology Extension
 LESLIE FERRIS STICE, B.S., Assistant Professor of Agricultural Economics Extension
 ALFRED UHNO THOR, M.S., Assistant Professor of Agronomy Extension
 EDITH M. USRY, A.M., B.Mus., F.A.G.O., Assistant Professor of Music
 EARL REEVES WASSERMAN, Ph.D., Assistant Professor of English
 BRAYTON LADD WEAVER, M.S., Assistant Professor of Vegetable Crops
 ELMER NEWTON SEARLS, M.S., Assistant Professor of Agricultural Economics Extension*
 KEITH HARRY HINCHCLIFF, M.S., Assistant Professor of Agricultural Engineering Extension
 HALDANE WESLEY BEAN, M.S., Assistant Professor of Animal Husbandry, Assistant to the Dean of the College of Agriculture, and Assistant to the Director of the Agricultural Experiment Station
 IRWIN AUGUST BERG, Ph.D., Assistant Professor of Psychology
 CHARLES ACHILLE DIETEMANN, B.F.A., Assistant Professor of Art
 JOHN RICHARD FREY, Ph.D., Assistant Professor of German
 WILLIAM MICHAEL GILBERT, Ph.D., Assistant Professor of Psychology and Acting Director of the Student Personnel Bureau
 GEORGE NEVILLE JONES, Ph.D., Assistant Professor of Botany
 ROBERT PETER LARSEN, Ph.D., Assistant Professor of Psychology and Clinical Counselor in the Student Personnel Bureau (on leave of absence for the year)
 D. KATHARINE ROGERS, A.M., Assistant Professor of Social Welfare Administration
 HERBERT JUDSON RUCKER, M.S., Assistant Professor of Vocational Agriculture
 MANNING DAVID SEIL, M.S., Assistant Professor of Journalism
 MARY LUCILLE SHAY, Ph.D., Assistant Professor of History
 LEE ADRIAN SOMERS, M.S., Assistant Professor of Vegetable Gardening Extension
 AUBREY BRYANT TAYLOR, Ph.D., Assistant Professor of Physiology
 ROBERT JOHNSON WEBB, M.S., Assistant Professor of Agricultural Extension
 JOSEPH ORTAN ALBERTS, M.S., D.V.M., Assistant Professor of Veterinary Bacteriology
 MILO DON APPLEMAN, Ph.D., Assistant Professor of Soil Biology
 KING KELLOGG, Ph.D., Assistant Professor of Music
 ROBERT JORDAN CARNER, Ph.D., Assistant Professor of Spanish
 RALPH L. BOYD, Ph.D., C.P.A., Assistant Professor of Accountancy

* Resigned.

- KATHARINE MARTIN STOKES, A.M., Assistant Professor of Library Science and Circulation Librarian
- GAIL DAYTON ADAMS, JR., Ph.D., Research Assistant Professor of Physics
- ERICH ANDREW AHRENS, A.B., Assistant Professor of Sociology
- CHARLES MOORE ALLEN, M.S., Assistant Professor of Education and Principal of University High School
- HILDA JOSEPHINE ALSETH, A.B., B.L.S., Assistant Professor of Library Science and Engineering Librarian
- ESTHER WILLARD ANELL, A.B., B.L.S., Chief Serial Reviser in the Catalog Department of the Library, with the rank of Assistant Professor
- LYLE EDWARD BAMBER, M.S., Assistant Professor of Library Science and Natural History Librarian
- GRACE BECKETT, Ph.D., Assistant Professor of Economics
- LULU SUSAN BLACK, A.M., Assistant Professor of Home Economics Extension, in charge of Extension Studies and Training
- WINSTON EDWARD BLACK, M.S., C.E., Assistant Professor of Theoretical and Applied Mechanics
- DORIS JANE BROCKWAY, A.M., Assistant Professor of Home Economics
- EDWARD LOUIS BROGHAMER, M.S., M.E., Assistant Professor of Mechanical Engineering
- DILLON SIDNEY BROWN, Ph.D., Assistant Professor of Pomology*
- MARY GLADYS BURWASH, A.B., B.L.S., Assistant Professor of Library Science and Agriculture Librarian
- GARRETA HELEN BUSEY, Ph.D., Assistant Professor of English
- MILDRED RUTH CHAPIN, M.S., Assistant Professor of Home Economics and Counselor in the Student Personnel Bureau (on leave of absence for the year)
- CARLETON ABRAMSON CHAPMAN, Ph.D., Assistant Professor of Geology
- HERMAN BURLEIGH CHASE, Ph.D., Assistant Professor of Zoology
- ALDEN DENZEL CUTSHALL, Ph.D., Assistant Professor of Geography
- MRS. BERNITA JEWELL DAVIES, A.B., LL.B., B.S., Assistant Professor of Library Science and Law Librarian
- MAHLON MARSH DAY, Ph.D., Assistant Professor of Mathematics
- OTTO ALVIN DIETER, Ph.D., Assistant Professor of Speech (on leave of absence for the year)
- FANNY DUNLAP, Ph.B., B.L.S., Assistant Professor of Library Science and Reference Librarian
- EARL JOSEPH ECKEL, B.S., Assistant Professor of Metallurgical Engineering
- WALTER PHILLIPP ELHARDT, Ph.D., Assistant Professor of Physiology
- CHRISTOPHER URDAHL FAYE, A.M., M.S., Bibliographic Consultant and Cataloger in the Library, with the rank of Assistant Professor
- JOSEPH S. FLORES, Ph.D., Assistant Professor of Spanish
- ROBERT LOEFFLER FRANK, Ph.D., Assistant Professor of Chemistry
- MRS. RUTH CRAWFORD FREEMAN, M.S., Assistant Professor of Home Accounts
- OLIVER FREDERICK GAEBE, M.S., Assistant Professor of Agricultural 4-H Club Work
- SETH HAMMOND, Ph.D., Assistant Professor of Economics
- HARRY HARDENBROOK, JR., D.V.M., M.S., Assistant Professor of Clinical Veterinary Medicine
- GLENN PERCIVAL HASKELL, Ph.D., Assistant Professor of English
- JOHN THOMAS HASTINGS, Ph.D., Assistant Professor of Education, University Examiner in the Provost's Office, and Technical Director of the High School Testing Bureau
- FLOYD BALCH HAWORTH, Ph.D., Assistant Professor of Economics
- JESSIE ELLEN HEATHMAN, B.S., Assistant Professor of Home Economics Extension and Assistant Extension Editor
- MARION STANLEY HELM, M.S., Assistant Professor of Electrical Engineering
- HARRY WALLACE HORN, M.S., Assistant Professor of Electrical Engineering
- LEE S. HULTZÉN, Ph.D., Assistant Professor of Speech
- ALICE SARAH JOHNSON, A.B., B.L.S., Assistant Professor of Library Science and Reference Librarian
- PAUL GUY JONES, M.S., Assistant Professor of Theoretical and Applied Mechanics
- ROSS ANTHONY KELLY, M.S., Assistant Professor of Fruit and Vegetable Marketing
- GILBERT CLARENCE KETTELKAMP, Ph.D., Assistant Professor of Education and Head of the Department of Foreign Languages in University High School

* Resigned.

- HERMAN WILLIAM KOCH, Ph.D., Research Assistant Professor of Physics
 DONALD HEATHFIELD KRANS, M.S., Assistant Professor of Mechanical Engineering
 OTTO ERICH KUGLER, Ph.D., Assistant Professor of Zoology
 ALVIN FREDERICK KUHLMAN, M.S., Assistant Professor of Dairy Husbandry (on leave of absence for war service)
 NORMAN DION LEVINE, Ph.D., Assistant Professor of Veterinary Parasitology
 LORA DEAN LEWIS, B.S., M.D., Assistant Professor of Hygiene and Medical Adviser for Men
 CLEO LICHTENBERGER, B.S., B.L.S., Catalog Reviser in the Library, with the rank of Assistant Professor
 DRIVER BRADSHAW LINDSAY, M.S., Assistant Professor of Architecture
 MARY ALICE LOHRER, A.M., Assistant Professor of Library Science (on leave of absence for the year)
 GEORGE MANNER, Ph.D., Assistant Professor of Political Science
 ERNST GARLAND MATHEWS, Ph.D., Assistant Professor of English and Executive Secretary of the Committee on Student English
 JOSEPH LAWRENCE MCCONNELL, Ph.D., Assistant Professor of Economics
 MARY ANNETTE MCKEE, A.M., Assistant Professor of Home Economics 4-H Club Work
 CLIFFORD WILLIAM MENDEL, Ph.D., Assistant Professor of Mathematics
 JOHN CLEM MILES, M.S., M.E., Assistant Professor of Mechanical Engineering
 GERALD MAX MOSER, Ph.D., Assistant Professor of Spanish and Portuguese
 MIODRAG MUNTYAN, A.B., Editor in the University Press, with the rank of Assistant Professor
 RALPH JOSEPH MUTTI, Ph.D., Assistant Professor of Marketing
 FRANK HENRY MYNARD, B.S., Assistant Professor of Agricultural 4-H Club Work
 REVILO PENLETON OLIVER, Ph.D., Assistant Professor of the Classics and of Spanish and Italian (on leave of absence for the year)
 GEORGE ROLAND PEIRCE, M.S., Assistant Professor of Electrical Engineering
 HOWARD BLISS PETTY, JR., A.M., Assistant Professor of Entomology Extension
 STANLEY HOLT PIERCE, M.S., Assistant Professor of General Engineering Drawing and Assistant Dean of the College of Engineering
 WILLIAM FRANK PURNELL, B.S., Assistant Professor of Agronomy Extension
 EDWIN CARTER RAE, A.M., Assistant Professor of Art (on leave of absence for war service)
 FRANKLIN JACOB REISS, M.S., Assistant Professor of Farm Management
 BERNARD GORDON RICKETTS, M.S., Assistant Professor of Metallurgical Engineering
 ELEANOR MABEL ROBERTSON, A.B., B.L.S., Assistant Catalog Librarian, with the rank of Assistant Professor
 ANNA BELLE ROBINSON, A.M., Assistant Professor of Home Economics Education
 FRANK ELLSWORTH SCHOOLER, B.S., Assistant Professor of Journalism and Assistant Director of Public Information and of the Radio Station
 CHARLES HARLEN SHATTUCK, Ph.D., Assistant Professor of English
 JAMES ROSS SHIPLEY, B.F.A., B.S., Assistant Professor of Art
 CHESTER PAUL SIESS, M.S., Special Research Assistant Professor of Theoretical and Applied Mechanics
 JOHN BLACK SIRICH, Ph.D., Assistant Professor of History
 MRS. MARGARET SMALL MAINS, M.S., Assistant Professor of Physical Education for Women
 GEORGE WINSTON SMITH, Ph.D., Assistant Professor of History
 HELEN LOUISE SMITH, B.S., Editor in the University Press, with the rank of Assistant Professor
 JAMES OHREA SMITH, A.M., Assistant Professor of Theoretical and Applied Mechanics
 LEONARD LEO STEIMLEY, Ph.D., Assistant Professor of Mathematics
 MRS. HILDA ROSE STICE, A.B., Research Assistant Professor in the Bureau of Economic and Business Research
 ALFRED TATE, B.S., Assistant Professor of Agronomy Extension
 HENRY IRVING TEIGLER, B.S., M.D., Assistant Professor of Hygiene and Medical Adviser for Men
 WILLIAM EDGAR THOMAS, JR., Ph.D., Assistant Professor of Accountancy
 ATWELL RUFUS TURQUETTE, Ph.D., Assistant Professor of Philosophy
 FRANCES OLIVIA VAN DUYN, Ph.D., Assistant Professor of Foods
 HERBERT EDWARD VAUGHAN, Ph.D., Assistant Professor of Mathematics
 CARL SWENSSON VESTLING, Ph.D., Assistant Professor of Chemistry

- JAMES ROBERT WALKER, M.S., Assistant Professor of Agricultural Extension and Assistant Extension Editor
- JOHN NELSON WEISS, M.S., Assistant Professor of Agricultural Education
- JANET LOUISE WESTON, Ph.D., Assistant Professor of Economics and Counselor in the Student Personnel Bureau
- MRS. KATHERINE MCGRAW WHEELER, A.B., B.L.S., Catalog Reviser in the Library, with the rank of Assistant Professor
- RITTA WHITESEL, A.M., Assistant Professor of Home Economics
- GRACE ELIZABETH WILSON, M.Mus., Assistant Professor of Music
- HEIMIE EDWARD BREEN, M.S., Assistant Professor of Accountancy
- FRED CLOW FRANCIS, M.S., Assistant Professor of Animal Husbandry
- GUSTAV JACOB FROELICH, Ph.D., Assistant Director of the Bureau of Institutional Research, with the rank of Assistant Professor
- VERA MATILDA HANAWALT, Ph.D., Research Assistant Professor of Veterinary Physiology and Pharmacology
- MAY IRENE MILLBROOK, M.D., Assistant Professor of Hygiene and Medical Adviser for Women
- ROBERT BRESEE MONTGOMERY, B.S., M.D., Assistant Professor of Hygiene and Medical Adviser for Men
- MRS. JESSE BATLEY RHINEHART, Ph.D., Assistant Professor of Psychology
- MARJORIE MARGARET SMARZO, M.D., Assistant Professor of Hygiene and Medical Adviser for Women in charge of the Women's Division of the Health Service
- LESLIE CLARE WARREN, Ph.D., Assistant Professor of English
- DONALD RAY MARTIN, Ph.D., Assistant Professor of Chemistry
- FREDERICK DEAN MILES, B.S., Assistant Professor of Architecture
- MARGARET OLDFATHER, A.M., Serial Reviser in the Catalog Department of the Library, with the rank of Assistant Professor
- MULFORD QUICKERT SIRLEY, Ph.D., Assistant Professor of Political Science
- WILLIAM MARTIN SMITH, JR., Ph.D., Assistant Professor of Rural Youth Extension (on leave of absence second semester)
- ALFRED OLAF HANSON, Ph.D., Assistant Professor of Physics
- FRANK JOHN KENT, B.S., Captain, Infantry, Assistant Professor of Military Science and Tactics
- GERALD FREDERICK TAPE, Ph.D., Assistant Professor of Physics
- FREDERICK DEWEY BENNETT, Ph.D., Assistant Professor of Electrical Engineering
- THOMAS HAMLET COOPER, B.S., Captain, Field Artillery, Assistant Professor of Military Science and Tactics
- ROBERT IRVINE DICKEY, Ph.D., C.P.A., Assistant Professor of Accountancy and Assistant Dean of the College of Commerce and Business Administration
- LAWRENCE EDWARD DOYLE, B.S., Assistant Professor of Mechanical Engineering
- ARLO FRANKLIN JOHNSON, M.S., Assistant Professor of Aeronautical Engineering
- ALEXANDER COXE WILLIAMS, JR., Ph.D., Research Assistant Professor of Psychology
- ROGER PAUL LINK, D.V.M., M.S., Assistant Professor of Veterinary Physiology and Pharmacology
- ROBERT ADOLPH BECKER, Ph.D., Assistant Professor of Physics
- WALTER EDMUND HANSON, B.S., Assistant Professor of Civil Engineering
- ROBERT VICTOR MITCHELL, M.B.A., Assistant Professor of Business Organization and Operation
- WILLARD OMER NELSON, M.S., Assistant Professor of Dairy Bacteriology
- CHARLES MARSHALL WILSON, Ph.D., Assistant Professor of Bacteriology
- JAMES MARKHAM CARRITHERS, Ph.D., C.P.A., Assistant Professor of Accountancy
- KARL EDRIK GARDNER, Ph.D., Assistant Professor of Dairy Production
- BURTON ALVIERE MILLIGAN, Ph.D., Assistant Professor of English
- DANIEL JOSEPH MORRIS, Ph.D., Visiting Assistant Professor of Philosophy
- MILTON OTTO SCHMIDT, M.S., Assistant Professor of Civil Engineering
- LEO ALOYSIUS HELLMER, Ph.D., Assistant Professor of Psychology and Clinical Counselor in the Student Personnel Bureau
- MAXINE HARRIET KENNEDY, A.B., Editor in the Small Homes Council, with the rank of Assistant Professor
- ALFRED WILLIAM ALLEN, M.S., Assistant Professor of Ceramic Engineering
- WILLMER OLOF ALSTROM, M.S., Assistant Professor of Education and Teacher of Physical Education in University High School§

§ Deceased.

- ALBERT DAVID BAILEY, M.S., Assistant Professor of Electrical Engineering
 PAUL DONALD BEAMER, M.S., D.V.M., Assistant Professor of Veterinary Pathology and Hygiene
 DOROTHY MILLER BLACK, A.M., Associate Reference Librarian, with the rank of Assistant Professor
 OLIVER KENNETH BOWER, Ph.D., Assistant Professor of Mathematics
 GEORGE BERDINE BROWN, A.M., Assistant Acquisition Librarian, with the rank of Assistant Professor
 MARY LOIS BULL, A.M., Library Administrative Assistant, with the rank of Assistant Professor
 GEORGE BROMLEY CLARK, M.S., Assistant Professor of Mining Engineering
 DAVID HEROLD COLE, M.S., Assistant Professor of Mechanical Engineering
 RALPH STUART CROSSMAN, C.E., M.S., Assistant Professor of General Engineering Drawing
 HARRY GEORGE DRICKAMER, Ph.D., Assistant Professor of Chemical Engineering
 ROBERT LORING DRUMMOND, A.M., Assistant Professor of Art
 THOMAS NEWELL EWING, Ph.D., Assistant Professor of Psychology and Clinical Counselor in the Student Personnel Bureau
 DWIGHT PRESCOTT FLANDERS, Ph.D., Assistant Professor of Economics
 AURELIO EUGENE FLORIO, A.M., Assistant Professor of Physical Education for Men and Counselor on the University Council on Teacher Education
 CHARLES JOHN GAA, Ph.D., C.P.A., Assistant Professor of Accountancy
 CYRUS DALE GREFFE, B.S., Assistant Professor of Mechanical Engineering
 MRS. MABEL REA HAGAN, M.S., Assistant Professor of Business Organization and Operation and of Education, and Teacher of Commercial Subjects in University High School
 JOHN ADAMS HENRY, M.S., Assistant Professor of Mechanical Engineering
 VICTOR AUGUST HOERSCH, Ph.D., Assistant Professor of Mathematics
 RICHARD EMANUAL HULT, B.S., B.F.A., Assistant Professor of Art
 JOHN PAUL JONES, JR., A.M., Assistant Professor of Journalism and Assistant to the Director of the School of Journalism
 JAMES RICHARD KAMP, M.S., Assistant Professor of Floriculture
 BERNT OSCAR LARSON, B.S., Assistant Professor of General Engineering Drawing
 DAVID JOHNSTON LUCK, M.B.A., Assistant Professor of Business Organization and Operation, and Research Assistant Professor in the Bureau of Business and Economic Research
 EDWIN DEVERE LUKE, M.S., Assistant Professor of Mechanical Engineering
 MARVIN BLACKBURN MARTIN, Assistant Professor of Art
 HELEN LUCILE MCINTYRE, M.S., Consultant in Bibliography, with the rank of Assistant Professor
 WALTER ERNST MEYERHOF, Ph.D., Special Research Assistant Professor of Physics
 CULLEN BRYANT OWENS, Ph.D., Assistant Professor of Speech
 JOHN EDWIN PEARSON, M.S., Assistant Professor of General Engineering Drawing
 ECHO DOLORES PEPPER, Ph.D., Assistant Professor of Mathematics
 ANGELINA ROSALIA PIETRANGELI, Ph.D., Assistant Professor of French, Spanish, and Italian
 LOUIS ALEXANDER POTTER, JR., M.Mus., Assistant Professor of Music
 CLARK SHOVE ROBINSON, JR., Ph.D., Research Assistant Professor of Physics
 WALTER HENRY ROETTGER, B.S., Assistant Professor of Physical Education for Men
 PAUL FOWLER SCHWARZLOSE, M.S., Assistant Professor of Electrical Engineering
 FRANCIS SEYFARTH, M.S., Assistant Professor of Mechanical Engineering
 LELAND SHANOR, Ph.D., Assistant Professor of Botany
 HURST HUGH SHOEMAKER, Ph.D., Assistant Professor of Zoology
 HARRY SPECTOR, Ph.D., Assistant Professor of Animal Nutrition
 CHARLES JOSEPH STARR, B.S., Assistant Professor of Mechanical Engineering
 HENRI STEGEMEIER, Ph.D., Assistant Professor of German
 MRS. CELIA BURNS STENDLER, A.M., Assistant Professor of Education
 GEORGE VRYONIS, M.D., Assistant Professor of Hygiene and Medical Adviser for Men (on leave of absence for war service)
 NELSON DOWELL WAKEFIELD, M.S., C.P.A., Assistant Professor of Accountancy
 WILFRID WILSON, B.S., Dr.Math. et Phys., Assistant Professor of Mathematics
 JESSE NELSON YOUNG, B.S., LL.B., C.P.A., Assistant Professor of Law
 JOHN ROBERT CULBERT, M.S., Assistant Professor of Floriculture
 ELLIS DANNER, B.S., Assistant Professor of Civil Engineering

- HORATIO MAY FITCH, M.S., C.E., Assistant Professor of Theoretical and Applied Mechanics
- DAVID A. FRANK, JR., A.B., LL.B., Lieutenant Commander, U.S.N.R., Assistant Professor of Naval Science
- MARJORIE MABEL JOHNS, A.B., B.S., Assistant Professor of Library Science and University High School Librarian
- EDWARD LINZER, A.M., Assistant Professor of Social Welfare Administration
- ILSE LOWENSTAM, M.D., Assistant Professor of Hygiene and Medical Adviser for Women
- ROSS J. MARTIN, M.S., Assistant Professor of Mechanical Engineering
- DONALD WITT PADEN, Ph.D., Assistant Professor of Economics
- FREDERICK WILLIAM SALOGGA, B.S., Assistant Professor of Architecture
- JOSEPH HEATLY DULLES ALLEN, JR., Ph.D., Assistant Professor of Spanish and Portuguese
- GEORGE LLOYD BARTON, III, A.B., Captain, Infantry, Assistant Professor of Military Science and Tactics
- RICHARD SANFORD DEWEY, Ph.D., Visiting Assistant Professor of Sociology
- HENRY HOWARD DUNHAM, Ph.D., M.D., Assistant Professor of Hygiene and Medical Adviser for Men*
- HERBERT GOLDHOR, Ph.D., Assistant Professor of Library Science
- KENNETH E. HARSHBARGER, M.S., Assistant Professor of Dairy Production
- EUGENE FERDINAND HEBRANK, M.E., Assistant Professor of Mechanical Engineering
- DONALD FREDERICK HOFFMEISTER, Ph.D., Assistant Professor of Zoology and Assistant Curator of the Natural History Museum
- RALPH HARRY JOHNSON, M.S., Assistant Professor of Physical Education for Men, Counselor on the University Council on Teacher Education, and Counselor in the Student Personnel Bureau
- GERTRUDE EMMA KAISER, M.S., Assistant Professor of Home Economics Extension
- J. ROBERT KELLY, B.Mus., Assistant Professor of Music
- EMMETT EZEKIEL ORMISTON, M.S., Assistant Professor of Dairy Production
- HAROLD KENDLE POLK, B.S., Assistant Professor of Electrical Engineering
- EDWARD ANTHONY ROBINSON, A.M., Visiting Assistant Professor of the Classics
- CHALMERS WILLIAM SHERWIN, Ph.D., Assistant Professor of Physics
- CECIL DALE SMITH, B.S., Administrative Assistant in the College of Agriculture, with the rank of Assistant Professor
- CLAUDE PAUL VIENS, Ph.D., Assistant Professor of French
- RAY M. WAINWRIGHT, B.S., Assistant Professor of Electrical Engineering
- ARTHUR RICHARD WILLIAMS, M.Arch., Assistant Professor of Architecture
- JEROME EARL WILLIAMS, M.S., Assistant Professor of Electrical Engineering
- WILLIAM HAROLD WITT, M.S., Assistant Professor of Vocational Agriculture
- EDGAR GORDON BARRON, M.S., Assistant Professor of Theoretical and Applied Mechanics*
- WILLIAM ALDEN BURKE, Captain, Armored Cavalry, Assistant Professor of Military Science and Tactics
- STUART RUSSELL FOUTZ, A.B., Lieutenant Commander, U.S.N.R., Assistant Professor of Naval Science
- MRS. FLORENCE PATRICK GEBHART, B.S., M.D., Assistant Professor of Hygiene and Medical Adviser for Women
- RALPH MARLOWE LINE, B.Arch., Assistant Professor of Architecture
- LOUIS RICHARD BLOOM, M.S., Special Research Assistant Professor of Electrical Engineering
- WILBUR DAHL BUDDEMEIER, M.S., Assistant Professor of Agricultural Economics
- JOSEPH BERNARD FEHRENBACHER, M.S., Assistant Professor of Soil Physics and Soil Survey Research
- HOMER LEE GAMMILL, A.M., Assistant Professor of Industrial Psychology
- PHILLIP W. GARRIS, A.B., Captain, Army Air Force, Assistant Professor of Military Science and Tactics
- DANIEL FRANK HANG, B.S., Assistant Professor of Electrical Engineering
- LAWRENCE S. LOCKETT, B.S., Lieutenant Commander, U.S.N., Assistant Professor of Naval Science
- BEULA VERA McKEY, M.S., Assistant Professor of Home Economics
- BERNARD McLAUGHLIN, B.S., Lieutenant Commander, U.S.N., Assistant Professor of Naval Science

* Resigned.

WILLIAM DAVID MITCHELL, C.E., M.S., Assistant Professor of Theoretical and Applied Mechanics
 EDWARD FRANCIS DEMERS, B.S., Assistant Professor of Electrical Engineering
 WILLIAM WALTER HAY, B.S., Assistant Professor of Railway Civil Engineering
 WILLIAM ROBERT HORSFALL, Ph.D., Assistant Professor of Entomology
 ROBERT HENRY NAU, M.S., Assistant Professor of Electrical Engineering
 ROBERT DOUGLAS RAWCLIFFE, Ph.D., Assistant Professor of Physics
 PAUL TOWNSEND VEALE, B.S., Assistant Professor of Soil Survey
 JAMES ALOYSIUS GALLO, JR., A.B., First Lieutenant, U.S.M.C., Assistant Professor of Naval Science
 CLYDE GUY KNAPP, Ph.D., Assistant Professor of Education and Teacher of Physical Education in University High School‡
 MRS. MARY STANSIFER LIGON, M.S., Assistant Professor of Home Economics Extension
 RUSSELL TURNER ODELL, M.S., Assistant Professor of Soil Physics and Soil Survey Research
 HOBART MUIR SMITH, Ph.D., Assistant Professor of Zoology
 HADLEY READ, M.S., Assistant Professor of Agricultural Extension‡
 WILLIAM BUELL SCHAFFRATH, Ph.D., Assistant Professor of Labor and Industrial Relations

Associates

HARRY LOVERING GILL, Associate in Physical Education for Men, *Emeritus*
 BURRILL RUPERT HALL, Associate in Mechanical Engineering, *Emeritus*
 ROSALIE MARY PARR, Ph.D., Associate in Chemistry, *Emerita*
 EDWIN JOHN MANLEY, Associate in Physical Education for Men
 HERBERT HILL BRAUCHER, B.S., Associate in Industrial Education, *Emeritus*
 DAVID HENRY HOOVER, A.M., M.S., Th.D., Associate in Economics, *Emeritus*
 GEORGE R. BLACKSTONE, M.D., Associate in Hygiene, *Emeritus*
 REX LENOX BROWN, M.S., Associate in Theoretical and Applied Mechanics
 LEO THOMAS JOHNSON, A.B., Associate in Physical Education for Men
 MRS. GLENNA HENDERSON LAMKIN, M.S., Associate in Home Economics
 STELLA MARY HAGUE, Ph.D., Associate in Botany, *Emerita*
 HAROLD CAMERON PATERSON, B.S., Associate in Physical Education for Men
 WILLIAM H. YOUNG, Associate in Agricultural College Extension, *Emeritus*
 KATHRYN JANIE SUTHERLIN, A.B., Associate in Music (on leave of absence)
 MELANCTHON HERBERT ALEXANDER, M.S., Associate in Dairy Husbandry
 MADELYN WOMACK, Ph.D., Special Research Associate in Chemistry
 WOLFGANG KUHN, M.S., Associate in Music Education
 SHERMAN GRANT MENEFE, Ph.D., Associate in Dairy Chemistry (on leave of absence)
 JOHN HUBERT RAMSER, B.S., Associate in Agricultural Engineering
 ENID SCHNAUBER, M.S., Associate in Physical Education for Women
 NATALIA MAREE BELTING, Ph.D., Associate in History
 EMMA REED JUTTON, B.L.S., Associate in Library Science and Circulation Librarian, *Emerita*
 KENTON AUGUSTUS KENDALL, M.S., Associate in Dairy Production
 AMEDA RUTH KING, Ph.D., Associate in History
 NELSON JORDAN LEONARD, Ph.D., Associate in Chemistry
 FOIL ALLAN MILLER, Ph.D., Associate in Chemistry
 CLYDE MONROE HOBART, A.M., M.S., Associate in Mathematics
 MRS. JESSIE HOWARD, M.S., Research Associate in the Provost's Office
 NORMAN GEORGE BITTERMANN, M.S., Research Associate in the Bureau of Economic and Business Research
 DAVID HERBERT DONALD, Ph.D., Research Associate in History

Lecturers

ALBERT EDWARD CUMMINGS, B.S., C.E., Lecturer in Foundation Engineering
 WILLIAM HOMER WISELY, B.S., C.E., Lecturer in Sanitary Engineering
 RICHARD LEOS JENKINS, A.B., M.D., Lecturer in Social Welfare Administration
 FRANK A. JENSEN, Ph.D., Nonresident Lecturer in Education§
 FRANK ALFRED RANDALL, B.S., C.E., Special Lecturer in Structural Engineering
 KARL TERZAGHI, Dr.Ing., Lecturer and Research Consultant in Civil Engineering
 ROBERT BRENT AYRES, B.S., Visiting Lecturer in Economics
 BETTY LYLE, M.S., Lecturer in Social Welfare Administration†
 HERBERT LEROY WHITE, B.S., C.E., Lecturer in Sanitary Engineering

† First semester.

‡ Second semester.

§ Deceased.

Instructors

AMOS DAVID WRIGHT, Instructor in Mechanical Engineering
 STELLA REBECCA PERCIVAL, B.Mus., Instructor in Music
 MARGARET BLOOM, Ph.D., Instructor in English
 CORNELIA PULSIFER KELLEY, Ph.D., Instructor in English
 MARGARET FRENCH, Ph.D., Instructor in English
 GEORGE CHARLES WICKWIRE, M.S., Instructor in Physiology
 JOHN WALLACE RAUSHENBERGER, B.F.A., Instructor in Art
 HOWARD JOHN BRAUN, M.S., Instructor in Physical Education for Men
 RALPH EMERSON FLETCHER, B.S., Instructor in Physical Education for Men
 MRS. ESTHER H. RAPP, Ph.D., Instructor in English
 NICHOLAS BRITSKY, B.F.A., Instructor in Art
 CLYDE WINFIELD WILKINSON, A.M., Instructor in English
 JOHN ALEXANDER FUZAK, Ed.M., Instructor in Industrial Education
 ROBERT JOHN GEIST, Ph.D., Instructor in English
 HELEN KATHERYN ZWOLANEK, A.M., Instructor in Home Economics
 WENDELL EARL MILLER, M.S., Instructor in Electrical Engineering
 ALLEN BARCLAY KLINGEL, M.S., Instructor in Physical Education for Men
 JOHN JOSEPH SHEURING, M.S., Instructor in Dairy Manufactures
 ALLAN GIBSON HOLADAY, Ph.D., Instructor in English
 HUGH WILLIAMS SARGENT, A.M., Instructor in Business English
 M. ROSS ANDERSON, M.S., Instructor in Physical Education for Men
 CHARLES CLIFTON DELONG, M.S., Instructor in Accountancy and Bursar
 NANCY EVANS HOUSTON, B.S., Instructor in Physical Education for Women and
 Counselor on the University Council on Teacher Education
 MRS. LUCRETIA SWITSER LEVY, A.M., Instructor in Mathematics
 ROBERT HAMILTON MOORE, A.M., Instructor in English
 JOSEPH ALLEN, A.M., B.S., Instructor in Music and Music Librarian
 THEODORE BEDRICK, Ph.D., Instructor in the Classics
 MARIE KATHRYN HOCHMUTH, Ph.D., Instructor in Speech
 VIRGINIA STEELE CHAMBERLIN, M.S., Instructor in Physical Education for Women
 RUTH THELMA KROUSE, M.S., Instructor in Physiology
 MRS. ALBERTINE WALTHER OSGOOD, A.M., Instructor in Spanish
 JOHN KERKER QUINN, A.M., Instructor in English
 NELLE MARIE SIGNOR, A.B., B.L.S., Instructor in Library Science, and History and
 Political Science Librarian (on leave of absence beginning January 1, 1947)
 GEORGE CASS DELONG, A.M., Instructor in Geography
 EARL GRAHAM POGUE, A.M., Instructor in Education and Assistant Director of Student
 Teaching
 MARIAN CATHERINE QUINN, A.M., Instructor in Speech and Supervisor of the Deaf and
 Hard of Hearing
 JOSEPH RUSSELL REAVER, JR., Ph.D., Instructor in English
 WARD HASTINGS TAYLOR, Ph.D., Instructor in Mathematics
 NICOLA V. ZIROLI, (Art Institute of Chicago), Instructor in Art
 JERRY STANLEY DOBROVOLNY, B.S., Instructor in General Engineering Drawing
 CHARLES HARLOW PRATT, A.B., Instructor in Business Organization and Operation and
 Chief Accountant in the Business Office
 WALTER KARL HEINRICH GIESEKE, A.M., Instructor in German
 MRS. AVIS AULD BALL, A.B., B.S., Assistant Binding Librarian, with the rank of
 Instructor
 PATRICIA IRENE BARON, B.S., Instructor in Physical Education for Women
 EDMOND HAROLD BENNETT, M.S., Instructor in Biology
 EVA FAYE BENTON, A.M., M.S., English Librarian, with the rank of Instructor
 ANNE BETTS, A.M., Instructor in Physical Education for Women
 ELEANOR BLUM, M.S., Freshman Reading Room Librarian, with the rank of Instructor
 ALICE LOUISE BOYD, A.M., B.S., Cataloger in the Library, with the rank of Instructor
 REBECCA BRIGGS, A.M., Serial Cataloger in the Library, with the rank of Instructor
 JANET GERTRUDE BULLEN, M.S., Cataloger in the Library, with the rank of Instructor
 MAYME JOSEPHINE BUNCH, Ph.D., Instructor in History
 GEORGIA ROSE COFFIN, A.B., B.S., Bibliographer in the Acquisition Department of the
 Library, with the rank of Instructor

- MAURINE COLLINS, A.M., Exchange Reviser in the Acquisition Department of the Library, with the rank of Instructor
- CHESTER EDWARD DERROUGH, Instructor in Mechanical Engineering
- LOIS MARGARET DI SANTO, A.B., B.S., Documents Assistant in the Acquisition Department of the Library, with the rank of Instructor
- DONNA DOROTHY FINGER, A.M., Instructor in Library Science and Library School Librarian
- SYLVIA CORAL GILMORE, M.S., Browsing Room Librarian, with the rank of Instructor
- ISABELLE FITCH GRANT, A.M., Rare Book Room Librarian, with the rank of Instructor
- FLORENCE MARIE HARDING, A.M., Germanic and Romance Languages Librarian, with the rank of Instructor
- MARIAN HARMAN, Ph.D., Cataloger in the Library, with the rank of Instructor
- CORINNE HATTAN, Ph.D., Instructor in Mathematics
- DOROTHY ELIZABETH HEICKE, A.M., Serial Cataloger in the Library, with the rank of Instructor*
- VYNCE ALBERT HINES, M.S., Instructor in Education and Teacher of Mathematics in University High School
- ADRIAN WILLIAM JANES, A.B., Assistant Editor in the Agricultural Experiment Station, with the rank of Instructor
- EDITH CARRINGTON JONES, Ph.D., Cataloger and Classics Librarian, with the rank of Instructor
- LUCY VERA KEPLER, A.M., Periodical Librarian in the Acquisition Department of the Library, with the rank of Instructor
- DARRELL ELLSWORTH LATHAM, M.S., Instructor in Physical Education for Men
- CLARISSA OLIVIA LEWIS, A.M., Cataloger in the Library, with the rank of Instructor
- LESTER BERNARD LUBORSKY, Ph.D., Instructor in Psychology
- ANNE VERA MARINELLI, A.B., B.S., Bibliographer in the Acquisition Department of the Library, with the rank of Instructor
- EDITH MAY MARSHALL, A.M., B.S., Cataloger in the Library, with the rank of Instructor
- CECELIA MARY MCCARTHY, A.M., Extension Loans Librarian, with the rank of Instructor
- MARSHALL EVANS MUNROE, Ph.D., Instructor in Mathematics
- MRS. EVALYN REICH NELSON, A.M., Education, Philosophy, and Psychology Librarian, with the rank of Instructor
- MRS. THEO BRONHOLM NELSON, A.B., B.S., Reserve Book Room Librarian, with the rank of Instructor
- FINA CAROL OTT, A.M., B.S., Commerce and Sociology Librarian, with the rank of Instructor
- MRS. ELIZABETH WRIGHT POWELL, B.S., Instructor in Home Economics*
- KATHLEEN MARGARET RUCKMAN, A.M., Gift and Exchange Librarian in the Acquisition Department of the Library, with the rank of Instructor
- CERILIA ELIZABETH SAYLOR, M.S., Architecture Librarian, with the rank of Instructor
- META MARIA SEXTON, A.M., B.L.S., Cataloger in the Library, with the rank of Instructor
- ELEANOR SHOCKEY, M.S., Instructor in Music
- MORSE BERYL SINGER, Instructor in Mechanical Engineering
- MAY SMITH, M.S., Serial Cataloger in the Library, with the rank of Instructor
- HELEN TREAT STEWART, A.M., Assistant Circulation Librarian, with the rank of Instructor
- JOHN SUNAPEE STUBBE, Ph.D., Instructor in Mathematics
- ELVIN SCHUYLER WARRICK, A.M., Mathematics Librarian, with the rank of Instructor
- HELEN MARGARET WELCH, A.M., B.S., Bibliographer in the Acquisition Department of the Library, with the rank of Instructor
- THELMA ELIZABETH WILLETT, M.Mus., Instructor in Music
- WALTER SCOTT ADAMS, M.S., Instructor in Economics
- BETH BRADLEY, M.Mus., Instructor in Music
- MRS. RUBY LEES HOLADAY, Ph.D., Instructor in French
- PHILIP KOLB, Ph.D., Instructor in French
- MARGARET PLOWMAN MCGLOTHLIN, A.M., Assistant Editor in the Agricultural Experiment Station, with the rank of Instructor

* Resigned.

MRS. MARIAN RICHARDS MEINKOTH, A.M., Instructor in Economics
 LLOYD JAMES PHIPPS, M.S., Instructor in Agricultural Education
 ERNEST ALLEN PROPES, A.M., Instructor in Mathematics
 JOHN TARWAIN, M.S., Instructor in Physical Education for Men*
 KATHERINE WHITE WHITTLE, A.B., B.S., Reference Assistant in the Library, with the rank of Instructor
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 JOHN ALLEN HAMILTON, A.M., Instructor in English
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 WARREN IRVIN MITCHELL, B.S., Instructor in Theoretical and Applied Mechanics
 NUGENT WEDDING, M.S., Instructor in Business Organization and Operation
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 MARIAN KELLERAN HARRIS, A.M., Instructor in Art
 JOHN DONALD MORRISON, M.Mus., A.A.G.O., Instructor in Music
 LAWRENCE WILBUR OLSON, A.M., Instructor in Speech
 JOSEPHINE MATHEWS THARPE, A.M., Assistant Reference Librarian, with the rank of Instructor
 MRS. ELAINE SNYDER LAMPSON, B.S., Chemistry Librarian, with the rank of Instructor
 ALAN ELMER ROY WEBER, B.S., Instructor in Mechanical Engineering
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 WILLIAM GROVE MURPHY, B.S., Instructor in Theoretical and Applied Mechanics
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 BURTON A. INGWERSEN, B.S., Instructor in Physical Education for Men

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- ARCHIE EUGENE MATHIS, B.S., Instructor in Physical Education for Men‡
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- LEONARD EDWARD MILLER, Ph.D., Instructor in Chemistry
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- JOHN MAYHEW PARKER, B.S., Instructor in Forestry
- MRS. SUE WORSLEY RAMSEY, A.B., B.S., Illini Union Browsing Room Librarian, with the rank of Instructor
- HELEN MARGARET REYNOLDS, M.S., Architecture Library Assistant, with the rank of Instructor
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- JEWELL EMMA SCHUBERT, Ph.D., Instructor in Mathematics
- EDWARD JOSEPH SCOTT, Ph.D., Instructor in Mathematics
- WAYNE LAMBERT SHICK, B.S., Instructor in General Engineering Drawing
- MRS. MARY ARNTZEN VANCE, M.S., Circulation Assistant in the Library, with the rank of Instructor
- FRANCIS WILLIAM WEEKS, A.M., Instructor in Business English
- GRACE WILSON, M.S., Instructor in General Engineering Drawing
- GLEN GIVENS YANKEE, A.M., Instructor in Accountancy
- JAMES WILMER BAYNE, B.S., Instructor in Mechanical Engineering
- LEON STANLEY CIERESZKO, Ph.D., Instructor in Chemistry
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- DONALD ALEXANDER GORDON, Ph.D., Instructor in Psychology
- LUCILLA JANE HALL, A.M., Instructor in Speech
- LYLE RICH HUFF, M.S., Instructor in Accountancy
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- ROBERT WILLIAM JANES, Ph.D., Instructor in Sociology
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- JOSEPH LANDIN, Ph.D., Instructor in Mathematics
- JAMES HENRY GRAHAM LYNCH, B.F.A., Instructor in Art
- PATRICIA ANNE McILRATH, A.M., Instructor in Speech
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- CLARENCE SIMEON ANGELL, A.M., Instructor in Speech
- ELIZABETH RUTH BANTZ, B.S., Cataloger in the Library, with the rank of Instructor
- PHILIP ANDREW BAUMAN, M.S., Instructor in Electrical Engineering
- ELSIE GERTRUDE BILLMAN, Ph.D., Instructor in German
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- ROBERT P. BORRI, Ed.D., Instructor in General Engineering Drawing
- JANE LOUISE BRAND, A.B., Reference Assistant in the Library, with the rank of Instructor
- NANCY ELAINE BURHAM, A.B., B.S., Administrative Assistant and Instructor in Library Science
- MILTON HAROLD CROTHERS, B.S., Instructor in Elcctrical Engineering
- EDWARD DARWIN EBERT, B.S., Instructor in General Engineering Drawing
- PAUL RAYMOND EGBERT, B.S., Instructor in Electrical Engineering
- ROBERT STRATMAN ELLIOTT, A.B., B.S., Instructor in Electrical Engineering

* Resigned. ‡ Deceased.

ROBERT BLANCHARD FISCHER, Ph.D., Instructor and Research Assistant in Chemistry
 MARY GRANT, A.M., Instructor in Geography
 ANGELENE DAGMAR HELLEBERG, M.S., Instructor in Home Economics
 FRANK J. HOLMES, Ph.D., Instructor in Psychology
 MRS. RENÉE TOOLE KAHANE, Ph.D., Instructor in Spanish
 HAROLD WILLIAM KATZ, B.E.E., Instructor in Electrical Engineering
 FRANCIS DUPONT LAZENBY, Ph.D., Instructor in the Classics
 THEODORE JOSEPH LITTLE, A.M., J.D., Instructor in Speech
 LOUISE FINLEY LODGE, Ph.D., Cataloger in the Library, with the rank of Instructor
 MRS. WILMA TONN LOHMEYER, B.S., Instructor in Home Economics
 CLARENCE HARVEY McCLAY, B.S., Instructor in Mechanical Engineering
 ROBERT ABBOTT McNAMARA, Jr., Instructor in Mechanical Engineering
 CLARENCE BURLEIGH MONK, Jr., B.S., Instructor in Theoretical and Applied Mechanics
 ALLEN IVES ORMSBEE, B.S., Instructor in Civil Engineering
 MRS. ELAINE PAGEL PADEN, Ph.D., Instructor in Speech
 ARTHUR JON PULOS, M.F.A., Instructor in Art
 RICHARD EVERETT REEVES, B.S., Instructor in General Engineering Drawing
 GERARD JERRY RUBIN, B.S., D.V.M., Instructor in Veterinary Extension
 BERNICE SCHRADER, A.M., Instructor in the Institute of Aeronautics
 HARRY JOSEPH SHEFFIELD, Jr., A.B., Instructor in the Institute of Aeronautics
 MRS. MARIE ORR SHERE, A.M., Instructor in Speech and Supervisor of Organic and
 Articulatory Disorders
 GEORGE WILLIAM SMITH, Jr., B.F.A., Instructor in Art§
 JANE STURTEVANT, A.B., B.S., Natural History Library Assistant, with the rank of In-
 structor
 MARGERY ELIZABETH SUHRE, A.M., Assistant Editor in the Extension Service in Agri-
 culture and Home Economics, with the rank of Instructor
 MARY ALTA SULLIVAN, B.Ed., Instructor in Business Organization and Operation and
 Teacher of Commercial Subjects in University High School
 MRS. BEULAH WISHART SWENGEL, A.M., Instructor in Speech and Supervisor of Chil-
 dren's Speech Disorders
 CLAUDE CUTTER THERRIEN, B.Ed., Instructor in General Engineering Drawing
 WILLIAM NEIL THOMPSON, M.S., Instructor in Farm Management
 JAMES BARTON WALLACE, B.F.A., Instructor in Architecture
 RAYMOND ELLSWORTH WATTS, D.V.M., Instructor in Veterinary Pathology and Hygiene
 MRS. RUBY VITZTHUM WISPE, A.M., Instructor in Speech
 MRS. ESTHER MAE WITCHER, A.B., B.L.S., Bibliographer in the Acquisition Department
 of the Library, with the rank of Instructor
 MARK M. WOYSKI, Ph.D., Instructor in Chemistry
 MEHMET SAKIP ALTAY, M.S., Instructor in Architecture
 JOSEPH MERTON BARROW, B.S., Instructor in Architecture
 ROBERT WALTER BOHL, B.S., Instructor in Mining and Metallurgical Engineering
 FRANK LAWRENCE BROWN, B.S., D.V.M., Instructor in Veterinary Extension
 KATHRYN GERTRUDE HANSEN, M.S., Instructor in Psychology
 MARTHA HELENE HEATON, A.M., Instructor in Psychology
 VIRGINIA LEE HORNE, M.S., Instructor in Physical Education for Women
 JAMES LINDSAY LEACH, B.S., Instructor in Mechanical Engineering
 AUSTIN JOHNSTON McDOWELL, M.Mus., Instructor in Music and in Military Bands
 MRS. LYLE SCHWABE MCKINNEY, A.M., Instructor in Speech
 MRS. LUCILE WOODARD MCKIRAHAN, B.S., Instructor in Architecture*
 VIVIAN ROSE NUSS, A.M., Instructor in Mathematics
 WILLIAM BEAUREGARD WEST, B.S., Lieutenant (SG), U.S.N., Instructor in Naval Science
 MRS. ALBERTA SCHUETTLER CATTELL, A.M., Instructor in Mathematics
 MAX RICHARD MATTESON, Ph.D., Instructor in Zoology
 DONALD BRYANT PARDUE, B.S., Instructor in the Institute of Aeronautics
 MRS. FRANCES FRANYA SOBOTKA, Instructor in Russian
 HOWARD FREDERIC STETTLER, M.S., C.P.A., Instructor in Economics
 MRS. GERTRUDE BROWN WORKING, Ph.D., Instructor in Economics†
 JACK SHERMAN BAKER, B.S., Instructor in Architecture
 VIRGINIA RUTH CHARLES, A.B., Instructor in Home Economics
 VERNON RAY FRYBURGER, Jr., B.S., Instructor in Journalism

* Resigned. † First semester. § Deceased.

GWENDOLYN LLOYD, A.M., Instructor in Library Science and Acting History and Political Science Librarian
 CLINTON PAUL ATKINS, M.S., Instructor in Civil Engineering‡
 MELVIN WHEELER JACKSON, M.S., Instructor in Theoretical and Applied Mechanics
 GORDON ALBERT PHILLIPS, B.S., Instructor in Architecture
 ALLEN VICTOR HEIMBACH SAPORA, M.S., Instructor in Physical Education for Men
 WILLIAM GRAYDON ALBRIGHT, M.S., Instructor in Electrical Engineering
 ROYCE ELLIOTT BECKETT, B.S., Instructor in Mechanical Engineering
 EDWARD ALAN BLOOM, Ph.D., Instructor in English‡
 DEAN CLARENCE BROUGHTON, B.S., Instructor in Theoretical and Applied Mechanics
 KENNETH BURNS, A.M., Instructor in Speech
 MORRIS CARTER, M.Mus., Instructor in Music
 HAROLD EUGENE ECKHOFF, M.S., Instructor in Civil Engineering
 WILLIAM FERDINAND EKSTROM, Ph.D., Instructor in English
 CLAUDE WINSTON FAULKNER, Ph.D., Instructor in English
 JOHN MILFRED GOUDEAU, A.B., B.S., Bibliographer in the Acquisition Department of the Library, with the rank of Instructor‡
 PHILIP B. HENDERSON, B.S., Instructor in the Institute of Aeronautics‡
 WILLIAM JOHN MEID, B.S., Instructor in Ceramic Engineering‡
 MALCOLM HOWARD ROBERTS, B.S., Instructor in Chemistry‡
 ROSS PRESSLEY STROUT, B.S., Instructor in Mechanical Engineering‡
 ROBERT LOUIS TALMADGE, A.B., B.S., Cataloger in the Library, with the rank of Instructor
 NITA LELAND WILLITS, A.M., Instructor in German
 FREDERICK ROBERT WUNDER, B.S., Instructor in Mechanical Engineering‡
 JAMES EDDY PRIER, D.V.M., Instructor in Veterinary Extension‡
 JOHN FREDERICK RUNDQUIST, B.S., Instructor in Crop Production
 JAMES WILLIAM SCHRODT, B.Mus., Instructor in Music‡
 CLARENCE JAMES WOOD, B.S., Instructor in General Engineering Drawing

Assistants

RICHARD ROCKWOOD ABBOTT, B.S., Assistant in Physical Education for Men‡
 WILLIAM THOMAS ABEL, A.B., Assistant in Chemistry*
 BETTY JANE ACKERSON, A.B., Assistant in Chemistry
 ROBERT MCLEAN ADAMS, M.S., Assistant in Chemistry
 WILLIAM WALL ADAMS, A.M., Assistant in Speech
 PAUL HARWOOD ALDRICH, A.B., Assistant in Chemistry
 MRS. ELIZABETH KRUSKAL ALLEN, A.B., Assistant in Spanish
 ROBERT WILLARD ALRUTZ, B.S., Assistant in Zoology
 ROBERT ALLEN ALTENBERN, B.S., Assistant in Bacteriology
 JOHN ALFRED AMES, A.B., Assistant in Geology
 ARNOLD HENRY ANDEREGG, A.B., Assistant in Chemistry
 DANIEL CLARK ANDERSON, A.B., Assistant in Economics
 HUGH VERITY ANDERSON, A.B., Assistant in Chemistry
 MRS. JEANETTE S. ANDERSON, A.B., Assistant in English
 MARGARET L. ANDERSON, A.M., Assistant in Spanish
 ROBERT TODD ANDERSON, A.M., Assistant in Physics
 PETER GEORGE ARVAN, A.M., Special Research Assistant in Chemistry
 ANTHONY HOWARD ASAY, B.S., Assistant in Accountancy
 ANDREW LEE ATKINS, JR., A.B., B.S., Assistant in Physics
 DONALD WAYNE ATKINSON, A.B., Assistant in Physics*
 EARL AUERBACH, B.S., Assistant in Zoology‡
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 HERBERT REEDER BAILEY, B.S., Assistant in Electrical Engineering
 FRANK WILLOUGHBY BAINBRIDGE, II, A.M., Assistant in Education
 S. JOAN BALDWIN, B.S., Assistant in Chemistry
 JAMES ANTON BALEY, B.S., Assistant in Physical Education for Men
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 HARLAN DANIEL BAREITHNER, B.S., Assistant in Mechanical Engineering‡

* Resigned. ‡ Second semester.

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ERIC BARTHEL, JR., B.S., Assistant in Chemistry
ROBERT VAN AKIN BAUER, A.M., Assistant in English
EDWARD ROBERT BAUMANN, B.S., Assistant in Civil Engineering
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FREDERICK NEIL BAUMGARTNER, A.B., Assistant in Chemistry
JAMES HENRY BECHTOLD, B.S., Assistant in Metallurgical Engineering
MRS. ANN BECK, M.S., A.M., Research Assistant in History
DONALD EUGENE BECKER, M.S., Assistant in Swine Husbandry
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KENNETH BERNARD BERG, M.S., Assistant in Accountancy
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‡ Second semester.

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 JEROME ENGEL BROWN, B.S., Assistant in Chemistry
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 MRS. LUCILLE WERNICK BROWN, A.B., Research Assistant in the Institute of Labor and Industrial Relations‡
 RICHARD LEE BRUMMET, B.Ed., Assistant in Accountancy
 IDA BLANCHE BRUNER, M.S., Assistant in Home Economics
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 WARREN LOUIS BUCK, B.S., Assistant in Physics
 WILLIAM EARL BUCKLER, A.M., Assistant in English
 MRS. MILDRED JOSEPHINE BUCKLEY, B.S., Assistant in Mathematics
 THOMAS FRANCIS BUCKLEY, B.S., Assistant in Physical Education for Men
 RAY BUDDE, B.S., Assistant in Business Organization and Operation
 HARRY ROLLAND BUELL, B.S., Assistant in Electrical Engineering
 WILBUR LEWIS BULLOCK, M.S., Assistant in Zoology
 LORENZO WORTH BURDETT, B.S., Assistant in Chemistry
 ROBERT JAMES BURKE, B.S., Assistant in Physics
 RUTH-HELEN BURLISON, M.S., Assistant in Music Education
 MARVIN HAROLD BUTLER, A.B., Assistant in Economics
 WILLIAM ALBERT BUTLER, A.B., Assistant in Physics
 EDWARD WILLIS BUTTGEN, Ph.B., Assistant in Business English
 MIRIAM VIRGINIA BUZZELL, A.B., Assistant in English
 JAMES ALLEN BYERLY, B.S., Assistant in Chemistry
 LAWRENCE WALLACE BYERS, A.M., Special Research Assistant in Chemistry
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 MRS. LOUISE MEHLER CALDWELL, B.Ed., Assistant in English
 CLAYTON FOWLER CALLIS, M.S., Special Research Assistant in Chemistry
 GEORGE CARR CAMP, A.M., Assistant in English and Counselor in the Student Personnel Bureau
 SAM JOSEPH CANNARIATO, B.S., Assistant in Business Law
 JEANNETTE ELAINE CARLSON, A.M., Assistant in English
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 JOHN RAYMOND CARROLL, JR., B.S., Assistant in Mechanical Engineering
 SUSAN LOUISE CARTWRIGHT, A.B., Research Assistant in Zoology
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 LOUIS CHANDLER, B.S., Assistant in Physics
 RICHARD ALEXANDER CHAPMAN, B.S., Assistant in Botany
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 WILLIAM CLARENCE CLARK, Ph.B., Ph.G., Ph.C., B.S., Research Assistant in Physiology
 JOHN OTIS CLAY, A.B., Assistant in Geology
 MRS. VIRGINIA KUEMMEL CLUTTER, A.B., Assistant in Spanish
 THOMAS CLINTON COBB, B.S., Assistant in Economics
 HORACE HUNTER COBURN, M.S., Assistant in Physics
 MARIUS COHN, M.S., Assistant in Physics

† First semester.

‡ Second semester.

JAMES NEWTON COKER, B.S., Research Assistant in Chemistry‡
 DANA FRANCIS COLBERT, B.S., Assistant in Accountancy
 PHILIP EDWARD COLDWELL, A.B., Assistant in Economics
 RICHARD COLE, B.Ch.E., Assistant in Chemistry‡
 RICHARD LOUIS CONKLIN, B.S., Assistant in Physics
 ROBERT ARMINÉ CONOVER, M.S., Assistant in Botany
 EDWARD HUBERT CONROY, JR., B.S., Special Research Assistant in Chemistry
 JEAN COON, A.M., Assistant in English
 MINOR JESSER COON, Ph.D., Special Research Assistant in Chemistry
 MARGARET COONEY, A.B., Assistant in Chemistry
 FERN JEANNETTE CORNELISON, A.M., Assistant in English
 FRANCES BERNICE COTTRELL, M.S., Assistant in Botany
 CHARLES DONALD COX, M.S., Assistant in Bacteriology
 RUTH IRENE COX, A.B., B.S., Assistant in Library Science
 ALLAN MARTIN CRESS, A.B., Assistant in German
 JACK WESLEY CRIST, B.S., Assistant in Art
 ALDEN LARUE CRITTENDEN, B.S., Assistant in Chemistry
 JANET LOIS CROSBY, B.S., Special Research Assistant in Chemistry
 LESTER IRVIN CULP, B.S., Assistant in Agricultural Economics
 CYRIL DEAN CURTIS, B.S., Assistant in Physics
 CHARLES STEELMAN DANNER, B.S., Assistant in Civil Engineering
 WILLIAM THOMPSON DAVIS, B.S., Assistant in Accountancy
 ELIZABETH BROWN DEANE, M.S., Assistant in Bacteriology
 MRS. GRACE GREIF DEANIN, A.M., Research Assistant in Physiology
 EDWARD HERBERT DEBUTTS, JR., B.S., Assistant in Chemistry*
 KENNETH BLEEKS DE FREES, A.B., Research Assistant in History
 CHARLES ABRAM DEKKER, A.B., Assistant in Chemistry
 WILLIAM FRANCIS DE LORENZO, B.S., Assistant in Bacteriology
 ROBERT GLENN DEMAREE, B.S., Assistant in Psychology
 MRS. RUTH WILLARD DE TURK, M.S., Assistant in Spanish
 JOHN LYONS DEWEY, B.S., Assistant in Chemistry
 ROY EVERETT DIAL, B.S., Special Research Assistant in Chemistry
 KERN WILLIAM DICKMAN, B.S., Assistant in Mathematics‡
 MARY ANN DILLER, A.B., Assistant in English
 MARTIN ROBERT DOCTOR, A.B., Assistant in Zoology
 PATRICIA ANN DOLAN, A.B., Assistant in English
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 SIDNEY DAVID DRELL, A.B., Assistant in Physics
 ELWANDA JUNE DRENNAN, B.S., Assistant in Home Economics
 THEODORE ALDEAN DUFFIELD, B.S., Assistant in Journalism‡
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 CHARLES FINLEY DUNCAN, JR., A.B., Assistant in Speech‡
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 CHARLES HUBERT EADES, JR., A.M., Special Research Assistant in Chemistry
 DAVID KIRK EADS, B.S., Research Assistant in Chemistry
 JAMES OWEN EATON, M.S., Assistant in Accountancy
 JACOB MURRAY EDELMAN, A.M., Assistant in Political Science
 EMELYN EGGEMEYER, A.M., Assistant in English
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 ERNEST LUDWIG ELIEL, Dr.Phys.Ch.Sc., Special Research Assistant in Chemistry
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 MARJORIE FULTON ELSE, A.B., Assistant in English
 URSEL RALPH EMBRY, B.S., Assistant in Physics
 BRUCE EMERSON ENGLUND, A.B., Assistant in Chemistry‡
 JOHN WILBUR ERICKSON, B.S., Assistant in Art
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 CEVDET ALI ERZEN, M.S., A.M., Assistant in Mathematics

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 MRS. JOSEPHINE FRERICHS EVANS, A.M., Assistant in English
 MARSHALL BLACKWELL EYSTER, B.S., Assistant in Physiology
 J. L. FAIRCHILD, B.S., Assistant in Mechanical Engineering‡
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 ELISABETH ETHEL FARBER, A.B., Assistant in Physics
 BETTY JEAN FARLEY, A.B., Assistant in Spanish
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 GORDON WESLEY FIELDER, JR., M.S., Assistant in Education‡
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 EDWIN HAROLD FLYNN, B.S., Special Research Assistant in Chemistry
 DONALD JAMES FOLEY, A.M., Assistant in the Classics
 ISAAC GEORGE FORBES, M.S., Assistant in Mathematics
 IRWIN SILVERTHORN FOSNAUGH, A.B., Assistant in Economics
 MRS. RUTH CONLEY FOSNAUGH, A.M., Assistant in Spanish
 ELIZABETH JANE FOSTER, B.S., Assistant in Chemistry
 WALTER JOSEPH FRAJOLA, B.S., Assistant in Chemistry
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 PAUL LOUIS FRETER, C.P.A., Assistant in Accountancy
 MARIANNE RUTH FREUNDLICH, M.S., Assistant in Mathematics
 MRS. ROSLYN BERGER FRIEDMAN, B.S., Assistant in English
 MRS. BARBARA WHITING FRISON, A.B., Research Assistant in Physiology*
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 ROBERT WASHBURN FRITTS, A.B., Assistant in Physics‡
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 BYRON EGBERT FULK, A.B., Assistant in Psychology
 EVERETT GLADDING FULLER, A.B., Assistant in Physics
 JOSEPH PATTON FULTON, A.M., Assistant in Botany
 CLARENCE NATHAN FUQUA, M.S., Assistant in Mathematics
 JAMES ROLF GAEBE, B.S., Assistant in Geology
 VAN RUSSELL GAERTNER, B.S., Assistant in Chemistry
 MERLIN ESTES GARBER, A.M., B.D., Assistant in Sociology‡
 ROBERT VANCE GARDNER, A.M., Assistant in Sociology
 UPSON STANLEY GARRIGUS, M.S., Assistant in Animal Husbandry
 DOROTHA JEANETTE GARRISON, A.M., Assistant in Geography‡
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 MRS. CORNELIA SUE GIFFORD, B.S., Research Assistant in the Provost's Office
 KATHARINE TRACY GILL, A.M., Assistant in English
 STANLEY FRANCIS GILMAN, B.S., Assistant in Mechanical Engineering‡
 MARY NANCY GIRHARD, B.S., Assistant in Geology
 ROY GLADSTONE, M.S., Assistant in Education
 SIDNEY FREDERICK GLASSMAN, A.B., Assistant in Botany
 FREDERICK ISAAC GODSHALK, A.B., Research Assistant in the Office of the High School
 Visitor‡
 MRS. OLIVE REMINGTON GOLDMAN, A.M., Assistant in Speech‡
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 ROMA ADA GOULD, M.S., Assistant in Biology

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NORMA GOURLEY, A.M., Assistant in German
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 JAMES ARNOLD GREEN, A.B., Assistant in Zoology
 GORDON LAMAR GRIFFITH, B.S., Assistant in Physics
 PAUL JAMES GRIFFITHS, B.S., Assistant in Mechanical Engineering
 GERTRUDE VALENTINA GRODSKI, M.S., Assistant in Economics
 HARRY JACK GRUSIN, B.S., Assistant in Business English
 STANLEY CYRIL GRZEDA, M.S., Assistant in Psychology
 GORDON OWEN GUERRANT, A.B., Assistant in Chemistry
 HAROLD DEWEY GUY, B.S., Assistant in Mathematics
 MRS. DOROTHY VEINUS HAGAN, A.M., Assistant in Literature and Fine Arts
 ELMORE ALAN HALE, A.B., Assistant in Physics
 MRS. ANN BENSON HALL, A.B., Assistant in English
 HUBERT ELLSWORTH HALL, JR., A.B., Assistant in English
 JOHN WALTON HALL, M.S., Assistant in Botany
 WILSON DUDLEY HALL, A.B., Assistant in Speech
 JEAN CECIL HALTERMAN, B.S., Assistant in Business Organization and Operation
 LAVERN M. HAMAND, B.S., Assistant in History
 JOSEPH R. HAMBENNE, A.M., Assistant in Sociology‡
 JOHN WILLIAM HAMMERSMITH, Assistant in General Engineering Drawing‡
 HOWARD DEVON HAMILTON, B.S., Assistant in Political Science
 NATHAN HUGHES HAMILTON, B.S., Special Research Assistant in Chemistry
 ARTHUR HAMPSON, JR., B.S., Assistant in Physical Education for Men†
 MRS. BETTY ALEXANDER HANNA, A.M., Assistant in Mathematics
 JOHN RICHARD HARDER, B.S., Assistant in Mechanical Engineering
 MORTON HARFENIST, M.S., Assistant in Chemistry*
 ISAAC HENSON HARRIS, A.M., Assistant in Mathematics
 MRS. EDITH SERED HARTMAN, B.S., Assistant in Chemistry
 MRS. HELEN PARKER HARTMAN, A.B., Research Assistant in Psychology
 HERMAN DAVID HARTSTEIN, B.S., Assistant in Mathematics
 BARBARA ELLEN HARVEY, A.B., Assistant in English
 FRANK FLINN HASBROUCK, A.B., Assistant in Entomology
 ALBERT JEROLD HATCH, B.S., Assistant in Physics
 MRS. JANE RIGGS HAYNES, A.B., Assistant in French
 THOMAS MORRIS HAYNES, A.B., Assistant in Philosophy
 LEONARD KEITH HAYS, B.S., Assistant in Accountancy
 RAY LEROY HAYS, A.B., Assistant in Zoology
 RICHARD EDWIN HECKERT, A.B., Assistant in Chemistry
 GLADYS IDA HEINLEIN, A.M., Assistant in Physics
 HERBERT LOUIS HEISS, A.B., Assistant in Chemistry
 LILLIAN HEJTMANEK, A.M., Assistant in Spanish
 ROBERT JULIAN HELWIG, M.S., Assistant in Accountancy
 LEO FRANCIS HENEGHAN, A.B., Special Research Assistant in Chemistry
 ALBERT WILLIAM HEYER, JR., A.B., Research Assistant in Psychology
 HOWARD JAY HICKES, B.Ed., Assistant in Education‡
 MARY MARGARET HICKEY, A.B., Assistant in Spanish
 JAMES BARNETTE HICKS, A.B., Research Assistant in the Institute of Labor and Industrial Relations
 THOMAS APPLGATE HIERONYMUS, B.S., Assistant in Agricultural Economics
 FRANK JOHN HILL, B.S., Assistant in Economics
 MRS. HELEN WILLIAMS HILL, A.M., Assistant in English
 ORVILLE FARROW HILL, M.S., Research Assistant in Chemistry
 MRS. MILDRED HALACEK HINE, B.S., Assistant in Chemistry
 JACK WILEY HINMAN, M.S., Special Research Assistant in Chemistry
 MRS. AUGUSTA KNOEPFELMACHER HIRSCH, M.S., Assistant in Chemistry
 GERTRUDE MADELINE HIRSCH, B.S., Assistant in Physiology
 GEORGE EDWARD HOFFMAN, A.M., Assistant in English

* Resigned. † First semester. ‡ Second semester.

HELEN PAULINE HOFFMAN, M.S., Assistant in Mathematics
 ROBERT CLAIR HONEA, JR., B.S., Assistant in Geology
 SHIZUO HORI, B.S., Assistant in Electrical Engineering
 LOIS AILEEN HOSTINSKY, A.M., Assistant in Mathematics
 KATHERINE NELSON HOUSTON, A.M., Assistant in English
 BERNARD EUFINGER HOWARD, B.S., Assistant in Mathematics
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 CHARLES HERITAGE HOYT, B.S., Assistant in Chemistry
 CLARENCE VERNON HUBBARD, M.S., Assistant in Bacteriology
 HARMON WILLIAM HUBBARD, B.S., Assistant in Physics
 PAUL GAYLORD HUBBARD, A.M., Assistant in History
 WILLIAM LOGAN HUFFMAN, M.S., Assistant in Mathematics
 ERIC LESTER HUGHES, B.S., Assistant in Physical Education for Men‡
 ALBERT EDWIN HURT, B.S., Assistant in Accountancy
 BURRIS FREDERICK HUSMAN, B.S., Assistant in Botany
 MARY ADELINE HUSSEY, A.M., Assistant in English
 MRS. HAZEL MOSIER HUSTON, B.S., Assistant in Education
 MRS. JANE IVES HUTHMACHER, A.B., Assistant in English
 RUTH MARIA HUTTER, B.Mus., Assistant in Music
 EDNA ELIZABETH INDRITZ, B.S., Assistant in Physics
 RICHARD GUY INSKEEP, A.B., Assistant in Chemistry
 MRS. DOROTHY URSULA IRISH, A.M., Assistant in Physiology
 PAUL WILSON ISBELL, B.S., Assistant in Economics‡
 NATHANIEL JACKENDOFF, A.M., Assistant in Economics
 DALE EDWARD JACKSON, A.B., Assistant in Chemistry
 JAMES LOUIS JACKSON, A.M., Assistant in English
 KARL MICHAEL JAKOB, B.S., Assistant in Vegetable Crops‡
 MRS. ELIZABETH SCHMIDT JAMES, B.S., Assistant in Home Economics
 ROBERT MINOR JAMES, B.S., Assistant in Accountancy
 JOHN URBAN JEFFRIES, B.S., Assistant in Electrical Engineering
 GALE EDWARD JENSEN, Ed.M., Research Assistant in the Bureau of Educational Research
 MILFORD CYRIL JOCHUMS, A.M., Assistant in English
 ALVIN RALPH JOHNSON, JR., A.B., Assistant in German
 JAMES LESLIE JOHNSON, B.S., Assistant in Chemistry
 JOHN HARPSTER JOHNSON, B.S., Assistant in Chemistry
 ROBERT ARTHUR JOHNSON, B.S., Assistant in Physics
 ROY DONALD JOHNSON, B.S., Special Research Assistant in Chemistry
 SELMER MARTIN JOHNSON, A.M., M.S., Assistant in Mathematics
 VERLIN KENNETH JOHNSON, B.S., Assistant in Animal Husbandry
 SHIRLEY MAE JOHNSONBAUGH, A.B., Assistant in English
 VIRON VERNON JONES, B.S., Research Assistant in Chemistry
 MERCEDES GUILLERMINA KAHLERT, A.M., Assistant in Spanish
 HAROLD WAYNE KALLENBACH, B.Ed., Assistant in Physical Education for Men
 MAX KAPLAN, M.Mus., A.M., Assistant in Sociology
 HARRY FREY KAUFFMAN, JR., B.S., Assistant in Chemistry
 CLARA VIVIAN KEATING, B.S., Assistant in Bacteriology‡
 AMY KELL, A.B., Assistant in Zoology
 WALTER GERRY KELL, M.B.A., Assistant in Accountancy
 WILLIAM EARNEST KENNEDY, B.S., Assistant in Crop Production
 HERMAN DAVID KERFMAN, Special Research Assistant in Chemistry
 ROBERT VERNON KESLING, M.S., Assistant in Geology
 THEODORE HAZEN KIMBLE, A.B., B.S., Assistant in Journalism
 DUDLEY DAVIS KIMPTON, M.S., Assistant in Chemistry
 JOHN RANKIN KINNEY, M.S., Assistant in Mathematics
 PAUL MARVIN KINTNER, B.S., Assistant in Electrical Engineering
 MRS. ALICE CURTIS KIRKPATRICK, J.D., Assistant in Business Law‡
 LEONARD BURTON KIRSCHNER, B.S., Assistant in Physiology‡
 MARK OLIVER KISTLER, A.M., Assistant in German
 ALBERT SLEDGE KNAUF, B.S., Assistant in Mathematics‡
 TRENT SIMON KNEPPER, B.S., Assistant in Mathematics

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KARL JOSEPH KOENIG, M.S., Assistant in Geology
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CAROL KOUSNETZ, B.S., Assistant in Physics‡
WILLIAM SAMUEL KRUEGER, JR., B.S., Assistant in Physical Education for Men
HERBERT ERNEST KUBITSCHKEK, M.S., Assistant in Physics
FREDERICK WILLIAM KUETHER, M.S., Assistant in Physics
MRS. JEAN FINGER LAMON, A.B., Assistant in Botany
MRS. ALICE MESERVE LANE, A.B., Assistant in Spanish
RAY GARTNER LANGEBARTEL, A.M., Assistant in Mathematics
ARTHUR LAVERNE LATHROP, M.S., Assistant in Physics
MRS. MARY TREADWELL LAWTON, A.B., Assistant in Mathematics
MRS. MARTHA MACGALLIARD LEAVENWORTH, A.M., Assistant in Botany
HAROLD GORDON LEFFLER, M.S., Assistant in Mathematics
GEORGE FRANCIS LEGER, JR., B.S., Assistant in Mathematics
HOWARD ALLEN LEITER, A.M., Assistant in Physics
MRS. ERLINE PEARL LEMING, B.S., Assistant in Home Economics
CHARMENZ S. LENHART, M.S., Assistant in English
JOHN MILTON LENOIR, M.S., Assistant in Chemistry‡
MRS. SARA THOMAS LEONARD, A.B., Assistant in English
GERHARD WALTER LEUBNER, B.S., Research Assistant in Chemistry
DANIEL LAWRENCE LEUSSING, A.B., Assistant in Chemistry
IDA LEVINSON, B.S., Assistant in the Speech Clinic
MRS. HELEN SIMON LEWIS, B.S., Assistant in Chemistry
WILLIAM HARRIS LIBBY, A.B., Assistant in Chemistry
SIEGFRIED ERIC LIENK, M.S., Assistant in Entomology‡
EDWARD HAWLEY LINCOLN, M.S., Assistant in Chemistry
MRS. HELEN HOWARD LINK, A.B., Assistant in French
MRS. JOAN RALSTON LIPPINCOTT, B.F.A., Assistant in Art
DOROTHY LITHERLAND, M.S., Assistant in Accountancy
MARGUERITE LITTLE, Ph.D., Graduate Assistant in the Graduate School
JAE LUIS LITTRELL, M.S., Research Assistant in Zoology
GRACE MARIE LOESCHER, B.Ed., Assistant in Botany
MRS. BARBARA ELLIS LONG, B.S., Assistant in Psychology
YEN HOONG LOO, Ph.D., Special Research Assistant in Chemistry
JOHN BIGELOW LORD, A.B., Assistant in Business English‡
JOHN FREDERICK LOUNSBURY, M.S., Assistant in Geography
VIRGINIA MAUD LOWELL, A.M., Assistant in English
MRS. DOROTHY LYONS, A.B., Assistant in English
MARY FRANCES LYSTER, A.M., Assistant in English
MRS. BETTY ANN LYTLE, A.M., Assistant in Chemistry
MRS. GERTRUDE RAFFERTY MACHLIS, M.S., Assistant in Zoology*
SCOTT MACKENZIE, JR., M.S., Research Assistant in Chemistry
ELIZABETH JONES MACKKEY, A.B., Assistant in English
LEWIS MALCOLM MAGILL, JR., A.M., Assistant in English
BRUCE HALE MAINOUS, A.M., Assistant in French
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HENRY HAROLD MAMET, A.B., Assistant in Speech
WERNER MANHEIM, M.Mus., Assistant in German*
MRS. BETTY GUM MARBERRY, B.Ed., Assistant in English
CLIFFORD DANIEL MARSHALL, B.S., Assistant in Chemistry‡
JAMES FRED MARSHALL, A.M., Assistant in French
MRS. BETH STEPHENS MARTIN, A.B., Assistant in German and Teacher of German in University High School
GEORGE EDWARD MARTIN, B.S., Assistant in Business Organization and Operation
JOHN RUSSELL MASON, B.S., Assistant in Electrical Engineering
BENJAMIN HENRY MASSEY, A.B., Assistant in Physical Education for Men
MELVIN JOHN MATEYKA, A.M., Assistant in History

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 CHARLES WILLARD MATHUEWS, JR., A.M., Assistant in Mathematics
 JEAN BENOIT MATHIEU, Dr. Ing., Special Research Assistant in Chemistry
 MRS. PHYLLIS GREENE MATTINGLY, A.B., Assistant in French
 RAYMOND HARDING MATTSON, B.S., Assistant in Chemistry
 RICHARD ELMORE MAXWELL, B.S., Assistant in Chemistry
 GEORGES CLAUDE MAY, Lic. és L., Assistant in French*
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 EUGENE FREDERICK MCBRIDE, B.S., Assistant in Accountancy
 MARGARET ALEXANDER MCBRYDE, A.B., Assistant in Mathematics
 GIFFORD EWING MCCASLAND, Ph.D., Special Research Assistant in Chemistry
 EVERETT LEE MCCLEARY, B.S., Assistant in Physics
 ALAN LINDSEY MCCLELLAND, B.S., Assistant in Chemistry‡
 CLAYTON JUNIOR MCDOLE, B.S., Assistant in Physics
 AGNES MAE McDONALD, A.B., Assistant in Mathematics and Special Teacher for War
 Veterans in University High School
 ROBERT LORIMER MCGEACHIN, Ph.D., Research Assistant in Chemistry
 JAMES ROBERT MCGHEE, B.F.A., Assistant in Architecture
 HELEN ANN MCGRATH, A.B., Assistant in Chemistry
 GERALD D. McMULLEN, B.S., Assistant in Electrical Engineering
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 TRACY B. NABERS, B.S., Assistant in General Engineering Drawing and Teacher of
 Industrial Arts in University High School
 ELAINE VIVIAN NANTKES, M.S., Assistant in Astronomy
 MARVIN FREEMAN NATHAN, M.S., Special Research Assistant in Chemistry
 LORRAINE NAUSS, B.Ed., Assistant in Speech*
 GERALD KENNETH NELSON, B.S., Assistant in Accountancy
 NILS KEITH NELSON, B.S., Assistant in Chemistry
 DONALD LEO NETZER, A.B., Ph.B., Assistant in Geography
 HARRIET EDITH NEVILLE, B.S., Special Research Assistant in Chemistry
 GORDON FRANK NEWELL, B.S., Assistant in Physics

* Resigned.

‡ Second semester.

MRS. ELAINE FRANCINE CHARLOTTE NEWKIRK, Assistant in French
 CHARLES DEAN NEWNAN, JR., B.S., Assistant in Chemistry‡
 CONSTANCE NICHOLAS, A.M., Assistant in English
 ELDON DENZEL NIELSON, A.B., Assistant in Chemistry
 SHIMPE M. NISHIMURA, B.S., Research Assistant in Botany
 CHARLES WILLIAM NIXON, B.S., Assistant in Zoology
 ERWIN WARD NOMMENSEN, M.S., Assistant in Mathematics
 RICHARD EDWIN NORBERG, A.B., Assistant in Physics
 NELSON FRANCIS NORMAN, A.M., Assistant in History
 CARL JOHN NYMAN, JR., M.S., Assistant in Chemistry
 EDWARD IRVIN ONSTOTT, B.S., Assistant in Chemistry‡
 MRS. LUCILE FREDIGKE OTTON, B.S., Assistant in Geology*
 GEORGE MARINUS OUDYN, A.M., Assistant in French
 JEHUDA OVADIA, A.B., Assistant in Physics
 MRS. GERALDINE LYON OWEN, A.M., Assistant in English
 JOHN ISAAC OWEN, A.M., Assistant in English‡
 NELSON THOMAS PALMATIER, B.S., Assistant in Zoology*
 ALVIN LOREN PARK, A.B., Research Assistant in the Institute of Labor and Industrial Relations‡
 BARBARA PARKINSON, A.B., Assistant in English
 CHARLES IVEY PATTERSON, JR., A.M., Assistant in English‡
 HOWARD LEWIS PATTON, B.S., Assistant in Geology
 JOHN PETER PELLEGRINI, JR., B.S., Assistant in Chemistry
 MARGARET MEDA PENDLETON, B.S., Assistant in Geology
 ROBERT HUTCHINSON PENTZ, JR., M.B.A., Assistant in Business English*
 JOANN PERRING, A.B., Assistant in English
 RALPH MARION PERRY, A.M., Assistant in French
 HELEN OLLIVE PERSONS, A.M., Assistant in English
 JANET BROOKS PETERSON, B.S., Assistant in Chemistry
 GEORGE AMBROSE PETTICREW, B.S., Assistant in Electrical Engineering
 MRS. CONSTANCE FRANKLIN PEYROT, A.B., Assistant in English
 JULIUS EUGENE PHEIFFER, B.S., Assistant in Economics‡
 CLARENCE PHILLIPS, A.M., Assistant in Mathematics
 JAMES ALFRED PHILLIPS, M.S., Assistant in Physics
 ROBERT RICHARD PHILLIPS, A.B., Assistant in Chemistry
 NORWIN CALEY PIERCE, M.S., Assistant in Chemistry
 RUTH CHARLOTTE PIERLE, A.B., Assistant in Chemistry
 FREDERICK JOHN PILGRIM, M.S., Special Research Assistant in Chemistry
 WILLIAM HENRY POGEMEIER, JR., A.B., Assistant in Chemistry
 ROBERT SEYMOUR POGRUND, M.S., Research Assistant in Chemistry
 ADRIAN WILLIAM POITRAS, B.S., Assistant in Botany‡
 HERSCHEL DONOVAN PORTER, B.S., Research Assistant in Chemistry
 KATHLEEN KATHARINE POST, B.S., Assistant in Art
 BETTY LOU PRESTON, A.B., Assistant in Spanish
 THOMAS GRENVILLE PRIDHAM, M.S., Assistant in Bacteriology
 MARJORIE ANNA PRYOR, B.S., Assistant in Botany
 FRANCIS MCCONNELL PULLIAM, A.M., Assistant in Mathematics
 LEROY LILLARD QUALLS, A.M., Assistant in Economics
 MRS. JANET COOPER RAPP, M.S., Assistant in Botany
 WILLIAM FREDERICK RAPP, JR., M.S., Assistant in Entomology
 HAROLD RAUCH, B.S., Assistant in Zoology‡
 RICHARD L. RAYMOND, B.S., Assistant in Bacteriology‡
 CORDELIA REED, A.M., Assistant in French
 EDWARD WILSON REED, A.M., Assistant in Economics
 ELIZABETH JEANE REEVES, B.S., M.T., Assistant in Veterinary Anatomy and Histology
 HARRY PAYNE REEVES, A.M., Assistant in Spanish
 JAMES EARL REINSCHREIBER, B.S., Assistant in Chemistry
 JOHN NEWTON RENARD, M.S., Assistant in Education‡
 MARY JANE RICE, B.S., Assistant in Home Economics
 SHERMAN THEODORE RICE, B.S., Assistant in Farm Management
 VIRGIL THOMAS RICE, A.B., Assistant in Economics

* Resigned. ‡ Second semester.

MRS. DOROTHY JANE RIDDLE, B.S., Assistant in Botany
 EDWIN WINSLOW ROBBINS, A.M., Assistant in English
 MRS. MARY WRIGHT ROBBINS, A.B., Special Research Assistant in Chemistry
 RALPH EUGENE ROBISON, B.S., Assistant in Civil Engineering
 FRANKLIN ALANSON RODGERS, B.S., Assistant in Physics
 KERMIT OAKLEIGH ROE, Ed.M., Assistant in Agricultural Engineering
 JOHN PEEPLES ROEDEL, B.S., Assistant in Mechanical Engineering
 GEORGE ARTHUR ROGERS, A.B., Assistant in History
 ROBERT ERRETT ROGERS, B.S., Assistant in Geology
 ROBERT CAVEN RONALD, A.B., Assistant in Chemistry
 EVELYN JEAN ROPP, B.S., Research Assistant in the Provost's Office
 STANLEY NELSON ROSCOE, A.B., Research Assistant in Psychology
 RALPH JOSEPH ROSKE, A.M., Research Assistant in History
 MRS. JEAN ALEXANDER ROSS, M.S., Research Assistant in Zoology
 JOHN WILLIAM ROTHROCK, B.S., Special Research Assistant in Chemistry
 EDWARD IRWIN RUBENDALL, JR., A.B., Assistant in Physics
 MARGARET KARIN RUESTER, B.S., Assistant in English
 WILLIAM VANCE RUYLE, A.M., Assistant in Chemistry
 HENRY ZODOC SABLE, M.D., Assistant in Chemistry*
 MRS. BARBARA BOMBARD SALOOM, A.B., Assistant in Spanish
 HAROLD RAYMOND SANDBERG, B.S., Assistant in General Engineering Drawing
 JUDSON SANDERSON, JR., B.S., Assistant in Mathematics‡
 HOWARD LEROY SANTER, B.S., Assistant in Economics*
 HERBERT BASIL SASLOW, M.S., Assistant in Zoology
 MRS. FRANCES WRIGHT SAUNDERS, A.M., Assistant in Chemistry
 ALBERT JACKSON SAUR, B.S., Assistant in Physics
 ROGER BEHM SAYLOR, A.M., Assistant in Economics
 MRS. SYLVIA NORTEN SCHACHT, A.B., Assistant in English
 ISAAC WOODROW SCHAFFER, B.S., Assistant in Physical Education for Men‡
 MRS. JOYCE PETERSEN SCHAFFER, B.S., Research Assistant in Zoology†
 GEORGE POLLOM SCHARF, A.B., Assistant in Speech‡
 HAROLD PHILIP SCHEINKOFF, A.B., Assistant in Economics‡
 WILLIAM EARL SCHENK, A.M., Assistant in Economics
 MRS. LOUISE COLE SCHICK, A.B., Assistant in Speech*
 ROGER ALFRED SCHOLTEN, B.S., Assistant in Electrical Engineering
 WILBUR WILLIS SCHOOF, A.B., Assistant in Physics‡
 ANTHONY WOLFGANG SCHRECKER, M.S., Assistant in Chemistry*
 MRS. HELENE SCHRECKER, A.B., Assistant in French
 DONALD FRANK SCHROEDER, A.B., B.D., Assistant in Sociology
 EVELYN MARY SCHROTH, B.S., Assistant in English
 WILLIAM MATTHEW SCHULTZ, B.S., Assistant in Mechanical Engineering‡
 JOHN ABRAHAM SCHUMAKER, B.S., Assistant in Mathematics
 HENRY SCHUTZBERGER, M.S., Assistant in Mathematics
 LELAND LATHAM SCOTT, B.S., Assistant in Mathematics‡
 GEORGE SCOUFFAS, A.M., Assistant in English
 MRS. ROBERTA SCOUFFAS, A.M., Assistant in English
 JOHN ARTHUR SEALANDER, M.S., Assistant in Zoology
 ALLEN EUGENE SENEAR, Ph.D., Research Assistant in Chemistry
 FRANK BENEDICT SENGER, JR., B.S., Assistant in Journalism
 JOHN DAVID SENGER, B.S., Assistant in Business Organization and Operation
 RAYMOND PETER SEVEN, M.S., Assistant in Chemistry
 ARTHUR JAMES SHANAHAN, M.S., Assistant in Bacteriology
 EUGENE BAYLIS SHANKS, A.M., Assistant in Mathematics
 YODER FULMER SHEALY, B.S., Assistant in Chemistry
 MARK SHEPHERD, JR., B.S., Assistant in Electrical Engineering
 HELEN BERYL SHER, A.B., Assistant in Spanish
 MRS. MARION TAGGART SHERK, A.B., Assistant in Physics
 CARLYLE EDWARD SHOEMAKER, M.S., Assistant in Chemistry
 GRADUS LAWRENCE SHOEMAKER, M.S., Assistant in Chemistry
 FERDINAND JOHN SHORE, JR., A.M., Assistant in Physics
 MRS. GISELE HÉLENE SHOTLIFF, Assistant in French‡

* Resigned.

† First semester.

‡ Second semester.

ODETTE LOUISE SHOTWELL, M.S., Assistant in Chemistry
 HOWARD EUGENE SHUMAN, B.S., Assistant in Speech
 MRS. MARJORIE HEDRICK SIBLEY, A.M., Assistant in Social Science
 CARL FRANK AUGUST SIEVERT, B.S., Assistant in Chemistry
 KWANG YUE SIH, M.S., Assistant in Electrical Engineering
 BERNARD SILVERMAN, B.S., Assistant in Electrical Engineering
 MARY SIMON, A.M., Assistant in English†
 WILLIS MARION SIMONS, A.M., Assistant in English
 STANLEY HAROLD SIMONSEN, A.B., Assistant in Chemistry
 CLIFFORD HARRY SIMONSON, M.S., Assistant in Chemistry
 ANNETTE SINCLAIR, A.M., Assistant in Mathematics
 JOHN MORGAN SISLEY, B.S., Assistant in Physical Education for Men‡
 WILLIAM SKELTON, B.Mus., Assistant in Music
 ARNOLD BERYL SKLARE, A.B., Assistant in English
 EMILY MARIE SLAPAK, B.S., Assistant in Zoology
 MARIAN JOYCE SMALLEGAN, A.B., Assistant in Chemistry
 BUFORD SMITH, JR., B.S., Assistant in Electrical Engineering
 JAMES VIRGIL SMITH, JR., A.B., Assistant in Chemistry
 LEONARD CHARLES SMITH, JR., A.B., Assistant in Chemistry
 PHILIP BARTLETT SMITH, B.S., Assistant in Physics
 ROBERT ALBERT SMITH, B.Ed., Research Assistant in History
 ROBERT JOSEPH SMITH, A.B., Assistant in Landscape Architecture
 LAURIE JAMES SNELL, B.S., Assistant in Mathematics‡
 WILLIS EVERETT SNOW, M.S., Assistant in Botany
 BETTY ALICE SNYDER, B.S., Assistant in Microanalysis
 LLOYD RUSHFORD SORENSON, A.M., Assistant in History
 MRS. WINIFRED JUNE SORRENTINO, A.B., Assistant in Zoology
 GORDON MANFORD SOWERS, B.S., Assistant in Geology†
 EARL CHESTER SPAETH, Ph.D., Special Research Assistant in Chemistry*
 MARJORIE MARIE SPAIN, A.M., Assistant in French*
 DREW SPARKMAN, M.S., Research Assistant in Zoology
 VINCENT JAMES SPERRAZZO, B.S., Assistant in Mathematics
 DAVID ALLEN SPERRY, A.M., Assistant in English
 CATALINA SPINETTO, B.S., Assistant in Spanish
 CLINTON SPIVEY, B.S., Assistant in Business Organization and Operation‡
 PHILIP ARCHIE SPRADLING, A.B., Assistant in Journalism and Chief Announcer in the
 Radio Station
 MARK ANDERSON SPRAGUE, B.F.A., Assistant in Art
 ROBERT STEACY SPRAGUE, B.S., Assistant in Chemistry
 DARRELL LEONARD SPRIGGS, B.S., Assistant in Economics‡
 MELVIN DALE SPRINGER, M.S., Assistant in Mathematics
 ORVAL SALEEM SPURLIN, B.Ed., Assistant in Physical Education for Men
 WALTER STAACKS, JR., A.M., Assistant in French
 JOAN STAATS, B.S., Assistant in Zoology
 ROBERT LEE STALLINGS, JR., B.S., Assistant in Accountancy
 MARTHA JUNE STANBERRY, A.B., Assistant in Speech
 ELLEN LENORA STANLEY, A.B., B.S., Assistant in Library Science
 FRED WILLIAM STARKS, B.S., Assistant in Chemistry‡
 LYMAN ALLAN STARR, B.Mus., Assistant in Music
 SAMUEL CHARLES STEIN, B.M.E., Assistant in Mechanical Engineering
 FRED WALTER STEMLER, JR., B.S., Assistant in Zoology
 SHERWIN STENN, B.S., Assistant in Mechanical Engineering‡
 CLARENCE STERLING, Ph.D., Research Assistant in Botany
 ROBERT STERNFELD, A.M., Assistant in Philosophy
 ULRICH BERNARD STEUER, A.M., Assistant in Sociology*
 LLOYD RUSSELL STEVENS, JR., A.B., Assistant in Physics
 MARGARET RUTH STEWART, B.S., Assistant in Accountancy
 MRS. MARJORIE HAWKINS STICKNEY, A.B., Assistant in the Speech Clinic
 MRS. MILDRED GRAF STIEG, A.B., Assistant in German
 MARY LOUISE STIEMERT, B.S., Research Assistant in Botany
 LEO CLAIR STINE, A.M., Assistant in Political Science

* Resigned. † First semester. ‡ Second semester.

EMANUEL STOLMAN, B.S., Assistant in Mathematics†
 TOM ATKINS STOMBAUGH, M.S., Research Assistant in Zoology‡
 DOROTHY GENE STONECIPHER, A.B., Assistant in Psychology
 ALAN DICKIE STRADTMAN, B.S., Assistant in Physical Education for Men
 DONA RUTH STROHL, A.B., Assistant in English
 ROBERT STUMP, A.B., Assistant in Physics
 RICHARD EUGENE SULLIVAN, A.M., Research Assistant in History
 ANDREW WILLIAM SUNYAR, M.S., Assistant in Physics
 ALEXANDER KENNEDY SUTHERLAND, B.V.Sc., Assistant in Veterinary Pathology and Hygiene
 ROBERT MIZE SUTTON, A.M., Assistant in History‡
 MRS. EDITH SENDENBURGH SWENEY, A.M., Assistant in English
 MRS. MADELLE KEATHLEY TAMMINGA, B.S., Assistant in Journalism*
 PETER ALBERT TAVORMINA, B.S., Assistant in Chemistry
 CHARLES JOEL TAYLOR, JR., M.S., Assistant in Physics
 RICHARD HARVEY TENNYSON, B.S., Assistant in Chemistry
 WILLIAM ALLAN TEPPERT, B.S., Assistant in Physiology‡
 STANLEY WALLACE TERRILL, B.S., Assistant in Animal Husbandry
 RICHARD JACK TEWELES, B.S., Assistant in Business Organization and Operation
 FRED WILLIAM THALGOTT, M.S., Assistant in Mathematics
 MRS. ELIZABETH NORTH THIELEMANN, A.B., Assistant in Speech
 DON FREDERICK THOMANN, A.M., Research Assistant in the High School Testing Bureau
 CLARENCE WILBUR THOMAS, A.B., Assistant in History
 GLYN NICHOLAS THOMAS, A.M., Assistant in English
 MRS. MARIE CATHERINE GRYCH THOMAS, B.S., Assistant in English
 SHIRLEY MAY THOMAS, A.M., Assistant in English
 RALPH ENOS THOMSON, B.S., C.P.A., Assistant in Accountancy†
 CHARLES BENEDICT THUOT, B.S., Assistant in Industrial Education
 ALBERT CARTER TILLMAN, A.B., Assistant in English
 LOUISE TITUS, A.B., Assistant in Home Economics‡
 JOHN YUNG SAU TOM, A.B., Assistant in Zoology
 GEORGE CAMBRIDGE TOMPKINS, B.S., Assistant in Business Organization and Operation
 ROBERT DANIEL TOOMEY, M.S., Assistant in Chemistry
 WILLIAM B. TORAN, A.M., Assistant in English
 FRANCIS TOURTELLOT, A.M., Assistant in German
 MRS. EVA KATHERINE TOUSTER, A.M., Assistant in English
 OSCAR TOUSTER, A.M., Special Research Assistant in Chemistry
 TRUMAN GLENN TRACY, A.M., Assistant in Economics
 JUNIOR TRACY TRIPP, B.S., Assistant in Physical Education for Men
 ROGER JAMES TULL, B.S., Assistant in Chemistry
 FREDERICK RICHARD VAN ABBEELE, B.S., Special Research Assistant in Chemistry
 ALLAN VAN DUREN, B.S., Assistant in Physics‡
 JOHN ROBERT VAN HORN, A.B., Assistant in Physics
 ESTHER LOUISE VANNICE, B.Ed., Assistant in Spanish
 ALICE ELIZABETH VAN TUYL, A.B., Assistant in Spanish
 MARJORIE ALICE VAN VRANKEN, A.B., Assistant in Physiology
 FRANK VERBANAC, B.S., Assistant in Chemistry
 THOMAS VEDDER WABER, A.B., Assistant in Journalism
 MYRLE CORDELIA WAGNER, M.S., Assistant in Chemistry
 WILLIAM FREDERICK WAGNER, M.S., Assistant in Chemistry
 ANN WALDRON, A.B., Research Assistant in Psychology
 HOWARD GEORGE WALKER, JR., B.S., Special Research Assistant in Chemistry
 STEPHEN EUGENE WALKLEY, B.S., Assistant in Mathematics
 DAVID JEFFERSON WALLACE, B.S., Special Research Assistant in Chemistry
 MRS. ELEANOR SIEKMANN WALLACE, B.S., Assistant in Home Economics
 HAROLD DEAN WALLACE, B.S., Assistant in Animal Husbandry
 ALBERT EDWARD WALMSLEY, B.S., Assistant in Mechanical Engineering
 OTIS MONROE WALTER, JR., A.M., Assistant in Speech
 HUBERT JACK WALTERS, B.S., Assistant in Entomology
 HAROLD JOHN WATSON, A.B., Assistant in Chemistry*
 CARL WEATHERBEE, A.M., Assistant in Chemistry

* Resigned.

† First semester.

‡ Second semester.

E. EUGENE WEAVER, A.M., Assistant in Chemistry
 HYMAN GABRIEL WEINSTEIN, B.S., Research Assistant in Zoology‡
 BENJAMIN WEISS, B.S., Assistant in Chemistry
 EPHRAIM WEISS, A.B., Assistant in Physics
 MRS. MARGARET CLEGG WELCH, B.S., Assistant in English†
 DAVID CURTIS WELLER, A.B., Assistant in Electrical Engineering‡
 RALPH MARTIN WETZEL, M.S., Assistant in Zoology and Physiology
 GILBERT VERNON WHEELER, B.S., Assistant in Physics
 JOHN LONG WHISENAND, B.S., Assistant in Mechanical Engineering
 EUGENE WHITE, A.M., Assistant in English
 RICHARD POPE WHITE, A.B., Assistant in Business Organization and Operation
 WILLIS MEYER WHITFIELD, B.S., Assistant in Electrical Engineering
 HAROLD TORREY WIEBE, A.M., Assistant in Zoology
 JAY WILSON WILEY, A.M., Assistant in Economics
 CHARLES THOMPSON WILKINS, A.M., Assistant in English
 JUDD RICE WILKINS, B.S., Assistant in Zoology
 ALBERT EDWARD WILLETT, A.M., Research Assistant in Physical Education for Men‡
 DOROTHY JANE WILLIAMS, A.B., Assistant in Physics
 DONALD ERNEST WILLIG, B.S., Assistant in Physics‡
 ARTHUR LOWELL WILSON, JR., B.Ed., Assistant in Physical Education for Men
 BONARD SCOTT WILSON, A.M., Assistant in Education‡
 CLAUDE ARTHUR WINKELHAKE, A.B., Assistant in Mathematics†
 GLEN WINTERRINGER, A.M., Research Assistant in Botany‡
 VERA DOROTHY WITTRICK, A.M., Assistant in English
 JACOB GROVE WOLF, B.S., Research Assistant in Physical Education for Men
 MARY CONSTANCE WOODS, A.B., Assistant in Chemistry
 HELEN IAMS WROTEN, M.S., Assistant in English
 GARRARD ERNEST ALFRED WYLD, M.S., Assistant in Chemistry
 MARVIN EUGENE WYMAN, M.S., Assistant in Physics
 MRS. VIRGINIA STOTT SPEERS, A.B., Research Assistant in the Bureau of Economic
 and Business Research
 LAURA MILLER YOST, A.B., Assistant in Zoology
 SAMUEL HOLLINGSWORTH YOUNG, III, B.S., Assistant in Economics
 MRS. ETHEL CLAFLIN YUNCKER, M.S., Assistant in Botany
 RICHARD MORRELL ZEHR, B.S., Assistant in Physics‡
 BLOSSOM ZEIDMAN, M.S., Assistant in Chemistry
 WALTER RICHARD ZIEBELL, B.S., Assistant in Geology
 EDWARD ROBERT ZIEVE, B.S., Assistant in Mechanical Engineering‡
 EDWARD JOHN ZIMMERMAN, M.S., Assistant in Physics
 CHARLES LEON ZIRKLE, B.S., Research Assistant in Chemistry
 MRS. LAURA BEATA ZIRNER, Assistant in Art
 MRS. MARGARET BAIRD ZWICK, A.B., Assistant in English

Teachers in University High School

CHARLES MOORE ALLEN, M.S., Principal of University High School and Assistant Professor of Education
 KENNETH JONES FRASURE, Ed.M., Assistant Principal of University High School
 LINDLEY JOSEPH STILES, Ed.D., Associate Professor of Education and Director of Student Teaching
 WILBER EUGENE HARNISH, A.M., Assistant Professor of Education and Head of the Department of Science
 LIESETTE JANE MCHARRY, A.M., Assistant Professor of Education and Head of the Department of English
 MARY FLORENCE LAWSON, M.S., Assistant Professor of Physical Education for Women
 MRS. VELMA KITCHELL WILSON, B.Mus., A.M., Assistant Professor of Music Education
 HAROLD A. SCHULTZ, A.M., Assistant Professor of Art Education
 MILES C. HARTLEY, Ph.D., B.Mus., Assistant Professor of Education and Head of the Department of Mathematics
 GILBERT CLARENCE KETTELKAMP, Ph.D., Assistant Professor of Education and Head of the Department of Foreign Languages

† First semester.

‡ Second semester.

- WILLMER OLOF ALSTROM, M.S., Assistant Professor of Education and Teacher of Physical Education§
 CLYDE GUY KNAPP, Ph.D., Assistant Professor of Education and Teacher of Physical Education‡
 MRS. MABEL REA HAGAN, M.S., Assistant Professor of Business Organization and Operation and of Education, and Teacher of Commercial Subjects
 EARL GRAHAM POGUE, A.M., Instructor in Education and Assistant Director of Student Teaching
 VYNCE ALBERT HINES, M.S., Instructor in Education and Teacher of Mathematics
 HARRIS WILLIAM DEAN, Ed.M., Instructor in Education
 MARY ALTA SULLIVAN, B.Ed., Instructor in Business Organization and Operation and Teacher of Commercial Subjects
 MRS. BETH STEPHENS MARTIN, A.B., Assistant in German and Teacher of German
 AGNES MAE McDONALD, A.B., Assistant in Mathematics and Special Teacher for War Veterans
 MRS. FRANCES DOUGLASS WILSON, A.M., Teacher of Social Studies
 PAULINE ELVA CHANGNON, A.M., Teacher of French
 MRS. DOROTHY POTTER SWINDELL, A.M., Teacher of English
 ROBERT MARION ALLEN, M.S., Teacher of Physical Education
 MARGARETE AUGUSTE BAUM, A.M., Teacher of English
 MRS. VIOLA GRIBANOVSKY, A.M., Teacher of English and Social Studies
 COLLEEN JEAN KIRK, M.S., Teacher of Music
 MRS. JEAN STAEHLING WARD, M.S., Teacher of Physical Education
 TRACY B. NABERS, B.S., Teacher of Industrial Arts
 MRS. LELA BROWN GUSTAFSON, B.S., Teacher of Home Economics*
 MRS. MARILYN ANDERSON MESSMORE, B.A.E., Teacher of Art
 MRS. AUDRY HILL LINDSEY, M.S., Teacher of Science
 JOSEPH STEPHEN ZUPSICH, B.Ed., Teacher of Latin
 JOHN WAGNER HANSON, A.M., Teacher of Social Studies‡
 RUTH MARIE PETERS, B.S., Teacher of Home Economics‡

**Administrators and Teachers Cooperating with the College of Education
 (First Semester, 1946-1947)**

- WILLIAM R. ABERNATHY, Teacher in Urbana High School
 CARL WALTER ALLISON, A.M., Principal of Champaign Senior High School
 DOROTHY ANDERSON, Teacher in South Side School
 EUGENE BRADLEY ARMER, M.S., Teacher in Urbana High School
 HENRY J. BOTHWELL, B.S., Assistant Principal of Urbana High School
 EZRA OREN BOTTENFIELD, A.M., Teacher in Champaign Senior High School
 RUTH CADE, Teacher in Urbana High School
 MRS. HAZEL ROHDE CARLSEN, B.S., Teacher in Lincoln School (Urbana)
 J. H. CHERRY, Principal of Olney Township High School
 L. T. CLARK, Teacher in Olney Township High School
 MRS. RUBY CLARK, Teacher in Lincoln School (Champaign)
 THOMAS HOWELL COBB, A.M., Superintendent of Urbana Schools
 HARRY AUSTIN COMBES, B.Ed., Teacher in Champaign Senior High School
 MRS. GENEVIEVE CROUSE, M.S., Teacher in Tolono Community High School
 FRANK GREENLEAF CROWELL, B.S., Teacher in Urbana High School
 MRS. ETTA L. DAVIS, Principal of Washington School
 WALTER B. DUDA, B.Ed., Teacher in Urbana High School
 HAROLD FREDERICK ENGELKING, M.S., Teacher in Mahomet Community High School
 OWEN A. FORDHAM, Teacher in Marseilles High School
 MAUDE B. FRY, Assistant Principal of Thornburn Junior High School
 PEARL GUNN, Teacher in Webber School
 HAL O. HALL, Principal of Belleville Township High School
 MARY F. HALL, Teacher in Champaign Senior High School
 CLARENCE HANOVER, Teacher in Warrenburg Community High School
 CLELIA HARLAND, B.S., Supervisor of Vocal Music in the Champaign Schools
 RUTH IRENE HARRIS, M.S., Principal of Webber School

* Resigned. ‡ Second semester. § Deceased.

ROY CLAIRE HAWLEY, A.M., Principal of Marseilles High School
MAUD DELANIE HOLLINGSHEAD, B.S., Principal of South Side School
THOMAS ALEXANDER HOOD, M.S., Principal of Fisher Community High School
MARTIN CURTIS HOWD, M.S., Principal of Urbana High School
ALICE ELIZABETH HYDE, B.S., Teacher in Colonel Wolfe School
MARYESTHER JACKSON, Principal of Lawhead School
VICTOR G. JEWELL, A.M., Principal of Tolono Community High School
MRS. LIZZIE DAVIS JOHNSON, A.M., Teacher in Lawhead School
FLOYD ENOS KING, M.S., Principal of Arcola Township High School
DONNABELLE LEWIS KIRBY, M.S., Teacher in Champaign Junior High School
MRS. ESTHER J. KRIGBAUM, B.Mus.Ed., Teacher in Thornburn Junior High School
AARON HAWTHORNE LAUCHNER, M.S., Principal of Thornburn Junior High School
MILDRED M. LAWSON, M.S., Teacher in Urbana High School
AVICE FERNE LEE, M.S., Principal of Colonel Wolfe School
L. F. LENTZ, B.S., Teacher in Belleville Township High School
BONNIE J. LEWIS, A.M., Supervisor of Art in the Champaign Schools
FRED MAJOR, B.S., Teacher in Champaign Senior High School
KARL LOUIS MASSANARI, A.M., Principal of Mahomet Community High School
JODA MCGAUGHEY, A.B., Teacher in Champaign Senior High School
JACK CLAUD MCILVOY, B.S., Teacher in Urbana High School
MRS. LIZZIE R. MCREYNOLDS, B.S., Principal of Lincoln School (Urbana)
EUGENE H. MELLON, Ed.D., Superintendent of Champaign Schools
BETTY JEAN MELLOR, A.M., Teacher in Champaign Senior High School
DICIE ANN MOORE, A.M., Teacher in Urbana High School
MRS. BERNELLE MOOT, Teacher in Urbana High School
LESTER R. MOYER, Ph.B., Director of Physical Education in Champaign Schools
ARTHUR C. MUNS, M.S., Principal of Warrenburg Community High School
M. B. PLATZ, Principal of Newton Community High School
HARLEY FRANCIS QUILLMAN, M.S., Principal of Pinckneyville Community High School
MRS. ALMA RIGNEY, B.Mus., Principal of Marquette School
MARSHALL J. SCOTT, A.M., Teacher in Fisher Community High School
VERRALLTON C. SHAUL, A.B., Teacher in Champaign Senior High School
RALPH ANDREW SHICK, M.S., Teacher in Thornburn Junior High School
JAMES LYLE SISK, A.M., Assistant Principal of Champaign Junior High School
ADA BEATRICE SMITH, M.S., Supervisor of Music and Art in Urbana Schools
MRS. LOIS SMITH, B.S., Teacher in Arcola Township High School
BELLE VINA SOUTH, B.S., Principal of Hays School
LEWIS STEPHENS, M.S., Supervisor of Physical Education in Urbana Schools
EARL G. STEVENS, Teacher in Urbana High School
BARBARA STIEGEMEYER, M.S., Principal of Lincoln School (Champaign)
MARJORIE STRONG, A.M., Teacher in Champaign Senior High School
ROY W. SWINDELL, A.M., Teacher in Champaign Senior High School
ALVAN TAYLOR, A.M., Teacher in Champaign Senior High School
J. ROBERT TAYLOR, M.S., Teacher in Champaign Junior High School
LOUIS TEMPLETON, Teacher in Pinckneyville Community High School
ARNOLD LEE THOMASSON, Ph.D., Principal of Champaign Junior High School
CHARLES A. TRIMBLE, M.S., Teacher in Champaign Junior High School
PAUL WALKER, Teacher in Marion Community High School
EVA LORENE WELLS, B.S., Teacher in South Side School
FLORENCE WILEY, Principal of Leal School
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- EVELYN FRANK, Ph.D., Assistant Professor of Mathematics
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- WILLIAM FRANK McCAUGHEY, M.S., Assistant Professor of Architecture‡

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Lecturers

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WINIFRED VIRGINIA BERGLUND, A.M., Instructor in Mathematics
BETTY JEAN BINDER, A.M., Instructor in English
LOIS ANN BRADWELL, B.S., Instructor in Mathematics
MRS. PRISCILLA PRICE BROMLEY, A.M., Instructor in Social Sciences
HEDIN BRONNER, A.M., Instructor in English
LOUIS BROUSSARD, A.M., Instructor in English
GLEAH D. BROWN, A.M., Instructor in English
EDWARD EVERETT BURR, B.F.A., Instructor in Art
JOAN ETHEL BYAM, A.M., Instructor in English
MRS. FERDINA JULIETTE CAPPARELLI, A.M., Instructor in Foreign Language
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MARJORIE LILLIAN CROFT, A.M., Instructor in Mathematics
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JOHN BERNARD FULLER, Ph.D., Instructor in Physics
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* Resigned. † First semester. ‡ Second semester.

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 ALLEN MELNICK DORFMAN, B.S., Assistant in Physical Education for Men
 DOROTHY A. EGGBRECHT, M.B.A., Assistant in Accountancy and Counselor in the Student Personnel Bureau
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 GLADYS MATTOON BREWER, M.S., Instructor in Social Sciences and Commerce and Business Administration
 EDNA LOUISA DRURY, A.M., Instructor in Spanish and English
 EMILIE VIRGINIA HAYNSWORTH, A.M., Instructor in Mathematics
 ALBERT M. JOHNSON, B.S., Instructor in Engineering Drawing and Physics

* Resigned. ‡ Second semester.

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 GLADYS EVA WEBBER, A.M., Instructor in Social Sciences
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 DAVID PIERCE MARBLE, M.S., Instructor in Chemistry
 HOWARD CECIL NELSON, M.S., Instructor in General Engineering Drawing
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 VIOLET EHRENBERG, A.M., Instructor in Humanities
 ELSIE MULLER, A.M., Instructor in Mathematics
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 GEORGE EDWARD JONES, A.M., Instructor in Humanities
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 ROBERT WILBUR THORNTON, B.S., Instructor in General Engineering Drawing
 JUNE BERNICE WYLLIE, A.M., Instructor in Humanities and Counselor in Student Welfare

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MRS. ELIZABETH RINEHART APPLETON, A.B., Assistant in Mathematics‡
 NORMAN R. ATWOOD, A.B., Assistant in English
 GARWOOD ABBOTT BRAUN, B.S., Assistant in Natural Sciences
 EUGENE CAIRO, A.M., Assistant in Spanish and Italian*
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 RICHARD EDWARD ROBINSON, B.S., Assistant in Natural Sciences‡
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* Resigned.

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- ARNOLD ALBERT ZIMMERMANN, D. ès S., Professor of Anatomy
- SAMUEL AZOR LEVINSON, M.D., Ph.D., Professor of Pathology, assigned to Medicine part time, and Director of the Hospital Laboratory
- HENRY GEORGE PONCHER, B.S., M.D., Professor of Pediatrics and Head of the Department in the College of Medicine
- CARLOS ISAAC REED, Ph.D., Professor of Physiology
- MILAN VACLAV NOVAK, Ph.D., M.D., Professor of Bacteriology and Public Health, and Head of the Department in the College of Medicine
- GRANVILLE ALLISON BENNETT, M.D., A.M., Professor of Pathology and Head of the Department
- OTTO SAPHIR, M.D., Clinical Professor of Pathology
- GEORGE JOHN RUKSTINAT, B.S., M.D., Professorial Lecturer in Pathology
- HUBERT WINSTON SMITH, M.B.A., LL.B., M.D., Professor of Legal Medicine
- ROGER ALLEN HARVEY, M.S., M.D., Professor of Radiology and Head of the Department
- JOHN MONROE SPENCE, D.D.S., M.S., Associate Professor of Operative Dentistry, Acting Head of the Department, and Acting Director of Dental Clinics
- DOUGLAS ARCHIBALD MACFADYEN, A.M., M.D., Professor of Biological Chemistry (Rush)
- BERNARD GEORGE SARNAT, M.D., D.D.S., M.S., Associate Professor of Oral and Maxillofacial Surgery, and Acting Head of the Department

Associate Professors

- OLAF BERGEIM, Ph.D., Associate Professor of Biological Chemistry
- ALEXANDER JOHN NEDZEL, M.D., M.S., Associate Professor of Pathology
- THEODORE CORNBLEET, M.D., Ph.D., Clinical Associate Professor of Dermatology
- ISADORE PAT BRONSTEIN, B.S., M.D., Associate Professor of Pediatrics

§ Deceased.

PARKE HARVEY SIMER, Ph.D., Associate Professor of Anatomy
 MRS. CARROLL LA FLEUR BIRCH, M.D., M.S., Associate Professor of Medicine
 MARCUS RAYNER CARO, B.S., M.D., Clinical Associate Professor of Dermatology
 HAROLD CARL WIGGERS, Ph.D., Associate Professor of Physiology
 ISRAEL DAVIDSOHN, M.D., Clinical Associate Professor of Pathology (Rush)
 CECIL ALEXANDER KRAKOWER, B.S., M.D., C.M., Associate Professor of Pathology
 WILLIAM BENHAM DOWNS, D.D.S., M.S., Associate Professor of Orthodontia
 HENRY JOHN DROBA, D.D.S., Associate Professor of Oral Surgery
 ROBERT HENRY KREHBIEL, Ph.D., Associate Professor of Anatomy
 MAURY MASSLER, D.D.S., M.S., Associate Professor of Pedodontia
 ELI OLECH, D.D.S., M.S., Associate Professor of Oral and Maxillofacial Surgery
 MINNIE OBOLER PERLSTEIN, B.S., M.D., Clinical Associate Professor of Dermatology
 MRS. NELL SNOW TALBOT, A.M., Associate Professor of Medical and Dental History,
 and Assistant to the Dean of the College of Dentistry
 GEORGE MILLES, Ph.G., M.D., Associate Professor of Pathology and Coordinator
 of Basic Sciences for Residents
 EDWARD CHARLES WACH, Ph.G., D.D.S., M.S., Associate Professor of Applied Materia
 Medica and Therapeutics
 LOUIS WILLIAM SCHULTZ, D.D.S., B.S., M.D., Clinical Associate Professor of Oral
 Surgery
 JOSEPH PETER WEINMANN, M.D., Associate Professor of Histology

Assistant Professors

ARTHUR GIDEON COLE, Ph.D., Assistant Professor of Biological Chemistry
 ELSIE GERLACH, D.D.S., Assistant Professor of Operative Dentistry and Superintendent
 of the Children's Clinic
 EDWARD JOHN KREJCI, D.D.S., Assistant Professor of Operative Dentistry, and Ex-
 aminer in the Admitting Clinic (on leave of absence)
 GUSTAV LEOPOLD ZECHEL, M.D., Assistant Professor of Anatomy, assigned to Surgery
 part time
 WALTER WILLIAM DALITSCH, D.D.S., B.S., M.D., Assistant Professor of Medicine (on
 leave of absence for war service)
 FRED NORMAN BAZOLA, B.S., D.D.S., Assistant Professor of Prosthetic Dentistry
 CLARENCE ALBERT JOHNSON, Ph.D., Assistant Professor of Biological Chemistry
 MARGOT ULLOA, B.S., D.D.S., Assistant Professor of Operative Dentistry, assigned to
 Oral Anatomy and Comparative Odontology part time
 KAY LEE THOMPSON, JR., D.D.S., Assistant Professor of Oral Surgery (Rush)
 RAYMOND CLIFFORD INGRAHAM, Ph.D., Assistant Professor of Physiology
 MILO BERNHARDT HATTENHAUER, D.D.S., Assistant Professor of Prosthetic Dentistry
 (on leave of absence beginning January 13, 1947)
 HERBERT PAUL STEINMEYER, D.D.S., M.S., Assistant Professor of Oral Pathology
 KENNETH WILMORE GRUNDSET, B.S., D.D.S., Assistant Professor of Clinical Dentistry
 and Examiner in the Admitting Clinic
 PHILIP JAMES MODJESKI, B.S., D.D.S., Assistant Professor of Prosthetic Dentistry
 NATHANIEL OGLESBY CALLOWAY, Ph.D., M.D., Clinical Assistant Professor of Medicine
 RICHARD HOLIC, B.S., D.D.S., Assistant Professor of Oral Anatomy and of Prosthetic
 Dentistry

Associates

MARSHALL FREDERICK GRUNWALD, D.D.S., M.S., Associate in Applied Materia Medica
 and Therapeutics
 EDGAR HERMAN ARTHUR KRAMP, D.D.S., M.S., Associate in Applied Materia Medica
 and Therapeutics

Instructors

ANITA MARIE ELLINGSON, R.N., Ph.B., Instructor in Applied Materia Medica and
 Therapeutics
 ANNA RIEKE, A.B., R.N., Instructor in Oral Surgery
 ERNEST W. MYER, D.D.S., M.S., Instructor in Orthodontia
 DAVID BERMAN, D.D.S., M.S., Instructor in Applied Materia Medica and Therapeutics
 JACOB ABRAHAM GLASSMAN, M.D., M.S., Instructor in Anatomy
 JAMES ALBERT GAGNON, D.D.S., M.S., Instructor in Histology and Oral Anatomy,
 assigned to the Admitting Clinic part time

MAX GRATZINGER, M.D., D.D.S., M.S., Instructor in Applied Materia Medica and Therapeutics
 WALDEMAR ARTHUR LINK, A.B., B.S., D.D.S., Instructor in Operative Dentistry
 WILLIAM IRWIN METZGER, M.S., Instructor in Bacteriology and Public Health*
 KENNETH CLINTON WASHBURN, B.S., D.D.S., Instructor in Operative Dentistry
 PAUL KRAUT WEICHELBAUM, M.D., M.S., Clinical Instructor in Dermatology
 ARTHUR ELFENBAUM, A.B., D.D.S., Instructor in Prosthetic Dentistry
 KENNETH CARL ROBBINS, Ph.D., Instructor in Biological Chemistry
 HARRY J. FOURNIER, M.D., Instructor in Anatomy
 ALTON WALLACE MOORE, D.D.S., Instructor in Orthodontia
 LADDIE JOSEPH KULHANEK, B.S., D.D.S., Instructor in Prosthetic Dentistry
 ERNEST LLOYD DCBRUL, D.D.S., Instructor in Oral and Maxillofacial Surgery
 ELMER ARTHUR ECKERT, B.S., D.D.S., Instructor in Prosthetic Dentistry
 WOODROW GLEN MOSS, M.S., Instructor in Physiology
 KENNETH PALMER SHARPE, B.S., D.D.S., Instructor in Operative Dentistry
 EARL WILEY RENFROE, D.D.S., M.S., Instructor in Orthodontia
 JULES BERMAN, B.S., D.D.S., Instructor in Operative Dentistry

Assistants

ROBERT ALFRED ATTERBURY, B.S., D.D.S., Assistant in Oral and Maxillofacial Surgery
 PHILIP BLOOM, M.S., D.D.S., Assistant in Prosthetic Dentistry
 GLEN EUGENE BONE, B.S., D.D.S., Assistant in Prosthetic Dentistry
 JUDSON JENNELLE CALHOUN, B.S., D.D.S., Assistant in Oral Surgery
 GEORGE WALTER DITTMAR, JR., A.B., B.S., D.D.S., Assistant in Prosthetic Dentistry
 FRANK CHARLES DUSEK, A.B., B.S., D.D.S., Assistant in Dentistry for Children
 MILTON BAER ENGEL, D.D.S., M.S., Research Assistant in Orthodontia
 HOWARD ELMER GILLETTE, A.B., B.S., D.D.S., Assistant in Oral and Maxillofacial Surgery
 JULES HAZELKORN, A.B., B.S., D.D.S., Assistant in Oral and Maxillofacial Surgery
 WALDEMAR JOSEPH KWICINSKI, B.S., D.D.S., Assistant in Prosthetic Dentistry
 ARTHUR MARC, B.S., D.D.S., Assistant in Operative Dentistry
 DONALD LUDDEN McELROY, D.D.S., M.S., Assistant in Applied Materia Medica and Therapeutics
 ARTHUR FRANK MOLAY, D.S.C., D.D.S., Assistant in Prosthetic Dentistry
 JOSEPH LEONARD MORROS, B.S., D.D.S., Assistant in Operative Dentistry
 WAYNE THOMAS NEAL, B.S., D.D.S., Assistant in Operative Dentistry
 MUTSUMI NOBE, Ph.C., M.S., Assistant in Biological Chemistry
 FRANCIS XAVIER PELKA, D.D.S., Assistant in Prosthetic Dentistry
 ROBERT VICTOR RIEMER, D.D.S., Assistant in Prosthetic Dentistry
 WALTER JACOV SEREDA, D.D.S., Assistant in Operative Dentistry
 HARRY ROBERT SHEPARD, B.S., D.D.S., Assistant in Applied Materia Medica and Therapeutics
 ROBERT BURNS UNDERWOOD, D.D.S., Assistant in Prosthetic Dentistry
 PETER ANTON WLODKOWSKI, D.D.S., Assistant in Oral Surgery
 HAROLD WILLIAM WOODSON, M.S., Assistant in Biological Chemistry

COLLEGE OF MEDICINE

Professors

JOHN BARLOW YOUMANS, M.S., M.D., Professor of Medicine, Dean of the College of Medicine, and Medical Director of the Research and Educational Hospital
 DAVID JOHN DAVIS, M.D., Ph.D., Professor of Pathology and Dean of the College of Medicine, *Emeritus*
 FREDERICK TICE, M.D., Professor of Medicine, *Emeritus*
 NORVAL HARVEY PIERCE, M.D., Professor of Laryngology, Rhinology, and Otolaryngology, and Head of the Department, *Emeritus*§
 CHARLES SUMNER BACON, Ph.B., M.D., D.Sc., Professor of Obstetrics, *Emeritus*
 WILLIAM ELLIOT GAMBLE, B.S., M.D., Professor of Ophthalmology, *Emeritus*
 JULIUS HAYS HESS, M.D., Professor of Pediatrics, *Emeritus*
 HUGH ALISTER McGUIGAN, Ph.D., M.D., Professor of Pharmacology, Materia Medica, and Therapeutics, *Emeritus*

* Resigned.

§ Deceased.

- WILLIAM HENRY WELKER, Ph.D., D.Sc., Professor of Biological Chemistry and Head of the Department
- NELSON MORTIMER PERCY, M.D., Professor of Clinical Surgery, *Emeritus*
- FRANCIS EUGENE SENEAR, M.D., M.S., Professor of Dermatology and Head of the Department
- ALBERT BACHEM, Ph.D., Professor of Biophysics
- FREDERICK HOWARD FALLS, M.D., M.S., Professor of Obstetrics and Gynecology, and Head of the Department
- GEORGE BORIS HASSIN, M.D., Professor of Neurology, *Emeritus*
- HENRY BASCOM THOMAS, B.S., M.D., Professor of Orthopaedic Surgery, *Emeritus*
- OTTO FREDERIC KAMPMEIER, Ph.D., M.D., Professor of Anatomy and Head of the Department
- ROBERT WOOD KEETON, M.S., M.D., Professor of Medicine and Head of the Department
- CHARLES HERBERT PHIFER, M.D., Clinical Professor of Surgery
- SIDNEY STRAUSS, A.B., M.D., Clinical Professor of Medicine, *Emeritus*
- PAUL LOUIS SCHROEDER, B.S., M.D., Professor of Criminology, Social Hygiene, and Medical Jurisprudence, and Head of the Department; Clinical Professor of Psychiatry; Superintendent of the Institute for Juvenile Research
- FRANCIS LOEFFLER LEDERER, B.S., M.D., Professor of Otolaryngology, Head of the Department, and Chief of Otolaryngological Services in the Illinois Eye and Ear Infirmary
- ERIC OLDBERG, M.D., Ph.D., Professor of Neurology and Neurological Surgery, and Head of the Department
- WALTER JOHN RICHARD CAMP, M.D., Ph.D., Professor of Pharmacology
- WARREN HENRY COLE, B.S., M.D., Professor of Surgery, Head of the Department, and Head of the Operating Room in the Research and Educational Hospital
- GEORGE EARLE WAKERLIN, Ph.D., M.D., Professor of Physiology and Head of the Department
- LEROY HENDRICK SLOAN, B.S., M.D., Clinical Professor of Medicine
- PERCIVAL BAILEY, Ph.D., M.D., Professor of Neurology and Neurological Surgery
- HALLARD BEARD, B.S., M.D., Professor of Ophthalmology
- GERHARDT VON BONIN, M.D., Professor of Anatomy
- ARNOLD ALBERT ZIMMERMANN, D. ès S., Professor of Anatomy
- SAMUEL AZOR LEVINSON, M.D., Ph.D., Professor of Pathology (Clinical Pathology), assigned to Medicine part time, and Director of the Hospital Laboratory
- SELIM WALKER McARTHUR, Ph.B., M.D., Clinical Professor of Surgery
- FRANCIS JOSEPH GERTY, B.S., M.D., Professor of Psychiatry and Head of the Department
- THOMAS SMITH JONES, B.F.A., Professor of Medical and Dental Illustration, and Head of the Department
- ARTHUR HAWLEY PARMELEE, A.B., M.D., Clinical Professor of Pediatrics (Rush)
- HENRY GEORGE PONCHER, B.S., M.D., Professor of Pediatrics and Head of the Department
- CARLOS ISAAC REED, Ph.D., Professor of Physiology
- JOSEPH LOUIS BAER, M.S., M.D., Clinical Professor of Obstetrics and Gynecology (Rush), *Emeritus*
- EDWARD VAIL LAPHAM BROWN, M.D., B.S., Rush Clinical Professor of Ophthalmology, *Emeritus*
- RALPH CRISMAN BROWN, B.S., M.D., Clinical Professor of Medicine (Rush), *Emeritus*
- CHARLES GILCHRIST DARLING, M.D., Clinical Professor of Ophthalmology (Rush), *Emeritus*
- VERNON CYRENIUS DAVID, A.B., M.D., Rush Clinical Professor of Surgery
- CARL BRADEN DAVIS, A.B., M.D., Professor of Surgery (Rush), *Emeritus*
- JOHN FAVILL, A.B., M.D., Clinical Professor of Neurology (Rush)§
- LEE CONNELL GATEWOOD, A.M., M.D., Clinical Professor of Medicine (Rush)
- CLIFFORD GROSSELLE GRULEE, A.M., M.D., LL.D., Rush Clinical Professor of Pediatrics
- DANIEL BERNARD HAYDEN, A.M., M.D., Clinical Professor of Otolaryngology (Rush)
- NOBLE SPROAT HEANEY, A.B., M.D., D.Sc., Rush Clinical Professor of Obstetrics and Gynecology, *Emeritus*
- ROBERT HARRY HERBST, M.D., Clinical Professor of Urology (Rush), *Emeritus*

§ Deceased.

- JAMES BRYAN HERRICK, M.D., A.M., D.Sc., LL.D., Professor of Medicine (Rush),
Emeritus
- RUDOLPH W. HOLMES, M.D., Professor of Obstetrics and Gynecology (Rush), *Emeritus*
- ARCHIBALD L. HOYNE, A.B., B.S., M.D., Clinical Professor of Pediatrics (Rush),
Emeritus
- ERNEST EDWARD IRONS, M.D., Ph.D., Rush Clinical Professor of Medicine, *Emeritus*
- AARON ELIAS KANTER, M.S., M.D., Clinical Professor of Obstetrics and Gynecology
(Rush)
- HERMAN LOUIS KRETSCHMER, Ph.G., M.D., D.Sc., Clinical Professor of Urology (Rush)
- EDWIN MORTON MILLER, A.B., M.D., Clinical Professor of Surgery (Rush)
- WILLIAM FRANKLIN MONCREIFF, M.S., M.D., Clinical Professor of Ophthalmology
(Rush)
- ALBERT HERR MONTGOMERY, A.B., M.D., Clinical Professor of Surgery (Rush)
- OLIVER SAMUEL ORMSBY, M.D., Rush Professor of Dermatology, *Emeritus*
- WILBER E. POST, Ph.B., M.D., Rush Clinical Professor of Medicine, *Emeritus*
- GEORGE ELMER SHAMBAUGH, SR., Ph.B., M.D., Professor of Laryngology, Rhinology,
and Otology (Rush), *Emeritus*
- KELLOGG SPEED, B.S., M.D., Clinical Professor of Surgery (Rush)
- JOHN CLARENCE WEBSTER, A.B., M.D., D.Sc., LL.D., Professor of Obstetrics and
Gynecology (Rush), *Emeritus*
- ROLLIN TURNER WOODYATT, B.S., M.D., Clinical Professor of Medicine (Rush), *Emeritus*
- PAUL C. BUCY, M.S., M.D., Professor of Neurology and Neurological Surgery
- ROLAND PARKS MACKAY, A.B., M.D., Professor of Neurology
- JAMES HERBERT MITCHELL, B.S., M.D., Rush Clinical Professor of Dermatology
- OTTO SAPHIR, M.D., Clinical Professor of Pathology
- FRANZ GABRIEL ALEXANDER, A.B., M.D., Clinical Professor of Psychiatry
- FREMONT AUGUSTUS CHANDLER, B.S., M.D., Professor of Orthopaedic Surgery, Head
of the Department, and Director of the Illinois Surgical Institute for Children
- EDMUND F. FOLEY, B.S., M.D., Professor of Medicine
- ELLIS BENJAMIN FREILICH, M.D., Clinical Professor of Medicine
- HARRY SEARLS GRADLE, A.B., M.D., Professor of Ophthalmology, *Emeritus*, and Di-
rector of the Illinois Eye and Ear Infirmary (on leave of absence)
- RALPH C. HAMILL, Ph.B., M.D., Clinical Professor of Psychiatry (Rush), *Emeritus*
- FRANK BRAZZIL KELLY, B.S., M.D., Clinical Professor of Medicine (Rush)
- JACOB MEYER, M.D., M.S., Clinical Professor of Medicine (on leave of absence)
- MILAN VACLAV NOVAK, Ph.D., M.D., Professor of Bacteriology and Public Health,
and Head of the Department
- GEORGE JOHN RUKSTINAT, B.S., M.D., Professorial Lecturer in Pathology
- WILLIAM ALEXANDER THOMAS, Ph.B., B.S., M.D., Clinical Professor of Medicine
(Rush)
- WILLARD OWEN THOMPSON, A.B., M.D., Clinical Professor of Medicine (Rush)
- ROBERT GEORGE KESEL, D.D.S., M.S., Professor of Applied Materia Medica and Thera-
peutics, and Head of the Department in the College of Dentistry
- GRANVILLE ALLISON BENNETT, M.D., A.M., Professor of Pathology, Head of the De-
partment, and Senior Pathologist in the Research and Educational Hospital
- AARON ARKIN, M.D., Ph.D., Clinical Professor of Medicine (Rush)
- CARL CURT PFEIFFER, Ph.D., M.D., Professor of Pharmacology and Head of the De-
partment
- LOREN WILLIAM AVERY, A.B., M.D., Clinical Professor of Neurology (Rush)
- LOUIS BOTHMAN, B.S., M.D., Clinical Professor of Ophthalmology
- WILLIAM HENDERSON CASSELS, M.D., Professor of Anesthesia in charge of the Division
- ARTHUR REUBEN COOPER, Ph.D., M.D., Professor of Anatomy
- JAMES BRYAN EYERLY, B.S., M.D., Clinical Professor of Medicine (Rush)
- ABRAHAM RISEL HOLLENDER, M.S., M.D., Professor of Otolaryngology, *Emeritus*
- WARREN STURGIS McCULLOCH, A.M., M.D., Professor of Psychiatry
- ISAAC SCHOUR, D.D.S., Ph.D., D.Sc., Professor of Histology, Head of the Department,
and Associate Dean of the College of Dentistry in charge of Postgraduate Studies
- THEODORE JOHN WACHOWSKI, B.S., M.D., Associate Professor of Radiology and Chief
of X-ray Therapy in the Outpatient Tumor Clinic of the Research and Educational
Hospital
- CHARLES BERNARD PUESTOW, M.D., Ph.D., Professor of Surgery
- GEORGE MARVIN HASS, M.D., Professor of Pathology (Rush)

DOUGLAS ARCHIBALD MACFADYEN, A.M., M.D., Professor of Biological Chemistry (Rush)
 OSCAR EUGENE NADEAU, B.S., M.D., Clinical Professor of Surgery
 HUBERT WINSTON SMITH, M.B.A., LL.B., M.D., Professor of Legal Medicine
 DAVID SHAKOW, Ph.D., Professor of Psychiatry
 ROGER ALLEN HARVEY, M.S., M.D., Professor of Radiology and Head of the Department
 ANDREW CONWAY IVY, Ph.D., M.D., Distinguished Professor of Physiology
 HERBERT KOEPP-BAKER, Ph.D., Professor of Audiology and Director of Speech and Hearing Rehabilitation
 HEYWORTH NAYLOR SANFORD, Ph.G., B.S., M.D., Clinical Professor of Pediatrics (Rush)
 LATHAN AUGUSTUS CRANDALL, JR., Ph.D., M.D., Professorial Lecturer in Physiology
 CLARENCE WEINERT MUEHLBERGER, Ph.D., Professorial Lecturer in Pharmacology

Associate Professors

FRANK D. CHAUVET, M.D., Clinical Associate Professor of Medicine
 ERNEST SISSON MOORE, Ph.B., M.D., Associate Professor of Medicine, *Emeritus*
 OLAF BERGELM, Ph.D., Associate Professor of Biological Chemistry
 ISADORE PILOT, M.D., B.S., Associate Professor of Medicine
 BENJAMIN GOLDBERG, M.D., Clinical Associate Professor of Medicine, *Emeritus*
 SAMUEL PERLSTEIN, M.D., Clinical Associate Professor of Medicine
 ALEXANDER JOHN NEDZEL, M.D., M.S., Associate Professor of Pathology
 GEORGE JOSEPH MOHR, B.S., M.D., Clinical Associate Professor of Criminology
 ARRIE BAMBERGER, B.S., M.D., Clinical Associate Professor of Surgery
 RUSSELL DORR HERROLD, B.S., M.D., Associate Professor of Surgery
 JOHN DOUGLAS KOUCKY, M.D., M.S., Clinical Associate Professor of Surgery
 FRANK B. LUSK, A.M., M.D., Clinical Associate Professor of Medicine
 LINDON SEED, M.D., M.S., Clinical Associate Professor of Surgery
 GÉZA DE TAKATS, M.D., M.Surg., Clinical Associate Professor of Surgery
 WILLARD VAN HAZEL, A.B., M.D., Clinical Associate Professor of Surgery
 FRANK JOSEPH JURKA, M.D., Clinical Associate Professor of Surgery
 WILLIAM HARCOURT BROWNE, B.S., M.D., Clinical Associate Professor of Obstetrics and Gynecology
 THEODORE CORNBLEET, M.D., Ph.D., Clinical Associate Professor of Dermatology
 YNGVE JORANSON, A.B., B.S., M.D., Associate Professor of Anatomy, *Emeritus*
 LOUIS WILLIAM SCHULTZ, D.D.S., B.S., M.D., Clinical Associate Professor of Oral Surgery
 HANS BRUNNER, M.D., Associate Professor of Otolaryngology
 ABRAHAM ADOLPH LOW, M.D., Clinical Associate Professor of Psychiatry
 THOMAS MORTON FRENCH, A.B., M.D., Clinical Associate Professor of Criminology
 WILLIAM HENRY HAZLETT, M.D., Clinical Associate Professor of Surgery
 WILL FERSON LYON, A.B., M.D., Clinical Associate Professor of Surgery
 LEONARD FRED WEBER, M.D., Clinical Associate Professor of Dermatology
 ISADORE PAT BRONSTEIN, B.S., M.D., Associate Professor of Pediatrics
 PARKE HARVEY SIMER, Ph.D., Associate Professor of Anatomy
 EDWARD DUDLEY ALLEN, B.S., M.D., Clinical Associate Professor of Obstetrics and Gynecology (Rush)
 THOMAS DYER ALLEN, A.B., M.D., Clinical Associate Professor of Ophthalmology (Rush) and Attending Ophthalmologist in the Illinois Eye and Ear Infirmary
 ELVEN JAMES BERKHEISER, A.B., M.D., Clinical Associate Professor of Orthopaedic Surgery (Rush)
 LEO KEMPF CAMPBELL, B.S., M.D., Clinical Associate Professor of Medicine (Rush)
 LOUIS THOMAS CURRY, B.S., M.D., Clinical Associate Professor of Otolaryngology (Rush)
 FRANCIS LEO FORAN, M.S., M.D., Clinical Associate Professor of Medicine (Rush)
 EARLE BLOODGOOD FOWLER, B.S., M.D., Clinical Associate Professor of Ophthalmology (Rush)
 WILLIAM GEORGE HIBBS, B.S., M.D., Clinical Associate Professor of Medicine (Rush)
 HARRY RICHARD HOFFMAN, B.S., M.D., Clinical Associate Professor of Psychiatry, Executive Officer of the Neuropsychiatric Institute, and State Alienist
 BERTHA ANN KLIEN, M.D., Clinical Associate Professor of Ophthalmology (Rush)
 RALPH AUGUST KORDENAT, M.S., M.D., Clinical Associate Professor of Surgery

- MRS. MARY MULCAHY LYONS, M.D., Clinical Associate Professor of Anesthesia (Rush)
 WILLIAM DUNCAN McNALLY, A.B., M.D., Clinical Associate Professor of Medicine (Rush)
- EVANS WILLIAM PERNOKIS, M.D., Clinical Associate Professor of Medicine (Rush)
 SIDNEY A. PORTIS, B.S., M.D., Clinical Associate Professor of Medicine (Rush)
 DAVID B. ROTMAN, M.D., Clinical Associate Professor of Psychiatry
 HOWARD MARTIN SHEAFF, Ph.D., M.D., Clinical Associate Professor of Medicine (Rush)
 JULIUS LEO SPIVACK, M.D., LL.D., Clinical Associate Professor of Surgery
 FAY HUFFMAN SQUIRE, A.B., M.D., Clinical Associate Professor of Radiology (Rush)
 FRANCIS HOWE STRAUS, B.S., M.D., Clinical Associate Professor of Surgery (Rush)
 RALPH WALDO TRIMMER, M.D., Clinical Associate Professor of Medicine (Rush)
 ROGER THROOP VAUGHAN, Ph.B., M.D., Clinical Associate Professor of Surgery (Rush),
Emeritus
- ADRIEN VERBRUGGHEN, B.M., Ch.M., M.S., Clinical Associate Professor of Neurological
 Surgery (Rush), assigned to Anatomy part time
- ROBERT VON DER HEYDT, M.D., Associate Professor of Ophthalmology (Rush),
Emeritus
- THOMAS GERVAESE WALSH, A.B., M.D., Clinical Associate Professor of Medicine (Rush) §
 CHARLES GRAFTON WELLER, B.S., M.D., Clinical Associate Professor of Urology (Rush)
 FRED WILLIAM HARK, B.S., M.D., Associate Professor of Orthopaedic Surgery
 ISRAEL DAVIDSOHN, M.D., Clinical Associate Professor of Pathology (Rush)
 HILLIER LOCKE BAKER, B.S., M.D., Clinical Associate Professor of Surgery (Rush)
 MRS. CARROLL LAFLEUR BIRCH, M.D., M.S., Associate Professor of Medicine
 HUGH THOMPSON CARMICHAEL, M.D., C.M., M.S., Associate Professor of Psychiatry
 MARCUS RAYNER CARO, B.S., M.D., Clinical Associate Professor of Dermatology
 MICHAEL HIGGINS EBERT, A.B., M.D., Clinical Associate Professor of Dermatology
 (Rush)
- CLARK WYLIE FINNERUD, B.S., M.D., Clinical Associate Professor of Dermatology
 (Rush)
- PETER CLEMENS KRONFELD, M.D., Associate Professor of Ophthalmology, Chief of
 Ophthalmological Services and Acting Chief of Staff in the Illinois Eye and Ear
 Infirmary
- LADISLAS JOSEPH MEDUNA, M.D., Associate Professor of Psychiatry
 RUDOLPH JUSTUS EMANUEL ODEN, A.B., M.D., D.Sc., Clinical Associate Professor of
 Surgery
- DAVID MORTIMER OLKON, M.D., A.M., Associate Professor of Psychiatry, *Emeritus*
 ISIDORE A. RABENS, M.S., M.D., Clinical Associate Professor of Medicine
 OSCAR BENJAMIN RAGINS, M.D., M.S., Clinical Associate Professor of Medicine
 HOWARD JOHN SHAUGHNESSY, Ph.D., Associate Professor of Bacteriology and Public
 Health
- ALFRED P. SOLOMON, A.B., M.D., Clinical Associate Professor of Psychiatry
 EUGENE FAGAN TRAUT, B.S., M.D., Clinical Associate Professor of Medicine (Rush)
 BEATRICE DOROTHY WADE, A.B., O.T.R., Associate Professor and Director of Occupa-
 tional Therapy
- HAROLD CARL WIGGERS, Ph.D., Associate Professor of Physiology
 FREDERIC ANDREWS GIBBS, A.B., M.D., Associate Professor of Psychiatry
 CHESTER WILLIAM DARROW, Ph.D., Clinical Associate Professor of Criminology
 NORRIS JULIUS HECKEL, A.B., M.D., Clinical Associate Professor of Urology (Rush)
 CECIL ALEXANDER KRAKOWER, B.S., M.D., C.M., Associate Professor of Pathology and
 Associate Pathologist in the Research and Educational Hospital
 EARL RANDALL LOEW, Ph.D., Associate Professor of Pharmacology
 ALFRED LEIMDORFER, M.D., Associate Professor of Psychiatry and Research Associate in
 Pharmacology
- ADOLPH ROSTENBERG, JR., A.B., M.D., C.M., Associate Professor of Dermatology and
 Associate Director of Clinical Investigation in the Allergy Research Unit
- CARL APPLE, B.S., M.D., Clinical Associate Professor of Ophthalmology
 RICHARD LEOS JENKINS, A.B., M.D., Clinical Associate Professor of Psychiatry
 ROBERT HENRY KREHBIEL, Ph.D., Associate Professor of Anatomy
 BEN WILLIAM LICHTENSTEIN, M.D., M.S., Associate Professor of Neurology
 MINNIE OBOLER PERLSTEIN, B.S., M.D., Clinical Associate Professor of Dermatology
 BEN ZION RAPPAPORT, M.D., M.S., Clinical Associate Professor of Medicine
 HIRAM JASON SMITH, M.D., Clinical Associate Professor of Ophthalmology
 OLIVER EDMOND VAN ALYEA, M.D., Clinical Associate Professor of Otolaryngology

- RICHARD WATKIN WATKINS, B.S., M.D., Clinical Associate Professor of Otolaryngology (Rush)
- FORD KIMMEL HICK, M.D., Ph.D., Associate Professor of Medicine
- PAUL WEBB GREELEY, A.B., M.D., Clinical Associate Professor of Medicine
- EARL EDWIN KLEINSCHMIDT, M.S., M.D., Dr.P.H., Associate Professor of Bacteriology and Public Health
- CHESTER CHAPPELL GUY, B.S., M.D., Clinical Associate Professor of Surgery
- CLAUDE NEEDHAM LAMBERT, M.D., M.S., Associate Professor of Orthopaedic Surgery
- CARLO SALVADORE SCUDERI, M.D., Ph.D., Associate Professor of Surgery
- CORNELIUS WILLIAM VERMEULEN, A.B., M.D., Associate Professor of Surgery
- ISIDORE GERSH, Ph.D., Associate Professor of Pathology
- GEORGE MILLES, Ph.G., M.D., M.S., Associate Professor of Pathology and Coordinator of Basic Sciences for Residents
- EDWARD BUCKMAN, B.S., M.D., Clinical Associate Professor of Urology (Rush)
- JOHN EMERSON KEMPF, A.B., M.D., Associate Professor of Bacteriology and Public Health
- JOSEPH HENRY KIEFER, B.S., M.D., Associate Professor of Urology
- JAMES WESLEY MERRICKS, JR., A.B., B.S., M.D., Clinical Associate Professor of Urology (Rush)
- DONALD ALLAN ROBERT MORRISON, B.S., M.D., Clinical Associate Professor of Psychiatry
- HILGER PERRY JENKINS, B.S., M.D., Clinical Associate Professor of Surgery
- ROBERT MANOAH KARK, A.B., Clinical Associate Professor of Medicine
- KLAUS ROBERT W. UNNA, M.D., Associate Professor of Pharmacology
- HERBERT RICHARD KOBES, A.B., M.D., M.P.H., Clinical Associate Professor of Pediatrics

Assistant Professors

- JOHN MICHAEL LANG, M.D., Assistant Professor of Obstetrics and Gynecology, *Emeritus*
- LESTER EDWARD BOWER, A.B., M.D., Clinical Assistant Professor of Pediatrics
- ISADORE BERNHARD DIAMOND, M.D., Assistant Professor of Neurology, *Emeritus*
- WALTER CHARLES HAMMOND, M.D., Clinical Assistant Professor of Obstetrics and Gynecology, *Emeritus*
- FRANK LEE STONE, M.D., Assistant Professor of Obstetrics and Gynecology, *Emeritus*
- FRANKLIN SAMUEL WILSON, Ph.G., M.D., Assistant Professor of Medicine, *Emeritus*
- ABRAHAM FAE LASH, M.D., Ph.D., Clinical Assistant Professor of Obstetrics and Gynecology
- DUANE WILLARD PROPST, A.B., B.S., M.D., Clinical Assistant Professor of Medicine
- ALBERT VANDERKLOOT, M.D., Clinical Assistant Professor of Medicine
- FRANK GEORGE MURPHY, B.S., M.D., Clinical Assistant Professor of Orthopaedic Surgery
- ARTHUR GIDEON COLE, Ph.D., Assistant Professor of Biological Chemistry
- CHARLES NEWBERGER, B.S., M.D., Assistant Professor of Obstetrics and Gynecology, *Emeritus*
- MICHAEL HENRY STREICHER, M.S., M.D., Assistant Professor of Medicine
- ROY GILMORE BARRICK, M.D., M.H.D., Clinical Assistant Professor of Criminology
- WALTER HENRY THEOBALD, B.S., M.D., Clinical Assistant Professor of Otolaryngology
- HUGO OTTO DEUSS, B.S., M.D., Clinical Assistant Professor of Medicine
- THOMAS GORDON HULL, Ph.D., Assistant Professor of Bacteriology and Public Health
- GUSTAV LEOPOLD ZECHEL, M.D., Assistant Professor of Anatomy, assigned to Surgery part time
- WALTER WILLIAM DALITSCH, D.D.S., B.S., M.D., Assistant Professor of Medicine (on leave of absence for war service)
- HAROLD IRVING MEYER, M.D., M.S., Clinical Assistant Professor of Surgery
- SHERMAN LAWRENCE SHAPIRO, B.S., M.D., Clinical Assistant Professor of Otolaryngology
- BENJAMIN MORRIS GASUL, M.D., M.S., Clinical Assistant Professor of Pediatrics
- MINAS JOANNIDES, M.D., M.S., Clinical Assistant Professor of Surgery
- JERRY JOSEPH KEARNS, B.S., M.D., Clinical Assistant Professor of Pathology
- ALFRED JULIAN KOBAK, M.D., M.S., Clinical Assistant Professor of Obstetrics and Gynecology
- HARRY LEICHENGER, B.S., M.D., Clinical Assistant Professor of Pediatrics
- BENJAMIN MORDECAI LEVIN, B.S., M.D., Clinical Assistant Professor of Pediatrics

- RICHARD A. LIVENDAHN, B.S., M.D., Clinical Assistant Professor of Obstetrics and Gynecology
- LOUIS FELDMAN, B.S., M.D., Clinical Assistant Professor of Medicine
- SAMUEL JULIAN HOFFMAN, B.S., M.D., Clinical Assistant Professor of Pediatrics
- HERBERT ELI McDANIELS, Ph.D., Assistant Professor of Bacteriology and Public Health
- SOL ROY ROSENTHAL, M.D., Ph.D., Assistant Professor of Bacteriology and Public Health (on leave of absence for war service)
- CLARENCE ALBERT JOHNSON, Ph.D., Assistant Professor of Biological Chemistry
- LOUIS ROBERT LIMARZI, M.D., M.S., Assistant Professor of Medicine
- DAVID SOLOMON BEILIN, B.S., M.D., Clinical Assistant Professor of Radiology
- BERT IRA BEVERLY, A.M., M.D., Clinical Assistant Professor of Pediatrics (Rush)
- HARRY BOYSEN, B.S., M.D., Clinical Assistant Professor of Obstetrics and Gynecology (Rush)
- PAUL ANDREW CAMPBELL, B.S., M.D., Clinical Assistant Professor of Otolaryngology (Rush)
- JAY BAILEY CARTER, M.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- THOMAS COTTRELL, M.D., Clinical Assistant Professor of Urology (Rush)
- MORRIS FISHEIN, B.S., M.D., D.Pharm., Clinical Assistant Professor of Medicine (Rush)
- FREDERICK OLAF FREDRICKSON, M.D., Assistant Professor of Medicine (Rush), *Emeritus*
- EARLE GRAY, B.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- WILLIAM HENRY HAINES, B.S., M.D., Clinical Assistant Professor of Psychiatry
- BENJAMIN H. HILKEVITCH, M.D., Clinical Assistant Professor of Medicine (Rush)
- MAX MARTIN JACOBSON, B.S., M.D., Clinical Assistant Professor of Ophthalmology (Rush)
- ARTHUR HERMAN KLAWANS, B.S., M.D., Clinical Assistant Professor of Obstetrics and Gynecology (Rush)
- ALVA ALLAN KNIGHT, B.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- STANLEY EDWARD LAWTON, B.S., M.D., Clinical Assistant Professor of Surgery (Rush)
- SIDNEY OLDER LEVINSON, B.S., M.D., Clinical Assistant Professor of Pediatrics
- MEYER RAY LICHTENSTEIN, M.D., M.S., Clinical Assistant Professor of Medicine
- CLAYTON JACKSON LUNDY, M.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- ROBERT PRESTON MACFATE, Ch.E., Ph.D., Assistant Professor of Pathology (Clinical Pathology) and Assistant Director of the Hospital Laboratory
- FOSTER LAMONT McMILLAN, B.S., M.D., Clinical Assistant Professor of Surgery
- CHARLES DUSTIN PARKER, B.S., M.D., Clinical Assistant Professor of Urology (Rush)
- FRED OWEN PRIEST, A.B., M.D., Clinical Assistant Professor of Obstetrics and Gynecology (Rush)
- THOMAS PAINE SALTIEL, B.S., M.D., Clinical Assistant Professor of Pediatrics
- GORDON HILBERT SCOTT, M.D., Clinical Assistant Professor of Otolaryngology (Rush)
- MRS. ELIZABETH KALES STRAUS, A.B., M.D., Clinical Assistant Professor of Medicine (Rush) (on leave of absence for the year)
- CHARLES KLAUS STULIK, Ph.G., Ph.C., B.S., M.D., Clinical Assistant Professor of Pediatrics (Rush)
- FRANK VICTOR THEIS, B.S., M.D., Clinical Assistant Professor of Surgery (Rush)
- LINDEN JOSEPH WALLNER, B.S., M.D., Clinical Assistant Professor of Otolaryngology (Rush)
- WILLARD LEO WOOD, M.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- LEWIS WHEELER WOODRUFF, B.S., M.D., Clinical Assistant Professor of Medicine (Rush)
- Harold Carl Struck, Ph.D., Assistant Professor of Pharmacology*
- DISRAELI WILLIAM KOBAK, M.D., Clinical Assistant Professor of Medicine (Rush)
- EUGENE ISIDORE FALSTEIN, B.S., M.D., Clinical Assistant Professor of Criminology
- MRS. BEULAH CHAMBERLAIN BOSSELMAN, A.B., M.D., Assistant Professor of Psychiatry
- PAUL HENRY HOLINGER, M.S., M.D., Assistant Professor of Otolaryngology
- JAMES RAYMOND KLEIN, Ph.D., Assistant Professor of Biological Chemistry and of Psychiatry, and Biochemist
- MRS. IRENE CASE SHERMAN, Ph.D., M.D., Assistant Professor of Psychiatry
- DANELY PHILIP SLAUGHTER, B.S., M.D., Assistant Professor of Surgery, and Director of the Outpatient Tumor Clinic of the Research and Educational Hospital
- CARL OSCAR GOTTFRIED ALMQUIST, B.S., M.D., Clinical Assistant Professor of Surgery

* Resigned.

- CRAIG DUNN BUTLER, B.S., M.D., Clinical Assistant Professor of Pediatrics (Rush)
 NOAH FOX, B.S., M.D., Clinical Assistant Professor of Otolaryngology
 MAX KENNETH HORWITT, Ph.D., Assistant Professor of Biological Chemistry
 GEORGE SHAYNIN LIVINGSTON, M.S., M.D., Clinical Assistant Professor of Otolaryngology
- JACOB PASKIND, M.D., Clinical Assistant Professor of Psychiatry
 ISRAEL RONALD SONENTHAL, M.D., M.S., Clinical Assistant Professor of Psychiatry
 IRWIN G. SPIESMAN, B.S., M.D., Clinical Assistant Professor of Otolaryngology
 FREDERICK CRIST LENDRUM, M.D., Ph.D., Assistant Professor of Medicine and Health Officer
- JOSEPH CYRUS RHEINGOLD, M.D., Ph.D., Clinical Assistant Professor of Psychiatry
 FRANK WESLEY ALLIN, A.M., M.D., Assistant Professor of Pediatrics (Rush),
Emeritus
- LEO E. AMTMAN, B.S., M.D., Clinical Assistant Professor of Medicine
 WILLIAM S. BOIKAN, M.D., M.S., Clinical Assistant Professor of Medicine
 SAMUEL B. BRODER, M.D., M.S., Clinical Assistant Professor of Psychiatry
 STUYVESANT BUTLER, Ph.B., M.D., Clinical Assistant Professor of Medicine (Rush)
 JOHN ALEXANDER GARDINER, A.M., B.M., Clinical Assistant Professor of Medicine (Rush)
- RAYMOND CLIFFORD INGRAHAM, Ph.D., Assistant Professor of Physiology
 AARON BAKER KENDRICK, Ph.D., Assistant Professor of Medicine
 SAMUEL MORDECAI MORWITZ, B.S., M.D., Clinical Assistant Professor of Otolaryngology
- MORRIS LOUIS PARKER, B.S., M.D., Clinical Assistant Professor of Surgery
 ARTHUR SOPHUS JUUL PETERSEN, B.S., M.D., Assistant Professor of Radiology and Radiologist
- JOHN TODD REYNOLDS, M.D., M.S., Clinical Assistant Professor of Surgery
 SAMUEL HENRY ROSENBLUM, B.S., M.D., Clinical Assistant Professor of Medicine
 IRVING TREIGER, B.S., M.D., Clinical Assistant Professor of Medicine (Rush)
 FREDERICK STEIGMANN, M.D., M.S., Assistant Professor of Medicine
 JOHN MICHAEL DORSEY, B.S., M.D., Clinical Assistant Professor of Surgery (Rush)
 NOAH DANIEL FABRICANT, M.D., M.S., Clinical Assistant Professor of Otolaryngology
 EDWARD A. PISZCZEK, B.S., M.D., M.P.H., Assistant Professor of Bacteriology and Public Health
- JAMES CLARENCE PLAGGE, Ph.D., Assistant Professor of Anatomy
 JOHN VAN PROHASKA, B.S., M.D., Clinical Assistant Professor of Surgery
 EARL GARSIDE, M.D., M.S., Clinical Assistant Professor of Surgery
 LOUIS JOSEPH HALPERN, B.S., M.D., Clinical Assistant Professor of Pediatrics
 GEORGE FRANCIS FORSTER, Ph.D., Assistant Professor of Bacteriology and Public Health
 CARL IRENEUS, JR., M.D., M.S., Clinical Assistant Professor of Surgery
 ESTHER MEYER, Ph.G., Ph.D., Assistant Professor of Bacteriology and Public Health
 GEORGE HENRY REZEK, M.D., M.S., Clinical Assistant Professor of Obstetrics and Gynecology
- ROY OTIS RISER, B.S., M.D., Clinical Assistant Professor of Ophthalmology
 RALPH SPAETH, A.B., M.D., Assistant Professor of Pediatrics
 WILMA ALLENE TROXEL, A.M., Assistant Professor of Library Science and Librarian in the Quine Library of Medical Sciences
- FRANK WOJNIAK, M.D., Clinical Assistant Professor of Otolaryngology (Rush)
 JOHN ROBERT WOLFF, M.D., M.S., Clinical Assistant Professor of Obstetrics and Gynecology
- BENJAMIN DAVIS BRAUN, A.B., B.S., M.D., Clinical Assistant Professor of Radiology
 AUDREY LAGERQUIST WILSON, B.S., M.D., Clinical Assistant Professor of Radiology
 HYMAN HARRY GOLDSTEIN GARNER, B.S., M.D., Clinical Assistant Professor of Psychiatry
 ARTHUR ELMORE DIGGS, A.B., M.D., Clinical Assistant Professor of Surgery (Rush)
 EGBERT HOWARD FELL, A.B., M.D., Clinical Assistant Professor of Surgery (Rush), assigned to Anatomy part time
- RICHARD KENNEDY GILCHRIST, B.S., M.D., Clinical Assistant Professor of Surgery (Rush), assigned to Anatomy part time
- ALFRED CAMPBELL LEDOUX, M.D., Clinical Assistant Professor of Radiology
 JOHN HURST OLWIN, A.B., M.D., Clinical Assistant Professor of Surgery (Rush)
 DORRIN FRED RUDNICK, B.S., M.D., Clinical Assistant Professor of Urology
 MITCHELL ABRAHAM SPELLBERG, M.D., M.S., Clinical Assistant Professor of Medicine
 EVERETT LEE STROHL, M.D., M.S., Clinical Assistant Professor of Surgery

- ALCIDE LOUIS ROSI, B.S., M.D., Clinical Assistant Professor of Surgery (Rush)
 HYMAN SAUL SUGAR, A.B., M.D., Clinical Assistant Professor of Ophthalmology and
 Associate Ophthalmologist in the Illinois Eye and Ear Infirmary
 LESTER SNOW KING, A.B., M.D., Clinical Assistant Professor of Pathology
 SAMUEL HENRY KRAINES, B.S., M.D., Clinical Assistant Professor of Psychiatry
 HERBERT PAUL STEINMEYER, D.D.S., M.S., Assistant Professor of Oral Pathology
 JOHN MILLS BROOKHART, Ph.D., Assistant Professor of Physiology*
 KALMAN GYARFAS, M.D., Assistant Professor of Psychiatry
 MRS. MARTHA RUBIN FOLK, M.D., Clinical Assistant Professor of Ophthalmology
 VINCENT CHARLES FREDA, B.S., M.D., Clinical Assistant Professor of Obstetrics and
 Gynecology
 MORTON IRVIN GROSSMAN, M.D., Ph.D., Assistant Professor of Physiology
 WESLEY AXEL GUSTAFSON, M.D., Assistant Professor of Neurology and Neurological
 Surgery
 FREDERICK JOHN ROOS, M.D., Clinical Assistant Professor of Obstetrics and Gynecology
 MAURICE FRANZ SNITMAN, B.M., Assistant Professor of Otolaryngology
 DAVID IRVIN ABRAMSON, M.D., Clinical Assistant Professor of Medicine
 JAMES WILSON CLARK, B.S., M.D., Assistant Professor of Ophthalmology
 W. ALLEN CONROY, M.D., Clinical Assistant Professor of Anesthesia
 STANTON ABELS FRIEDBERG, A.B., M.D., Clinical Assistant Professor of Otolaryngology
 (Rush)
 FRANCIS M. GREM, B.S., M.D., Assistant Professor of Anesthesia
 FRED SHERMAN GRODINS, M.D., Ph.D., Assistant Professor of Applied Physiology
 C. JACK HARRISON, M.D., Clinical Assistant Professor of Pediatrics
 GERT HEILBRUNN, M.D., Clinical Assistant Professor of Psychiatry
 ROBERT MOORE JONES, A.B., M.D., Clinical Assistant Professor of Medicine
 CLARENCE WILLARD KLASSEN, B.S., Assistant Professor of Bacteriology and Public
 Health
 JOHN CHARLES McMILLAN, JR., B.S., M.D., Clinical Assistant Professor of Medicine
 MAX MALCOLM MONTGOMERY, M.D., M.S., Assistant Professor of Medicine
 JOHN FRANCIS PICK, M.Mus., B.S., M.D., Clinical Assistant Professor of Surgery
 JULIUS BENJAMIN RICHMOND, M.S., M.D., Assistant Professor of Pediatrics
 COLQUITT OTIS RITCH, B.S., M.D., Clinical Assistant Professor of Urology
 HENRY H. RUBIN, B.S., M.D., Assistant Professor of Bacteriology and Public Health
 STEVEN OTTO SCHWARTZ, M.D., M.S., Clinical Assistant Professor of Medicine
 MRS. SOPHIE WILLENE SCHROEDER SLOMAN, B.S., M.D., Clinical Assistant Professor of
 Criminology
 GEORGE WILLIAM STUPPY, Ph.D., M.D., Clinical Assistant Professor of Medicine
 (Rush)
 PHILIP THOREK, B.S., M.D., Clinical Assistant Professor of Surgery
 HOWARD EVERETT WEATHERLY, A.B., M.D., Clinical Assistant Professor of Criminology,
 assigned to Psychiatry part time
 NATHANIEL OGLESBY CALLOWAY, Ph.D., M.D., Clinical Assistant Professor of Medicine
 HAROLD ARMAND GREENBERG, B.S., M.D., Clinical Assistant Professor of Criminology
 FREDERICK WILLIAM SCHACHT, M.S., M.D., Clinical Assistant Professor of Urology
 SAMUEL GALE TAYLOR, III, A.B., M.D., Clinical Assistant Professor of Medicine
 (Rush)
 GEORGE HENRY WOODRUFF, B.S., M.D., Clinical Assistant Professor of Otolaryngology
 and Attending Otolaryngologist in the Illinois Eye and Ear Infirmary
 FRED WILLIAM KASCH, M.S., Assistant Professor of Physical Education for Men and
 Head of the Department
 NORMAN STANLEY OLSEN, Ph.D., Assistant Professor of Biochemistry*
 JACK POSNER COWEN, B.S., M.D., Clinical Assistant Professor of Ophthalmology
 GEORGE LIONEL PERKINS, Ph.B., M.D., Assistant Professor of Psychiatry
 MAX SAMUEL SADOVE, B.S., M.D., Assistant Professor of Anesthesia
 BENJAMIN M. KAGAN, A.B., M.D., Clinical Assistant Professor of Pediatrics
 PHILIP SHAMBAUGH, A.B., M.D., Clinical Assistant Professor of Surgery

Associates

- MOSES GOLDWASSER, M.D., Clinical Associate in Medicine
 DIETRICH KLEMPNER, M.D., Clinical Associate in Medicine

* Resigned.

- ISRAEL BECKER, B.S., M.D., Clinical Associate in Medicine
WILLIAM A. MARSHALL, B.S., M.D., Clinical Associate in Orthopaedic Surgery
RAYMOND GREEN, B.S., M.D., Clinical Associate in Surgery
MELVIN LOUIS AFREMOW, M.S., M.D., Clinical Associate in Medicine
EDWARD J. HORICK, B.S., M.D., Clinical Associate in Ophthalmology
GUSTAVE FRANKEL WEINFELD, M.D., Clinical Associate in Criminology
NORMAN BRIDGE ROBERG, A.B., M.D., Clinical Associate in Medicine
HOWARD ZEITLIN, M.D., M.S., Clinical Associate in Neurology
HENRY CHASKELL SCHORR, B.S., M.D., Clinical Associate in Dermatology
DUANE D. DARLING, B.S., M.D., Clinical Associate in Medicine
HAROLD SHELOW, B.S., M.D., Clinical Associate in Dermatology
ABE LOUIS AARONSON, M.D., M.S., Clinical Associate in Medicine
THOMAS ADDISON BAIRD, B.S., M.D., Clinical Associate in Medicine (Rush)
EVAN MANSFIELD BARTON, A.B., M.D., Clinical Associate in Medicine (Rush)
MAX BERG, M.D., Ph.D., Clinical Associate in Medicine
ARTHUR BERNSTEIN, B.S., M.D., Clinical Associate in Medicine
MELVIN FRANK OTTO BLAUROCK, M.D., M.S., Clinical Associate in Psychiatry
MICHAEL HENRY BOLEY, B.S., M.D., Clinical Associate in Obstetrics and Gynecology
HERBERT CHARLES BREUHAUS, B.S., M.D., Clinical Associate in Medicine (Rush)
STANLEY BROWNSTEIN, B.S., M.D., Clinical Associate in Medicine (Rush)
JUSTIN MARTIN DONEGAN, M.D., Clinical Associate in Ophthalmology (Rush)
CECIL CHARLES DRAA, B.S., M.D., Clinical Associate in Obstetrics and Gynecology (Rush)
JOSEPH STEPHEN DRABANSKI, B.S., M.D., Clinical Associate in Urology
HARRY GODFREY HARDT, Ph.G., M.D., Clinical Associate in Neurology (Rush), *Emeritus*
GEORGE FIELDING HIBBERT, M.D., M.S., Clinical Associate in Obstetrics and Gynecology
HAROLD MARK HOOVER, B.S., M.D., Clinical Associate in Medicine
MORRIS AARON KAPLAN, M.S., M.D., Clinical Associate in Medicine
WILLIAM JAMES KIRBY, B.S., M.D., Clinical Associate in Medicine (Rush)
VERNON MAYNE LEECH, M.D., Clinical Associate in Ophthalmology (Rush)
HERMAN ABRAHAM LEVY, B.S., M.D., Clinical Associate in Medicine
MATTHEW LEWISON, B.S., M.D., Clinical Associate in Pediatrics (Rush)
HERMAN LOUIS MISHKIN, B.S., M.D., Clinical Associate in Surgery
NOEL GARNET SHAW, A.B., M.D., Clinical Associate in Pediatrics (Rush)
MAURICE SIMKIN, B.S., M.D., Clinical Associate in Medicine (Rush)
WILLIAM SIMKIN, B.S., M.D., Clinical Associate in Medicine (Rush)
GEORGE C. TURNER, B.S., M.D., Clinical Associate in Medicine (Rush)
JEROME FRANK STRAUSS, B.S., M.D., Clinical Associate in Otolaryngology
ARTHUR JETHRO COOMBS, A.B., M.D., Clinical Associate in Otolaryngology
AUGUST FIORE DARO, M.D., Clinical Associate in Obstetrics and Gynecology
WALTER RATHFON FISCHER, B.S., M.D., Clinical Associate in Orthopaedic Surgery (on leave of absence)
EVERETT ARTHUR GRIMMER, D.D.S., Clinical Associate in Orthopaedic Surgery
LEO FREDERICK MILLER, B.S., M.D., Clinical Associate in Orthopaedic Surgery
HORACE EDWARD TURNER, B.S., M.D., Clinical Associate in Orthopaedic Surgery
JOHN PETERS, M.D., Clinical Associate in Medicine
BRUNO BLUMKLOTZ, M.D., Clinical Associate in Otolaryngology
GEORGE CHARLES COE, B.S., M.D., Clinical Associate in Medicine
JACOB WARREN FISCHER, B.S., M.D., Clinical Associate in Medicine
FRANCIS WILLIAM HETREED, B.S., M.D., Clinical Associate in Dermatology (Rush)
D. BENJAMIN PEARLMAN, B.S., M.D., Clinical Associate in Medicine
HENRY RICWASSER, A.B., B.S., M.D., Clinical Associate in Medicine
HARVEY CORNELIUS ROLL, B.S., M.D., Clinical Associate in Dermatology
HARRY SERED, M.D., Clinical Associate in Obstetrics and Gynecology
JAMES LISLE WILLIAMS, A.M., M.D., Clinical Associate in Medicine
MRS. FRANCES CRANDELL PERCE, M.S., Clinical Associate in Criminology
BORIS URY, M.S., M.D., Clinical Associate in Psychiatry (on leave of absence for the year)
CHARLES BRUCE TAYLOR, B.S., M.D., Research Associate in Pathology (Rush)
JOSEPH ROGER BENNETT, A.B., M.D., Clinical Associate in Medicine (Rush)
HUBERT RALPH CATCHPOLE, Ph.D., Research Associate in Pathology
IRVING DREYER, M.S., M.D., Clinical Associate in Medicine

Lecturers

RODNEY HOWE BRANDON, Lecturer in Public Welfare Administration
 LAWRENCE JOSEPH LINCK, M.S., Lecturer in Public Administration
 AUSTIN EDWARD SMITH, M.D., C.M., M.S., Lecturer in Pharmacology
 OREN C. DURHAM, Lecturer in Biological Chemistry
 WALTON VAN WINKLE, JR., A.B., M.D., Lecturer in Pharmacology

Instructors

NORBERT PAUKER, B.S., M.D., Clinical Instructor in Pediatrics
 EMIL JAMES STEIN, M.D., Instructor in Anatomy (on leave of absence for war service)
 ALFONS ROSTHORN BACON, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 EUGENE GROSZ, M.D., Clinical Instructor in Medicine
 JULIUS A. GURVEY, B.S., M.D., Clinical Instructor in Medicine
 CHARLES OTIS SMITH, A.B., B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 CECIL DAVID BROWN, B.S., M.D., Clinical Instructor in Surgery
 EMANUEL PADNOS, B.S., M.D., Clinical Instructor in Pediatrics
 CLARA DEBORAH TIGAY, A.B., M.D., Clinical Instructor in Pediatrics
 MARVIN GEORGE FLANNERY, A.B., B.S., M.D., Clinical Instructor in Surgery
 DAVID HOWARD WAGNER, M.D., M.S., Clinical Instructor in Surgery
 HENRY PICKETT DORMAN, Ph.D., M.D., Clinical Instructor in Medicine
 WILLIAM STANLEY TIMBLIN, B.S., M.D., Clinical Instructor in Medicine
 JACOB JOSEPH BARATZ, B.S., M.D., Clinical Instructor in Pediatrics
 ROOSEVELT BROOKS, M.D., Clinical Instructor in Ophthalmology
 JOSEPHINE MARION DYNIEWICZ, Ph.C., Instructor in Pharmacology and Chemist in the Aero-Medical and Atmospheric Environment Unit
 IRVING ELIHU STECK, M.S., M.D., Clinical Instructor in Medicine
 BRANTLEY METTAUER JOHNSON, M.D., Clinical Instructor in Radiology
 PAUL R. GRIFFITH, A.B., M.D., Clinical Instructor in Dermatology
 ALBERT HENRY ANDREWS, JR., M.S., M.D., Clinical Instructor in Broncho-Esophagology
 EMANUEL JOSHUA FEINHANDLER, B.S., M.D., Clinical Instructor in Medicine
 JOSEPH G. SCHOOLMAN, A.B., M.D., Clinical Instructor in Otolaryngology
 NORMAN M. SHURE, M.D., M.S., Clinical Instructor in Medicine
 PAUL LINCOLN BEDINGER, M.D., M.S., Clinical Instructor in Medicine
 CLAIR MARTIN CAREY, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 IRENE NEUHAUSER, B.S., M.D., Clinical Instructor in Dermatology
 JEROME THOMAS PAUL, M.D., M.S., Clinical Instructor in Medicine (on leave of absence for war service)
 HANS PHILIPP POPPER, M.D., Ph.D., Clinical Instructor in Pathology*
 CARL EDWARD CAHN-BRONNER, M.D., Clinical Instructor in Pathology
 HARRY J. FOURNIER, M.D., Instructor in Anatomy
 CARL HELGE M. JANSON, B.S., M.D., Clinical Instructor in Medicine (Rush)
 HUGO CARL BAUM, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology (Rush)
 CYRIL VINCENT CRANE, B.S., M.D., Clinical Instructor in Ophthalmology (Rush)
 FRANK ALEXANDER DETRANA, M.D., Clinical Instructor in Medicine
 SAMUEL IRWIN DITKOWSKY, B.S., M.D., Clinical Instructor in Medicine
 JACOB S. FISHMAN, B.S., M.D., Clinical Instructor in Medicine (Rush)
 JACOB ABRAHAM GLASSMAN, M.D., M.S., Instructor in Anatomy
 RUDOLPH J. HENNEMEYER, M.D., Clinical Instructor in Medicine (Rush)
 BERTRAM GRIFFITH NELSON, B.S., M.D., Clinical Instructor in Medicine (Rush)
 DAVID VERMONT OMENS, M.D., Clinical Instructor in Dermatology (Rush)
 JOHN POST, B.S., M.D., Clinical Instructor in Medicine (Rush)
 LOUIS SAVITT, M.D., Clinical Instructor in Otolaryngology
 KARL JOHN SCHERIBEL, B.S., M.D., Clinical Instructor in Ophthalmology (Rush)
 ARMIN FREDERICK SCHICK, B.S., M.D., Clinical Instructor in Medicine (Rush)
 FRED SHAPIRO, B.S., M.D., Clinical Instructor in Orthopaedic Surgery (Rush)
 JOHN D. SINGER, B.S., M.D., Clinical Instructor in Medicine
 EDWARD A. SKOLNIK, M.D., Clinical Instructor in Dermatology (Rush)
 JOHN EDWARD TYSSELL, B.S., M.D., Clinical Instructor in Medicine (Rush)
 LOUIS STEPHEN VARZINO, B.S., M.D., Clinical Instructor in Orthopaedic Surgery (Rush)
 SEYMOUR WILLIAM WEISBERG, B.S., M.D., Instructor in Medicine (on leave of absence for war service)

* Resigned.

- MILTON MITCHELL MOSKO, B.S., M.D., Clinical Instructor in Medicine
 COYE CARLTON MASON, B.S., M.D., Instructor in Pathology
 CRAIG WYNNE GOODWIN, B.S., Instructor in Psychiatry and Physicist
 HAROLD ANTHONY GRIMM, B.S., M.D., Clinical Instructor in Pathology
 EDWARD ERNEST VICHER, Ph.D., Instructor in Bacteriology and Public Health
 OSCAR JACOB BECKER, B.S., M.D., Clinical Instructor in Otolaryngology
 WILLIS GLEASON DIFFENBAUGH, B.S., M.D., Clinical Instructor in Surgery
 JOSEPH DAVIS FARRINGTON, A.B., M.D., Clinical Instructor in Orthopaedic Surgery
 LOUIS FEINBERG, B.S., M.D., Clinical Instructor in Otolaryngology
 FRANK HERMAN FOWLER, M.D., Clinical Instructor in Surgery
 HARRY NICK PETRAKOS, B.S., M.D., Clinical Instructor in Medicine
 HAROLD ALAN ROTH, A.B., B.S., M.D., Clinical Instructor in Surgery
 WILLIAM ROBERT SLADEK, B.S., M.D., Clinical Instructor in Medicine
 ALBERT H. SLEPYAN, B.S., M.D., Clinical Instructor in Dermatology
 MRS. ELEANOR BURTON HARDING, M.S., Instructor in Medicine and Parasitologist
 ROBERT JOSEPH JENSIK, M.S., M.D., Clinical Instructor in Surgery
 PAUL KRAUT WEICHELBAUM, M.D., M.S., Clinical Instructor in Dermatology
 MICHAEL ZELLER, M.D., Clinical Instructor in Medicine
 FRANK JOSEPH WALSH, M.D., Clinical Instructor in Obstetrics and Gynecology
 WILLIAM IRWIN METZGER, M.S., Instructor in Bacteriology and Public Health*
 ERNST CRONHEIM, M.D., Clinical Instructor in Medicine
 ERNST HAASE, M.D., Clinical Instructor in Neurology
 VALLEY EILEEN HECKEL, A.B., M.D., Clinical Instructor in Anesthesia (Rush)
 LOUIS ALOIS HOLUB, B.S., M.D., Clinical Instructor in Surgery
 REINHOLD ENOCH JOHNSON, B.S., M.D., Clinical Instructor in Medicine
 ROLAND LINCOLN KESLER, A.B., M.D., Clinical Instructor in Medicine (Rush)
 CHARLES I. LEFF, B.S., M.D., Clinical Instructor in Medicine (Rush)
 LEON STANLEY SHALLA, B.S., M.D., Instructor in Anatomy
 JOSEPH B. TETON, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 THEODORE CONSTANTINE MOUZAKEOTIS, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 MRS. VIRGINIA TARLOW, B.S., M.D., Instructor in Psychiatry
 FRANZ EDUARD HIRSCH, M.D., Clinical Instructor in Pathology
 JOHN JAMES FAHEY, M.D., Clinical Instructor in Orthopaedic Surgery
 ISABEL MARCH, B.S., O.T.R., Instructor and Clinical Director in Occupational Therapy
 ERWIN ANGRES, M.D., Clinical Instructor in Criminology, Social Hygiene, and Medical Jurisprudence
 SOL J. BENENSOHN, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 MYRON CLYDE BENFORD, B.S., M.D., Instructor in Ophthalmology; Associate Medical Director, Head of the Outpatient Department, Acting Head of the Division of Physical Therapy, and Director of Clinics in the Research and Educational Hospital
 CATHERINE S. BIRDSALL, A.B., Instructor in Occupational Therapy and Supervisor of the Orthopaedic-Surgical Unit*
 ASHLEY MOSS BRAND, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 SOL THERON DELEE, M.S., M.D., Clinical Instructor in Obstetrics and Gynecology
 LOUIS EDDIN, B.S., M.D., Clinical Instructor in Medicine
 HENRY HALLEY, A.B., M.D., Clinical Instructor in Pathology
 KENNETH MICHAEL MORSE, M.S., Instructor in Bacteriology and Public Health
 WILLIAM JAMES NOLAN, M.D., Clinical Instructor in Psychiatry
 EDMUND VICTOR PELLETIERE, B.S., M.D., Clinical Instructor in Otolaryngology
 BERNARD SKORODIN, M.D., M.S., Clinical Instructor in Psychiatry
 LAWRENCE WILLIAM PETERSON, M.D., M.S., Instructor in Surgery
 KENNETH CARL ROBBINS, Ph.D., Instructor in Biological Chemistry and Research Assistant in the Allergy Unit
 BENJAMIN BERNARD KOPSTEIN, B.S., M.D., Clinical Instructor in Pediatrics
 LOUISE ERMA TAVS, A.B., M.D., Clinical Instructor in Dermatology
 ROBERT DESSENT, B.S., M.D., M.P.H., Clinical Instructor in Pediatrics
 CONRAD LEVI PIRANI, Ph.D., M.D., Clinical Instructor in Medicine
 MIRIAM DANIELS WALSTAD, B.S., O.T.R., Instructor in Occupational Therapy and Supervisor of Pediatric Division*
 HENRY DETLEV VON WITZLEBEN, M.D., Clinical Instructor in Neurology

* Resigned.

- CHARLOTTE HALL ALTMAN, A.M., Clinical Instructor in Criminology, Social Hygiene, and Medical Jurisprudence
- MARGARET MARY BATES, Assistant Librarian in the Quine Library of Medical Sciences, with the rank of Instructor
- CARL F. BAUMEISTER, B.S., M.D., Clinical Instructor in Medicine
- HERMAN PAUL CARSTENS, M.S., M.D., Clinical Instructor in Medicine
- LORENA CLARKE, A.M., Catalog Librarian in the Quine Library of Medical Sciences, with the rank of Instructor
- MAX HELIX CUTLER, B.S., M.D., Clinical Instructor in Otolaryngology
- WILLIAM ELLIOTT, B.S., M.D., Clinical Instructor in Urology (Rush)
- FRIEDY B. HEISLER, B.S., M.D., Clinical Instructor in Psychiatry
- HARVEY HORWITZ, B.S., M.D., Clinical Instructor in Medicine
- MRS. JANE ELEANOR POND, B.S., Instructor in Nutrition
- KATHRYN MARIE PRICE, A.B., Cataloger in the Quine Library of Medical Sciences, with the rank of Instructor
- ALBERT RALPH ROSANOVA, B.S., M.D., Clinical Instructor in Medicine
- THEODORE R. SHERROD, M.S., Instructor in Pharmacology
- MRS. DOROTHEA M. WHEELER, Pharmacy Reference Librarian in the Quine Library of Medical Sciences, with the rank of Instructor
- KURT GLASER, M.D., Instructor in Pediatrics
- HELEN EDITH HEINO, M.S., Instructor in Pathology
- ROWINE HAYES BROWN, B.S., M.D., Clinical Instructor in Pediatrics
- JAMES ROBERT THOMPSON, M.D., Clinical Instructor in Pathology
- MARIAN MULLENDORE, A.B., B.S., Circulation and Reference Librarian in the Quine Library of Medical Sciences, with the rank of Instructor*
- LAWRENCE BRESLOW, A.B., M.D., Clinical Instructor in Pediatrics
- BEN GERALD FISHKIN, A.B., M.D., Clinical Instructor in Pathology*
- JOHN O. HANSON, B.S., M.D., Clinical Instructor in Surgery
- CLARENCE WEBSTER MONROE, B.S., M.D., Clinical Instructor in Surgery (Rush)
- SAMUEL POLLOCK, B.S., M.D., Clinical Instructor in Otolaryngology
- MILTON TINSLEY, M.S., M.D., Instructor in Neurological Surgery
- JAMES PATRICK FITZGIBBONS, B.S., M.D., Instructor in Obstetrics and Gynecology
- FRANK CHARLES HOFRICHTER, B.S., M.D., Clinical Instructor in Surgery
- CHARLES DONALD KRAUSE, B.S., M.D., Instructor in Obstetrics and Gynecology
- ARMAND JEAN MAUZÉY, M.D., M.S., Instructor in Obstetrics and Gynecology
- CLARENCE WAGER RAINEY, B.S., M.D., Clinical Instructor in Ophthalmology
- HORACE CONTI, M.D., Clinical Instructor in Pathology
- EDWARD HURTADO, M.D., Clinical Instructor in Surgery and Health Officer*
- LOUIS PARMACEK, B.S., M.D., Clinical Instructor in Pathology
- IRVING JOSHUA SPEIGEL, M.D., Clinical Instructor in Neurosurgery
- ISRAEL IRVING RITTER, B.S., M.D., Clinical Instructor in Medicine
- WILLIAM PORTER SWISHER, B.S., M.D., Clinical Instructor in Medicine
- RUTH BILLINGS COLEMAN, A.B., Instructor in Medical Illustration
- NANCY GRAHAME JOY, A.O.C.A., Instructor in Medical Illustration
- NORMAN LESHIN, B.S., M.D., Clinical Instructor in Otolaryngology
- WOODROW GLEN MOSS, M.S., Instructor in Physiology
- EDWIN ALLEN OHLER, M.S., Instructor in Physiology
- VIRGINIA KIPKE PIERCE, B.S., M.D., Instructor in Obstetrics and Gynecology
- STANLEY E. TELSER, A.B., M.D., Instructor in Medicine
- CHARLES SHERIDAN TEXTOR, II, M.S., M.D., Clinical Instructor in Neurosurgery (Rush)
- WILLIAM JUNJI FURUTA, Ph.D., Instructor in Anatomy
- GEORGE OTTO BAUMRUCKER, B.S., M.D., Clinical Instructor in Urology (Rush)
- GEORGE JOSEPH BREBIS, M.S., M.D., Clinical Instructor in Medicine
- ALEXANDER M. BUCHHOLZ, M.S., M.D., Clinical Instructor in Dermatology
- WILLARD CARTER GOODPASTURE, B.S., M.D., Clinical Instructor in Medicine
- LOIS DIXON GREENE, A.B., M.D., Clinical Instructor in Otolaryngology
- RUSSELL CLARENCE HANSELMAN, A.B., M.D., Clinical Instructor in Surgery (Rush)
- ELIZABETH SELEY HEMMENS, Ph.D., Instructor in Bacteriology and Public Health
- ALF J. HOLM, A.B., M.D., Clinical Instructor in Urology
- WILLIAM ADDISON HUTCHISON, M.D., Clinical Instructor in Medicine
- ALBERT HERBERT JENKINS, A.B., B.S., M.D., Clinical Instructor in Otolaryngology (on leave of absence beginning January 1, 1947)

* Resigned.

ROBERT BARNARD LEWY, B.S., M.D., Clinical Instructor in Otolaryngology
LLOYD LOUIS MATZKIN, B.S., M.D., Clinical Instructor in Otolaryngology
EMERSON KING McVEY, M.D., Clinical Instructor in Pediatrics
JAMES VINCENT OLIVER, B.S., M.D., Instructor in Anatomy
FREDERIC JOSEPH POLLOCK, B.S., M.D., Clinical Instructor in Otolaryngology
HELEN LOWE RHETTA, A.B., M.D., Clinical Instructor in Medicine
IRVING BERNARD RICHTER, B.S., M.D., Clinical Instructor in Pediatrics
ALFRED HARRIS ROSENBLUM, B.S., M.D., Clinical Instructor in Medicine
ALAN KENNETH ROSENWALD, A.M., Instructor in Psychiatry and Clinical Psychologist
HARRY ROBERT SCHWARTZ, B.S., M.D., Clinical Instructor in Medicine
IRVIN S. SIGLIN, B.S., M.D., Clinical Instructor in Medicine
STEPHEN WILLIAM SUKUMLYN, M.D., Clinical Instructor in Ophthalmology
MARVIN JAMES TAMARI, M.D., Clinical Instructor in Otolaryngology
WILLIAM WEISDORF, B.S., M.D., Clinical Instructor in Psychiatry
PAUL P. BOSWELL, A.B., M.D., Clinical Instructor in Dermatology
STANLEY HERBERT GUMBINER, A.B., M.D., Instructor in Medicine
SAMUEL HYMAN, B.S., M.D., Clinical Instructor in Medicine
JEROME SAUL MEHLMAN, A.B., M.D., Clinical Instructor in Medicine
EDWARD BERNARD PLATTNER, M.S., M.D., Clinical Instructor in Pediatrics
JACK RODRIGUEZ, M.D., Instructor in Dermatology
RALPH EDWARD TALBOTT, A.B., M.D., Clinical Instructor in Neurology (Rush)
HUGH WILSON, A.B., M.D., Instructor in Pathology
GARNET BEATRICE BRADLEY, B.S., M.D., Clinical Instructor in Criminology
SOL PAUL DITKOWSKY, B.S., M.D., Clinical Instructor in Pediatrics
MILTON WILLIAM EISENSTEIN, M.D., M.S., Instructor in Anatomy
FLORENCE MAY MACLEAN, A.B., Instructor in Occupational Therapy and Supervisor
of the Orthopaedic Unit
ELIZABETH ANNE MCGREW, A.B., M.D., Instructor in Pathology
ABRAHAM ALVIN WOLF, B.S., M.D., Clinical Instructor in Pediatrics
GEORGE VELMER BYFIELD, M.D., M.S., Clinical Instructor in Medicine
ANGELINE OLIVA HOWARD, B.S., O.T.R., Instructor in Occupational Therapy and
Supervisor of the Medical Surgical Unit
ROBERT O. LEVITT, A.B., M.D., Clinical Instructor in Medicine
IRWIN ROBERT CALLEN, B.S., M.D., Instructor in Medicine
JANET R. KINNEY, B.S., M.D., Clinical Instructor in Medicine
MAX SAMTER, M.D., Clinical Instructor in Medicine and Research Assistant in the
Allergy Unit
WILLIAM SANGSTER, Ph.D., Instructor in Physiology
MAX MARTIN BERNSTEIN, B.S., M.D., Clinical Instructor in Medicine
WILLARD ZOLA KERMAN, B.S., M.D., Instructor in Pediatrics
LESLIE R. GRAMS, B.S., M.D., Clinical Instructor in Pathology
JACK WEINBERG, M.D., B.S., Clinical Instructor in Psychiatry

Assistants

GEORGE DAVID AMROMIN, B.S., M.D., Clinical Assistant in Pathology
HAROLD WESLEY ANDERSON, B.S., M.D., Clinical Assistant in Otolaryngology
JOSEPH SAMUEL ANGELL, M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
FRANK WILLIAM BAILEY, A.M., M.D., Clinical Assistant in Neurological Surgery
(Rush)
WALTER FRANK BALEIKO, M.D., Clinical Assistant in Medicine
ELMER LEWIS BECKER, M.S., M.D., Hornstein Research Assistant in the Allergy Unit
HUBERT HUGH BEGUESSE, B.S., M.D., Clinical Assistant in Psychiatry
JEROME SALLAN BEIGLER, A.B., M.D., Research Assistant in Psychiatry
PETER JOSEPH BEINAR, B.S., M.D., Clinical Assistant in Medicine
ROBERT DAVID BERKE, M.D., Clinical Assistant in Medicine
ELIZABETH LUCILLE BERTCHER, B.S., Research Assistant in Pharmacology
HERBERT E. BESSINGER, B.S., Assistant in Physiology
GAETANO ATTILIO BICA, B.S., M.D., Clinical Assistant in Medicine
EUGENE W. BLACK, B.S., M.D., Clinical Assistant in Pediatrics
BETSY JORDAN SNYDER BLACKMORE, A.B., M.D., Clinical Assistant in Pediatrics (Rush)
RALPH BLOCKSMA, A.B., M.D., Clinical Assistant in Surgery
HAROLD D. BOCKOVEN, A.B., M.D., Clinical Assistant in Ophthalmology
ANNE BOHNING, A.B., M.D., Clinical Assistant in Pediatrics (Rush)

- HERBERT WILLIAM BONDURANT, M.D., Clinical Assistant in Orthopaedic Surgery
 LOUIS DAVID BOSHEE, A.B., M.D., Research Assistant in Psychiatry, assigned to Northwestern University
 WILLIAM FREDERICK BOWEN, B.S., M.D., Clinical Assistant in Surgery (Rush)
 EDGAR OSGOOD BREAKSTONE, Ph.G., B.S., M.D., Clinical Assistant in Ophthalmology
 BENJAMIN W. BREISTER, M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 WILLIAM EDWARD BRETZ, B.S., M.D., Clinical Assistant in Medicine (Rush)
 JOHN WAGNER BROWN, B.S., Assistant in Physical Education for Men
 MARVIN RAY BRUMME, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 MATTHEW JOSEPH BRUNNER, B.S., M.D., Clinical Assistant in Dermatology
 ALETA VALENTINE BURNS, B.S., Research Assistant in Pediatrics
 MRS. ROSE KLOKA BUSCH, M.S., Assistant in Bacteriology and Public Health
 HARRY BRYANT CAMPBELL, A.B., B.S., M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 ZEPHANIAH BEALL CAMPBELL, JR., B.S., M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 ROBERT GERALD CANHAM, D.D.S., Assistant in Physiology
 ETHEL ATHEA CHAPMAN, M.S., M.D., Clinical Assistant in Psychiatry
 MOREY CHAPMAN, B.S., M.D., Clinical Assistant in Medicine
 MRS. DOROTHY ANNE HAASCH CHESSE, B.S., M.D., Assistant in Obstetrics and Gynecology
 HARRY COTELL, B.S., M.D., Clinical Assistant in Medicine
 LOIS MARJORIE COTRELL, B.S., Research Assistant in the Allergy Unit
 DONALD JOSEPH CRONIN, B.S., M.D., Clinical Assistant in Otolaryngology
 CHARLES WILSON CULLISON, M.D., Clinical Assistant in Pathology
 ROBERT PORTER CUTLER, A.B., M.D., Clinical Assistant in Psychiatry
 ROBERT IRVING CUTTS, B.S., M.D., Clinical Assistant in Medicine
 RUTH RENTER DARROW, A.B., M.D., Clinical Assistant in Pediatrics (Rush)
 CARL BRADEN DAVIS, JR., A.B., M.D., Clinical Assistant in Surgery (Rush)
 FREDERIC AUGUSTUS DE PEYSTER, A.B., M.D., Clinical Assistant in Surgery (Rush)
 WILLIAM ALLEN DONNELLY, B.S., M.D., Clinical Assistant in Otolaryngology
 ERVING ARTHUR DRESKIN, B.S., M.D., Clinical Assistant in Pathology
 LEROY WILLIAM EARLEY, A.B., B.S., M.D., Research Assistant in Psychiatry, assigned to the University of Chicago
 EDWARD LESLIE ECKERT, Research Assistant in Medicine
 NORMAN JAMES EHRLICH, B.S., M.D., Clinical Assistant in Medicine
 KURT EICHELBAUM, M.D., Clinical Assistant in Orthopaedic Surgery
 NYLA RUTH ELNES, A.B., M.D., Assistant in Anesthesia
 SAMSON D. ENTIN, B.S., M.D., Clinical Assistant in Medicine
 TILDEN CYRIL EVERSON, A.B., M.D., Clinical Assistant in Surgery
 HENRY DOUGLAS FEUSNER, B.S., M.D., Clinical Assistant in Radiology
 HENRY HERMAN FINEBERG, A.B., M.D., Clinical Assistant in Psychiatry
 MARTIN FISHKIN, B.S., M.D., Clinical Assistant in Medicine
 THELMA FLANDERS, B.S., Assistant in Bacteriology and Public Health
 JOSEPH FLORENCE, M.D., Clinical Assistant in Medicine (on leave of absence for war service)
 JOHN RODERICK FLYNN, B.S., M.D., Clinical Assistant in Radiology
 EDSON FAIRBROTHER FOWLER, M.D., M.S., Clinical Assistant in Surgery
 THEODORE ALBERT FOX, B.S., M.D., Clinical Assistant in Orthopaedic Surgery
 SANFORD A. FRANZBLAU, M.S., M.D., Clinical Assistant in Medicine
 ANN ELIZABETH FREEMAN, A.M., M.D., Research Assistant in Biological Chemistry
 FRANCES I. FRIEWER, A.B., Assistant in Bacteriology and Public Health
 REUBEN B. GAINES, A.B., M.D., Clinical Assistant in Urology (Rush)
 RAYMOND MASSON GALT, A.B., M.D., Clinical Assistant in Medicine
 SYDNEY TANNER GETTELMAN, B.S., M.D., Clinical Assistant in Medicine
 MRS. ERNA LEONHARDT GIBBS, Research Assistant in Psychiatry
 ROBERT JOSEPH GLENNER, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 FRANK RICHARD GONDEK, B.S., M.D., Clinical Assistant in Medicine
 FOSTER E. GOSSARD, B.S., M.D., Clinical Assistant in Medicine
 JOHN RAYMOND GREEN, B.S., M.D., Clinical Assistant in Neurology and Neurological Surgery
 JOHN THEODORE GREGORIO, M.D., Clinical Assistant in Medicine
 ROBERT LESLIE GRISSOM, M.S., M.D., Clinical Assistant in Medicine
 ARNOLD ARTHUR GROSSMAN, B.S., M.D., C.M., Clinical Assistant in Otolaryngology

AARON GUNTHER, B.S., M.D., Clinical Assistant in Medicine
 BETTY JULIA HALL, B.S., M.D., Clinical Assistant in Pediatrics (Rush)
 HARRY GODFREY HARDT, JR., B.S., M.D., Clinical Assistant in Surgery
 DAVID SINCLAIR HARMAN, M.D., Clinical Assistant in Psychiatry
 ELLIS HAROLD HARRIS, B.S., M.D., Clinical Assistant in Pediatrics
 ZIGMORE HARRIS, B.S., M.D., Assistant in Anesthesia
 HENRIETTA SULZBERGER HARTLEY, M.D., Clinical Assistant in Medicine
 ELSIE HARTMAN, A.B., M.D., Clinical Assistant in Medicine and Medical Adviser for
 Women
 ROBERT RUDOLPH HERBST, M.D., Clinical Assistant in Ophthalmology
 MAURICE MICHAEL HOELTGEN, B.S., M.D., Clinical Assistant in Otolaryngology
 MARC HALE HOLLENDER, B.S., M.D., Clinical Assistant in Psychiatry
 HOWARD RUSSELL HONE, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 OLIVER A. HORAK, B.S., M.D., Clinical Assistant in Pediatrics
 BETTY MAE HOWARD, M.S., Research Assistant in Medicine
 WILLIAM STROBEL HUNTER, B.S., M.D., Clinical Assistant in Neurology and Neurological
 Surgery
 KAO HWANG, B.M., Research Assistant in Physiology
 TOHRU INOUE, A.B., Research Assistant in Medicine
 KEITH RANDALL IRISH, B.S., M.D., Clinical Assistant in Radiology
 MILDRED R. JACKSON, M.D., M.S., Clinical Assistant in Pediatrics
 ELIZABETH HOLDEN JENNEY, A.B., Research Assistant in Pharmacology
 JOSEPH HERMAN JESSER, A.B., M.D., Clinical Assistant in Medicine
 KENNETH GOSS JONES, B.S., M.D., Clinical Assistant in Orthopaedic Surgery
 ORMAND CLINKINBEARD JULIAN, M.D., Ph.D., Clinical Assistant in Surgery
 HAROLD KARL KAEMERLE, M.D., Research Assistant in Pharmacology
 GEORGE DANIEL KAISER, M.D., M.S., Clinical Assistant in Surgery
 SELIG JOEL KAVKA, B.S., M.D., Clinical Assistant in Medicine
 BURTON CONWELL KILBOURNE, M.D., Clinical Assistant in Surgery
 BEN ZION KLATCH, M.D., Assistant in Physiology
 ELTA WILLIAMS KNOLL, B.S., Assistant in Bacteriology and Public Health (Rush)
 SELMA ANNA KOHLWEY, Research Assistant in the Allergy Unit*
 MARY ELIZABETH KOSTALEK, B.S., M.D., Assistant in Pediatrics (Rush)
 MRS. ALICE ROSENTHAL KULASAVAGE, A.B., M.D., Clinical Assistant in Obstetrics and
 Gynecology
 RICHARD J. KULASAVAGE, A.B., M.D., Clinical Assistant in Medicine
 EDWARD WICKLIFFE KUNCKEL, M.D., Clinical Assistant in Obstetrics and Gynecology
 (Rush)
 DONALD CAMERON LAMONS, B.S., M.D., Clinical Assistant in Medicine
 HERMAN BORIS LANDER, B.S., M.D., Clinical Assistant in Pediatrics
 ARDELLE CATHERINE LANE, M.S., Research Assistant in Physiology
 EDWARD HOWELL LANPHER, B.S., Research Assistant in Pharmacology
 SALVADORE ALPHONSO LASK, B.S., M.D., Clinical Assistant in Surgery
 MRS. MURIEL RUEKBERG LAST, M.S., Research Assistant in Pharmacology*
 HOWARD JACK LEVINE, B.S., M.D., Clinical Assistant in Medicine
 SEYMOUR LEVINE, B.S., Assistant in Bacteriology and Public Health
 GEORGE LEVY, B.S., M.D., Clinical Assistant in Medicine
 REUBEN R. LEWIS, B.S., M.D., C.M., Clinical Assistant in Anesthesia
 MARGARET HIE-DING LIN, A.M., M.D., Clinical Assistant in Surgery
 CARL THEODORE LINDEN, Assistant in Medical Illustration
 GUSTAVE STEPHEN LINK, B.S., M.D., Clinical Assistant in Urology (Rush)
 BARBARA STEINER LIPTON, B.S., M.D., Assistant in Psychiatry
 ARMAND LITTMAN, B.S., M.D., Clinical Assistant in Medicine
 ROCCO V. LOBRAICO, JR., B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 WILLARD HAYES LOVE, JR., B.S., M.D., Clinical Assistant in Orthopaedic Surgery
 LEONARD JEROME LOVESETH, A.B., M.D., Assistant in Anesthesia
 JAMES WILLIAM LOYND, II, M.D., Clinical Assistant in Obstetrics and Gynecology
 JEROME JACK LUBIN, B.S., M.D., Clinical Assistant in Medicine
 J. FREDERICK LUTZ, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 MRS. GWENDOLIN BURNS LYMAN, A.B., Research Assistant in Physiology
 BARNEY MALBIN, A.B., M.D., Clinical Assistant in Medicine (Rush)
 EVELYN MAXINE MCARTHUR, B.S., Research Assistant in the Allergy Unit
 WALTER C. MCWILLIAMS, A.B., M.D., Clinical Assistant in Medicine (Rush)

* Resigned.

- HERBERT ROYAL MOORE, B.S., M.D., Clinical Assistant in Pediatrics
 ROGER WILLIAM MORRISON, B.S., M.D., Clinical Assistant in Pathology
 HOLGER SPAABECK MOURITSEN, B.S., M.D., Clinical Assistant in Surgery (Rush)
 JOHN R. NECHELES, M.D., Clinical Assistant in Medicine
 MUTSUMI NOBE, Ph.C., M.S., Assistant in Biological Chemistry
 FRANK JOHN NOVAK, III, B.S., M.D., Clinical Assistant in Otolaryngology (on leave of absence for war service)
 RICHARD MONTGOMERY OLIVER, A.B., M.S., Clinical Assistant in Dermatology
 HAROLD DONALD OMENS, M.D., Clinical Assistant in Dermatology (Rush)
 RAYMOND MASASHI OTSUKA, M.D., Clinical Assistant in Radiology
 JOHN FRANCIS PAGET, A.B., M.D., Clinical Assistant in Neurological Surgery (Rush)
 LAURENCE LOUIS PALITZ, Ph.D., M.D., Clinical Assistant in Dermatology
 HOMER SIDNEY PARKER, B.S., M.D., Clinical Assistant in Pediatrics (Rush)
 ERICH PASCHKES, M.D., Clinical Assistant in Criminology, Social Hygiene, and Medical Jurisprudence, assigned to Psychiatry part time
 MATTHEW MOSS PATTON, B.S., M.D., Assistant in Physiology
 LAWRENCE PERLMAN, B.S., M.D., Clinical Assistant in Medicine
 PAUL WILLIAMS PHILLIPS, A.B., M.D., Assistant in Orthopaedic Surgery
 VERNA K. PITTARD, B.Ed., Research Assistant in Medicine
 THEODORE ZANE POLLEY, B.S., M.D., Clinical Assistant in Medicine
 SOPHIE JANINA PRESLEY, M.D., Research Assistant in Medicine
 JOHN HULL PRIBBLE, A.B., M.D., Assistant in Anatomy
 CHARLES DARNELL PROCTOR, A.M., Research Assistant in Pharmacology
 PAUL ARTHUR RABER, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 CONSTANCE GLORIA RAGUSA, B.S., Research Assistant in Medicine
 ALDEN RAISBECK, A.B., M.D., Clinical Assistant in Psychiatry
 EUGENE JOHN RANKE, B.S., M.D., Assistant in Medicine
 WILDA ELOISE RAYMON, M.D., Clinical Assistant in Anesthesia (Rush)
 VIRGINIA WESTON REILLY, Research Assistant in Physiology*
 SYLVIO BERNARD REMY, A.B., M.D., Clinical Assistant in Radiology
 WILLIAM H. REQUARTH, M.D., M.S., Clinical Assistant in Surgery
 JOHN C. RICHTER, JR., A.B., M.D., Clinical Assistant in Surgery (Rush)
 WILLIAM LETCHER RIKER, M.D., Clinical Assistant in Surgery (Rush)
 CHARLOTTE ROSE ROBERTSON, Research Assistant in Physiology
 ERWIN H. ROESER, A.B., M.D., Clinical Assistant in Surgery (Rush)
 DALE ARTHUR ROLD, M.D., Clinical Assistant in Obstetrics and Gynecology (Rush)
 ARLAND SETH ROMBERGER, B.S., M.D., Clinical Assistant in Urology (Rush)
 CHARLES ALBERT ROSS, M.S., Research Assistant in Pharmacology*
 LEWIS JAMES ROSSITER, M.S., Assistant in Surgery (on leave of absence for the year)
 LYLE WILLIAM RUSSELL, M.D., Assistant in Orthopaedic Surgery
 ARTHUR JOSEPH SAMUELS, B.S., Research Assistant in the Allergy Unit
 ANTHONY ROSARIO SAPIENZA, B.S., M.D., Clinical Assistant in Medicine
 RALPH AMERICUS SCALA, LL.B., M.D., Clinical Assistant in Medicine
 EDWARD LOUIS SCHREY, B.S., M.D., Clinical Assistant in Surgery
 RALPH HORACE SCULL, B.S., M.D., Clinical Assistant in Dermatology (Rush)
 ALLEN HARREY SEEGER, M.D., Assistant in Obstetrics and Gynecology
 IRENE SHMIGELSKY, M.D., Assistant in Pediatrics (Rush)
 HENRY ABRAHAM SIEGAL, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 EMANUEL M. SKOLNIK, B.S., M.D., Clinical Assistant in Otolaryngology
 HAROLD EDWARD SMITH, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 PAUL WALTERS SNOWDEN, B.S., M.D., Clinical Assistant in Radiology (Rush)*
 JAMES DANIEL SOLOMON, M.S., Research Assistant in Biological Chemistry
 KURT SPRINGER, M.D., Clinical Assistant in Otolaryngology (Rush) (on leave of absence for war service)
 ALBERT FRANK STEIN, B.S., M.D., Clinical Assistant in Pediatrics
 WILLIE MARY STEPHENS, A.M., M.D., Clinical Assistant in Neurology, assigned to Psychiatry part time
 LEONARD ALVIN STINE, M.S., M.D., Clinical Assistant in Medicine
 CHARLES HENRY STUBENRAUCH, JR., M.D., M.S., Clinical Assistant in Dermatology
 OSCAR SUGAR, Ph.D., M.D., Clinical Assistant in Neurology and Neurological Surgery

* Resigned.

MRS. MURIEL HARDEN SVEC, M.S., Assistant in Bacteriology and Public Health
 STANLEY LLOYD FEITELMAN, A.B., M.D., Clinical Assistant in Surgery
 LOUIS LIONEL TEPLINSKY, M.D., Clinical Assistant in Anesthesia
 PIERCE WILLIAM THEOBALD, A.B., M.D., Clinical Assistant in Otolaryngology
 ROGER ALAN VAN ATTA, B.S., M.D., Clinical Assistant in Ophthalmology
 SAMUEL ALLAN VICTOR, M.D., Clinical Assistant in Psychiatry
 HARRY KENNETH WADDINGTON, B.S., M.D., Clinical Assistant in Obstetrics and Gynecology
 RUFUS JAMES WALKER, B.S., Research Assistant in Physiology
 JOHN I. WALLER, B.S., M.D., Clinical Assistant in Urology (Rush)
 LEROY EUGENE WALTER, M.D., B.S., Clinical Assistant in Surgery
 LUCILLE WATT, M.S., M.D., Clinical Assistant in Anesthesia (Rush)
 CARL WILHELM WEIDENHEIM, B.S., M.D., Clinical Assistant in Radiology
 NORMAN TURNER WELFORD, M.D., Clinical Assistant in Pediatrics (Rush)
 ADELINE RAWSON WHITE, B.S., M.D., Assistant in Anatomy, *Emerita*
 ALEXANDER WOLF, B.S., M.D., Clinical Assistant in Medicine
 HAROLD WILLIAM WOODSON, M.S., Assistant in Biological Chemistry
 HARRY JOSEPH YELLEN, B.S., M.D., Clinical Assistant in Medicine
 JOHN BAABA YONAN, B.S., M.D., Clinical Assistant in Medicine
 JOHN PAUL YOUNG, JR., A.B., B.S., M.D., Clinical Assistant in Surgery
 ROBERT EDMUND YUNCK, B.S., M.D., Clinical Assistant in Medicine (Rush)

COLLEGE OF PHARMACY

Professors

EARL ROY SERLES, Ph.G., Ph.D., Professor of Pharmacy and Dean of the College of Pharmacy
 ALBERT HENRY CLARK, Ph.G., M.S., Professor of Chemistry and Acting Dean of the College of Pharmacy, *Emeritus*§
 EDMUND NORRIS GATHERCOAL, Pharm.M., Professor of Pharmacognosy, *Emeritus*
 GEORGE EARLE WAKERLIN, Ph.D., M.D., Professor of Physiology and Head of the Department in the College of Medicine
 GEORGE LEWIS WEBSTER, Ph.G., Ph.D., Professor of Chemistry
 ELMER HAUSER WIRTH, Ph.C., Ph.D., Professor of Pharmacognosy and Pharmacology, and Director of the Drug Plant Experiment Station
 MILAN VACLAV NOVAK, Ph.D., M.D., Professor of Bacteriology and Public Health, and Head of the Department in the College of Medicine
 CARL CURT PFEIFFER, Ph.D., M.D., Professor of Pharmacology and Head of the Department in the College of Medicine

Associate Professors

RALPH EUGENE TERRY, Ph.G., M.S., Associate Professor of Pharmacy
 HUGH LESLIE DAVIS, Ph.D., Associate Professor of Chemistry

Assistant Professors

HERBERT MARTIN EMIG, Ph.G., M.S., Assistant Professor of Pharmacy
 CHARLES WILDMAN CLARKE, M.S., Assistant Professor of Chemistry
 FRANK THOMAS MAHER, Ph.D., Assistant Professor of Pharmacology
 RALPH FERDINAND VOIGT, Ph.D., Assistant Professor of Pharmacognosy and Pharmacology, and Assistant to the Director of the Drug Plant Experiment Station
 ERNST RUDOLF KIRCH, Ph.C., Ph.D., Assistant Professor of Chemistry
 PAUL DAVID CARPENTER, Ph.G., M.S., Assistant Professor of Botany and Zoology
 JAMES EDGAR DAVIS, A.M., Assistant Professor of Mathematics
 LESTER CHARLES DOLK, Ph.D., Assistant Professor of English
 LEWIS ELBERT MARTIN, Ph.G., A.M., Assistant Professor of Pharmacy
 ROBERT MARTIN BESANCON, A.M., Assistant Professor of Physics
 BYRL E. BENTON, M.S., Assistant Professor of Manufacturing Pharmacy
 NORMAN ROSS JOSEPH, Ph.D., Assistant Professor of Chemistry
 ALFRED JAMES PERKINS, Ph.D., Assistant Professor of Chemistry

§ Deceased.

Lecturers

SAMUEL SIKOLNIK, Ph.G., LL.M., Lecturer in Pharmaceutical Jurisprudence

Instructors

CHARLES BOYD GRANBERG, B.S., Instructor in Manufacturing Pharmacy
 WILLIAM ROBERT COLLINS, Ph.C., B.S., Instructor in Pharmacy and Registered Pharmacist in the Hospital Pharmacy
 DORANNE JEAN PENNEY, B.S., Instructor in Zoology
 SEYMOUR LAMPERT, M.S., Instructor in Pharmacy
 MRS. BERNICE ALBRIGHT SCOTT, A.B., Instructor in Mathematics
 VELMA MARIE DAVIS, A.B., Instructor in English

Assistants

NAOMI GLORIA BROWN, B.S., Assistant in Chemistry
 LORETTO ANNE BYRNE, Assistant in Manufacturing Pharmacy
 LOREN BROOKS HALL, B.S., Assistant in Physics
 JACOB STEPHEN RODIA, B.S., Assistant in Chemistry
 ROBERT J. SHERMAN, B.S., Assistant in Chemistry
 CLEMENT ADDISON STONE, B.S., Assistant in Pharmacy
 JOSEPH ALBAN TURSICH, B.S., Assistant in Chemistry

LIBRARY

ROBERT BINGHAM DOWNS, M.S., Litt.D., Director of the University Library
 PHINEAS LAWRENCE WINDSOR, Ph.B., Litt.D., Director of the University Library, *Emeritus*
 MARY LOIS BULL, A.M., Library Administrative Assistant, with the rank of Assistant Professor
 WILLIA KATHRYN GARVER, B.L.S., Assistant University Librarian (Acquisitions)
 ARNOLD HERMAN TROTIER, A.M., Assistant University Librarian (Cataloging)
 JOSIE BATCHELLER HOUCHEMS, B.L.S., A.M., Assistant University Librarian (Personnel and Binding)
 LEWIS CAPERS BRANSCOMB, JR., A.M., Assistant University Librarian (Public Service Departments)

Acquisition Department

GEORGE BERDINE BROWN, A.M., Assistant Acquisition Librarian, with the rank of Assistant Professor
 HELEN LUCILE MCINTYRE, M.S., Consultant in Bibliography, with the rank of Assistant Professor
 KATHLEEN MARGARET RUCKMAN, A.M., Gift and Exchange Librarian, with the rank of Instructor
 LUCY VERA KEPLER, A.M., Periodical Librarian, with the rank of Instructor
 MAURINE COLLINS, A.M., Exchange Reviser, with the rank of Instructor
 HELEN MARGARET WELCH, A.M., B.S., Bibliographer, with the rank of Instructor
 GEORGIA ROSE COFFIN, A.B., B.S., Bibliographer, with the rank of Instructor
 LOIS MARGARET DI SANTO, A.B., B.S., Documents Assistant, with the rank of Instructor
 ANNE VERA MARINELLI, A.B., B.S., Bibliographer, with the rank of Instructor
 LOUIS AUGUSTINE KENNEY, A.B., B.S., Bibliographer, with the rank of Instructor
 THOMAS EDWARD RATCLIFFE, JR., A.B., B.S., Bibliographer, with the rank of Instructor
 MRS. ESTHER MAE WITCHER, A.B., B.L.S., Bibliographer, with the rank of Instructor
 JOHN MILFRED GOUDEAU, A.B., B.S., Bibliographer, with the rank of Instructor
 MARY ROBERTS, A.M., Exchange Assistant
 EVELYN MARGUERITE ROGIER, B.S., Acquisition Assistant
 ALICE MILDRED COOPER, B.Ed., Periodical Assistant
 MRS. RUTH WARRICK, B.S., Periodical Assistant
 ELIZABETH PAULINE KNOWLES, A.B., B.S., Exchange Assistant
 EDWARD LEE SHEPPARD, A.B., Exchange Assistant
 MRS. ERNESTINE TONG CHEH, B.Ed., B.S., Periodical Assistant
 RENATO PAUL BARTOLINI, B.Ed., B.S., Exchange Assistant
 SHELLEY VIRGINIA MARSHALL, A.B., Exchange Assistant
 ROBERT RALPH POLAND, A.B., Exchange Assistant

Binding Department

MRS. AVIS AULD BALL, A.B., B.S., Assistant Binding Librarian, with the rank of Instructor
 MARGARET JEAN LOKKE, A.B., B.S., Binding Assistant, with the rank of Instructor
 CAROL HORTON ANTHONY, A.B., B.S., Binding Assistant

Catalog Department

ELEANOR MABEL ROBERTSON, A.B., B.L.S., Assistant Catalog Librarian, with the rank of Assistant Professor
 MRS. KATHERINE MCGRAW WHEELER, A.B., B.L.S., Catalog Reviser, with the rank of Assistant Professor
 CLEO LICHTENBERGER, B.S., B.L.S., Catalog Reviser, with the rank of Assistant Professor
 ESTHER WILLARD ANELL, A.B., B.L.S., Chief Serial Reviser, with the rank of Assistant Professor
 CHRISTOPHER URDAHL FAYE, A.M., M.S., Bibliographic Consultant and Cataloger, with the rank of Assistant Professor
 MARGARET OLDFATHER, A.M., Serial Reviser, with the rank of Assistant Professor
 META MARIA SEXTON, A.M., B.L.S., Cataloger, with the rank of Instructor
 CLARISSA OLIVIA LEWIS, A.M., Cataloger, with the rank of Instructor
 JANET GERTRUDE BULLEN, M.S., Cataloger, with the rank of Instructor
 DOROTHY ELIZABETH HEICKE, A.M., Serial Cataloger, with the rank of Instructor*
 MARIAN HARMAN, Ph.D., Cataloger, with the rank of Instructor
 REBECCA BRIGGS, A.M., Serial Cataloger, with the rank of Instructor
 ALICE LOUISE BOYD, A.M., B.S., Cataloger, with the rank of Instructor
 EDITH MAY MARSHALL, A.M., B.S., Cataloger, with the rank of Instructor
 MAY SMITH, M.S., Serial Cataloger, with the rank of Instructor
 MRS. LUCILE WRIGHT ALLEN, B.S., Serial Cataloger, with the rank of Instructor
 MRS. LOIS RIFFLE BAMBER, M.S., Serial Cataloger, with the rank of Instructor
 FLOWEREE HECKERT, A.B., B.S., Cataloger, with the rank of Instructor
 ELEANOR FRANCES MATTHEWS, A.B., B.S., Cataloger, with the rank of Instructor
 MRS. MARTHA SANFORD PEACOCK, A.B., B.S., Cataloger, with the rank of Instructor
 ELIZABETH RUTH BANTZ, B.S., Cataloger, with the rank of Instructor
 LOUISE FINLEY LODGE, Ph.D., Cataloger, with the rank of Instructor
 ROBERT LOUIS TALMADGE, A.B., B.S., Cataloger, with the rank of Instructor
 MRS. LELLIA SWEARINGEN McLAUGHLIN, B.S., Assistant in charge of the Card Division
 MARY ELLEN COUCH, B.S., Cataloger
 MRS. MARRI LOUISE ALBRIGHT, B.S., Cataloger
 MRS. MILDRED SPEIRS HEDRICK, B.S., Cataloger
 FRED B. ONTOBY, A.B., B.S., Cataloger
 MRS. FELICIA LEONTINE TURYN, M.L.L., Cataloger

Circulation Department

KATHARINE MARTIN STOKES, A.M., Circulation Librarian
 EMMA REED JUTTON, B.L.S., Circulation Librarian, *Emerita*
 HELEN TREAT STEWART, A.M., Assistant Circulation Librarian, with the rank of Instructor
 CECELIA MARY MCCARTHY, A.M., Extension Loans Librarian, with the rank of Instructor
 MRS. THEO BROXHOLM NELSON, A.B., B.S., Reserve Book Room Librarian, with the rank of Instructor
 ELEANOR BLUM, M.S., Freshman Reading Room Librarian, with the rank of Instructor
 HOWARD WOODROW WINGER, A.B., B.S., Book Stacks Librarian, with the rank of Instructor
 CECELIA MARY KINGSLEY, A.B., B.S., Reserve Book Room Librarian, with the rank of Instructor
 MRS. MARY ARNTZEN VANCE, M.S., Circulation Assistant, with the rank of Instructor
 ROBERT WILSON KIDDER, A.M., Circulation Assistant
 ANCILLA TOIGO, B.S., Circulation Assistant

* Resigned.

ELSIE BERGLAND, M.S., Circulation Assistant
 ELIZABETH WHITMARSH, A.B., Circulation Assistant
 MRS. BETTY JANE FAWVER, B.Ed., B.S., Circulation Assistant

Reference Department

ALICE SARAH JOHNSON, A.B., B.L.S., Reference Librarian
 FANNY DUNLAP, Ph.B., B.L.S., Reference Librarian
 MILDRED IRENE HENRY, A.B., Reference Librarian, with the rank of Associate Professor
 DOROTHY MILLER BLACK, A.M., Associate Reference Librarian, with the rank of Assistant Professor
 MARTHA LUCILE HACKMAN, A.M., B.L.S., Assistant Reference Librarian, with the rank of Instructor
 JOSEPHINE MATHEWS THARPE, A.M., Assistant Reference Librarian, with the rank of Instructor
 KATHERINE WHITE WHITTLE, A.B., B.S., Reference Assistant, with the rank of Instructor
 JANE LOUISE BRAND, A.B., Reference Assistant, with the rank of Instructor

Departmental Libraries at Urbana

CHARLES EDWIN JANVRIN, Ph.B., B.L.S., Librarian, Natural History, *Emeritus*
 MARY GLADYS BURWASH, A.B., B.L.S., Agriculture Librarian
 HILDA JOSEPHINE ALSETH, A.B., B.L.S., Engineering Librarian
 MRS. BERNITA JEWELL DAVIES, A.B., LL.B., B.S., Law Librarian
 IDA TOD, B.S., Education, Philosophy, and Psychology Librarian, *Emerita*
 LYLE EDWARD BAMBER, M.S., Natural History Librarian
 MARJORIE MABEL JOHNS, A.B., B.S., University High School Librarian
 NELLE MARIE SIGNOR, A.B., B.L.S., History and Political Science Librarian (on leave of absence beginning January 1, 1947)
 ELVIN SCHUYLER WARRICK, A.M., Mathematics Librarian, with the rank of Instructor
 FLORENCE MARIE HARDING, A.M., Modern Languages Librarian, with the rank of Instructor
 EVA FAYE BENTON, A.M., M.S., English Librarian, with the rank of Instructor
 ISABELLE FITCH GRANT, A.M., Rare Book Room Librarian, with the rank of Instructor
 MRS. EVALYN REICH NELSON, A.M., Education, Philosophy, and Psychology Librarian, with the rank of Instructor
 SYLVIA CORAL GILMORE, M.S., Browsing Room Librarian, with the rank of Instructor
 CERILLA ELIZABETH SAYLOR, M.S., Architecture Librarian, with the rank of Instructor
 JOSEPH ALLEN, A.M., B.S., Music Librarian
 DONNA DOROTHY FINGER, A.M., Library School Librarian
 EDITH CARRINGTON JONES, Ph.D., Cataloger and Classics Librarian, with the rank of Instructor
 FINA CAROL OTT, A.M., B.S., Commerce and Sociology Librarian, with the rank of Instructor
 MRS. ELAINE SNYDER LAMPSON, B.S., Chemistry Librarian, with the rank of Instructor
 MRS. EUNICE COLLINS MOHR, A.B., B.S., Journalism Librarian
 MRS. SUE WORSLEY RAMSEY, A.B., B.S., Illini Union Browsing Room Librarian, with the rank of Instructor
 ICKO IBEN, Ph.D., Newspaper Librarian and Archivist, with the rank of Instructor
 GWENDOLYN LLOYD, A.M., Acting History and Political Science Librarian
 MURIEL HOPE PARRY, Map Librarian*
 BILLY MILTON WOODS, A.B., Acting Map Room Librarian
 FRANCES CAROL BROOKS, A.B., B.S., Education, Philosophy, and Psychology Library Assistant, with the rank of Instructor
 HELEN MARGARET REYNOLDS, M.S., Architecture Library Assistant, with the rank of Instructor
 JANE STURTEVANT, A.B., B.S., Natural History Library Assistant, with the rank of Instructor
 CHARLES RICHARD KNAPP, JR., Ph.B., B.S., Law Library Assistant
 JEAN HALL, A.B., B.S., Architecture Library Assistant
 VIRGINIA ANNA BERG, A.B., B.S., Journalism Library Assistant
 ANNIE LAURIE CLAY, A.M., Browsing Room Assistant§

* Resigned. § Deceased.

JOANN AUFDENKAMP, A.B., B.S., Commerce and Sociology Library Assistant
 KATHLEEN GRAHAM FLETCHER, A.B., B.S., Education, Philosophy, and Psychology
 Library Assistant
 MAY WRIGLEY PEARCE, A.B., University High School Library Assistant
 CHARLES A. WEBBERT, A.B., B.S., Agriculture Library Assistant
 JEANNE CATHERINE DES MARAIS, A.B., Architecture Library Assistant

Undergraduate Division in Chicago

DAVID KEMPTON MAXFIELD, M.S., Librarian
 WALTER ARTHUR SOUTHERN, A.B., Reference-Circulation Librarian, with the rank of
 Instructor
 ROBERT B. HARNES, A.B., B.S., Assistant Reference-Circulation Librarian, with the
 rank of Instructor
 DORIS VARNER WELSH, M.S., Catalog-Acquisition Librarian, with the rank of In-
 structor*
 CARMEN FLORENCE WILSON, B.S., Assistant Reference-Circulation Librarian, with the
 rank of Instructor*
 ELSEY EVANS MERRIAM, B.S., B.L.S., Catalog-Acquisition Librarian, with the rank of
 Instructor

Undergraduate Division at Galesburg

DE LAFAYETTE REID, JR., B.Journ., B.S., Librarian
 LOUISE MATILDA STUBBLEFIELD, M.S., Reference-Circulation Librarian, with the rank
 of Instructor
 FLORENCE MARION HILDEBRANDT, A.B., B.S., Catalog-Acquisition Librarian, with the
 rank of Instructor
 BETTE JANE PATTERSON, A.M., Assistant Reference-Circulation Librarian, with the rank
 of Instructor

Quine Library of Medical Sciences

WILMA ALLENE TROXEL, A.M., Librarian
 METTA MAY LOOMIS, Librarian, *Emerita*
 MARGARET MARY BATES, Assistant Librarian, with the rank of Instructor
 MRS. DOROTHEA M. WHEELER, Pharmacy Reference Librarian, with the rank of In-
 structor
 LORENA CLARKE, A.M., Catalog Librarian, with the rank of Instructor
 KATHRYN MARIE PRICE, A.B., Cataloger, with the rank of Instructor
 MARIAN MULLENDORE, A.B., B.S., Circulation and Reference Librarian, with the rank
 of Instructor*

Rush College Library

CAROLINE WILHELMINA RIECHERS, Ph.B., B.S., Chief Librarian
 BERNICE INEZ ORTLEIP, Assistant Librarian

* Resigned.

University Staff Summary (Including Both Full-time and Part-time Positions) April 15, 1947

	Professors		Associate Professors		Assistant Professors		Associates		Lecturers		Instructors		Aidants		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Instruction																
Aeronaotics	54	1	11	4	27	7	4	2	4	4	1	5	1	18	5	6
Agriculture	20	1	7	3	21	3	4	2	8	2	53	4	110	27	115	27
Commerce	11		14	4	14	4			1		10*	5	49	19	68	19
Education	48		29	1	51	4	1	1	5	5	107	5	283	5	289	5
Engineering	21		11	2	21	5	1	1	19	5	42	8	82	18	100	18
Fine and Applied Arts					5	4					1	1	6	4	10	4
Hygiene	5		2		5						1	1	6	4	10	4
Journalism	1		2		5						1	1	6	4	10	4
Labor and Industrial Relations	1		2		1						1	1	2	4	4	4
Law	6		2		1						1	1	6	4	10	4
Liberal Arts and Sciences	79		54	4	72	13	3	2	1	51	34	264	156	524	211	735
Library Science	2		2	4	2	11			4				6	21	27	21
Military Science	1		0		5								15	8	23	8
Naval Science	1		1		6				1	1	1	1	15	8	23	8
Physical Education	3		1		0								3	2	5	2
Veterinary Medicine	3		1		0				3	1	3	1	15	8	23	8
<i>Sub total, Peoria</i>	(362)	(8)	(138)	(15)	(241)	(52)	(12)	(6)	(7)	(51)	(59)	(485)	(193)	(1,209)	(333)	(1,542)
Dentistry	6		6	1	8	2	2	2	14	2	20	5	56	5	61	5
Medicine	72		94	5	119	8	58	1	5	164	22	157	20	699	56	755
Pharmacy	3		2		13				3	3	5	2	27	5	32	5
<i>Sub-total, Chicago</i>	(81)		(102)	(6)	(170)	(10)	(60)	(1)	(6)	(181)	(27)	(182)	(22)	(782)	(66)	(848)*
Undergraduate Division, Chicago	2		9	1	24	7			76	90	10	1	122	99	221	99
Undergraduate Division, Champaign			3	1	6				21	23	8	6	38	29	67	29
<i>Total, Instruction</i>	345	8	252	22	444	69	72	7	14	429	199	685	222	2,241	527	2,768
Research																
Agricultural Experiment Station															192	34
Engineering Experiment Station															162	162
Other Research															41	41
<i>Total, Research</i>															(465)	(75)
Deduct Duplicates (counted under Instruction)															(147)	(9)
<i>Net Total, Research</i>															318	66
Extension																
Extension Service in Agriculture and Home Economics															53	28
University Extension															10	10
<i>Total, Extension</i>															(63)	(28)
Deduct Duplicates (counted under Instruction and Research)															(19)	(5)
<i>Net Total, Extension</i>															44	23
Library																
General and Departmental Libraries															27	104
Deduct Duplicates (counted under Instruction)															(7)	(14)
<i>Net Total, Library</i>															20	90
Administration																
Administrative Officers, including Deans and Directors															37	37
Administrative Assistants															86	14
Junior Administrative Assistants															32	23
<i>Total, Administration</i>															(155)	(37)
Deduct Duplicates (counted under Instruction, Research, Extension, and Library)															(75)	(9)
<i>Net Total, Administration</i>															80	28
Retired Members of Instructional and Administrative Staffs																
<i>GRAND TOTAL</i>															2,811	745

* Including Teachers in University High School. There are also 77 school teachers cooperating with the College of Education not counted in this table. * Including members of the clinical staff.

GENERAL INFORMATION

LOCATION

THE MAIN CAMPUS OF THE UNIVERSITY OF ILLINOIS IS SITUATED partly in the city of Urbana and partly in the city of Champaign, in Champaign County, about fifty miles northeast of the geographical center of the state. The two municipalities form one community of approximately sixty thousand people. The railway, express, mail, telegraph, and telephone services of both cities are available to the University.

Undergraduate Divisions of the University are located at the Navy Pier in Chicago and at Galesburg, a community in the northwestern section of the state. The Colleges of Dentistry, Medicine, and Pharmacy are located in Chicago, near the Cook County Hospital.

The land occupied by the University includes the Urbana campus, 445 acres; the Galesburg campus, 160 acres (assigned to the University by the War Assets Administration); the Chicago campus, 12 acres; airport, 770 acres; forest preserves, 150 acres, and agricultural experiment fields, 1,296 acres, in Champaign County; experiment farms in twenty-five other counties, 711 acres; farms which are investments of endowment funds, 1,298 acres; the Allerton estate in Monticello, 5,518 acres (woodland, 1,494 acres; farm land, 3,774 acres; 4-H Club camp site, 250 acres).

HISTORY AND ADMINISTRATION

The University was originally incorporated as the Illinois Industrial University, by an act of the General Assembly of Illinois, February 28, 1867, in accordance with the "Morrill Land Grant College Act" whereby the national government gave to each state in the Union public land script equal to 30,000 acres for each senator and representative in Congress, for "the endowment, support, and maintenance of, at least, one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." This congressional act, approved by Abraham Lincoln on July 2, 1862, was the culmination of a movement developed as early as 1850 by Jonathan Baldwin Turner, a citizen of Jacksonville, Illinois, whose "Plan for a State University for the Industrial Classes" had advocated such legislation.

In addition to the original endowment, Congress has made provision for the land-grant institutions by supplementary acts carrying annual appropriations, which in most cases are for specific purposes. The principal support of the University of Illinois is provided by the State of Illinois, through biennial appropriations made by the General Assembly.

When the University was opened, March 2, 1868, the faculty consisted of the Regent and two professors, and about fifty students were enrolled. During the first term another instructor was added, and the number of students increased to seventy-seven—all men. Instruction was given in algebra, geometry, physics, history, rhetoric, and Latin. In the autumn of 1868 a chemistry laboratory was provided, and in 1869 laboratory work in botany was begun. In 1870 a shop was

equipped with tools and machinery, to start the first shop instruction given in any American university. Beginning in 1870, women were admitted as students on the same terms as men, and since that time women have constituted from one-sixth to one-half of the total enrollment. By the original state law the University could not grant diplomas and degrees; certificates showing the studies pursued, and the grades in each, were awarded instead. As these certificates were unsatisfactory, the General Assembly in 1877 gave authority to confer degrees and issue diplomas. In 1885 the General Assembly changed the name of the institution from the Illinois Industrial University to the University of Illinois.

The original state law placed the University under the control of a Board of Trustees, consisting of the Governor, the Superintendent of Public Instruction, and the President of the State Board of Agriculture, who were members *ex officio*, and twenty-eight citizens appointed by the Governor. The chief executive officer was called the Regent and was made *ex officio* a member of the Board and presiding officer of both the Board of Trustees and the faculty. In 1873 the number of Trustees was reduced to eleven—the Governor and the President of the State Board of Agriculture, *ex officio*, and nine others, who were still appointed by the Governor. Since 1873 the President of the Board of Trustees has been elected annually by the Board from its own membership. In 1887 the General Assembly passed a law making membership in the Board elective at a general state election and restoring the Superintendent of Public Instruction as a member *ex officio*; there were then three *ex officio* and nine elected members. Under the Illinois Civil Administrative Code enacted in 1917, the office of the President of the State Board of Agriculture was abolished January 1, 1919. There are now, therefore, eleven Trustees, two *ex officio* and nine elected.

The office of executive head of the University has been held by ten persons: Dr. John Milton Gregory, Regent from 1867 to 1880; Dr. Selim Hobart Peabody, Regent *pro tempore* from 1880 to 1881, and Regent from 1881 to 1891; Dr. Thomas Jonathan Burrill, Acting Regent from 1891 to 1894; Dr. Andrew Sloan Draper, President from 1894 to 1904; Dr. Edmund Janes James, President from 1904 to 1920; Dr. David Kinley, Acting President from 1919 to 1920, and President from 1920 to 1930; Dr. Harry Woodburn Chase, President from 1930 to 1933; Dr. Arthur Hill Daniels, Acting President from 1933 to 1934; Dr. Arthur Cutts Willard, President from 1934 to 1946; and Dr. George Dinsmore Stoddard, President since 1946.

The administration of the University is vested by the Board of Trustees in the President, the Provost, the Senate, the Faculties of the Colleges and Schools, the Deans of the Colleges, the Directors of the Schools, and the General Administrative Officers. The Council, an advisory body, consists of the President, the Provost, the Vice-President in charge of the Chicago Professional Colleges, the Dean of the Graduate School, the Dean of each College, the Director of each independently organized School, the Director of each Institute, the Director of the Library, the Dean of the Summer Session, the Director of the Division of Special Services for War Veterans, and three members of the Senate.

Regulations adopted by the Board of Trustees for the guidance of the staff of the University were called *By-Laws* until 1901, when the term *Statutes* was applied. In 1908 a comprehensive revision of the Statutes was adopted, and from time to time thereafter separate articles were amended. From 1931 to 1934 new regulations relating particularly to the educational and administrative organization of the University were formulated, and these were included in a revised edition issued in 1936.

The present colleges, schools, and other divisions of the University, which are described in later sections of this book, came into existence as follows:

Aeronautics.—The Institute of Aeronautics was established in 1945 as an administrative agency responsible for the fostering and correlation of the educational and research activities related to aviation in all parts of the University.

Agriculture.—Instruction in agriculture, which was begun in 1868 as a department, was organized as the College of Agriculture in 1870. Courses in home economics, called domestic science and art when first given in 1874, have been administered as a department of this college since 1901. The Agricultural Experiment Station was organized in 1888. The Extension Service in Agriculture and Home Economics originated in the Smith-Lever Act of 1914.

Commerce.—The College of Commerce and Business Administration was organized in 1915, to include the courses in business administration established by a special appropriation of the General Assembly in 1901, which had replaced the earlier courses in commercial subjects. The Bureau of Economic and Business Research originated in 1921 as a department of this college.

Dentistry.—The Columbian Dental College, established in 1892 and named the Illinois School of Dentistry in 1898, was first affiliated with the University in 1901, and its name was changed to the College of Dentistry in 1905.

Education.—The School of Education, which was established in 1905 to conduct courses for the training of teachers, was renamed the College of Education in 1918, in which year the Bureau of Educational Research was organized.

Engineering.—Courses in mechanics and engineering were first offered in 1869, and were included in the College of Engineering in 1870. The Engineering Experiment Station was established in 1903.

Extension.—The Division of University Extension was organized in 1933, when correspondence courses were first offered. This division, which has also administered extramural courses since 1936, includes Visual Aids Service (established in 1932) and Speech Aids Service (1935).

Fine and Applied Arts.—The College of Fine and Applied Arts was established in 1931, to administer the courses in architecture, art, landscape architecture, and music. The Bureau of Community Planning was established in this college in 1934.

Graduate School.—Although courses were not offered under the name of the Graduate School until 1892, individual members of the faculty in many departments had carried on research for more than twenty years previously, and graduate work for advanced degrees was offered as early as 1880. Members giving instruction for graduate credit were first organized as a separate faculty under a dean in 1906.

Health Service.—The Department of Health Service is maintained to promote the physical and mental health of students, to control communicable disease among them, and to teach them the essentials of healthful living. It has been under the supervision of the Dean of Students since 1943.

Institutional Research.—The Bureau of Institutional Research has existed since 1933 as an agency for collecting and analyzing facts with reference to various phases of operation of the University.

Journalism.—The School of Journalism was established in 1927. For twenty-five years prior to that date, instruction in journalism had been administered by the Department of English.

Labor and Industrial Relations.—The Institute of Labor and Industrial Relations was established in 1945 to offer curricula and other educational programs, both on campus and through extension service, in all phases of industrial and labor relations, and to promote research in those fields.

Law.—The School of Law was first organized in 1897, and its name was changed to the College of Law in 1900.

Liberal Arts and Sciences.—Some courses in which instruction had been given from the beginning in March, 1868, were first grouped in the College of Literature, Science, and Art in 1870. After several reorganizations in the next forty years of growth, the College of Literature and the College of Science were united in 1913 to form the present College of Liberal Arts and Sciences. Divisions in this college are Biological Sciences (since 1934); Humanities (1935); Social Sciences (1935); and General Studies (1940).

Library Science.—The Library School originated in 1893 as the School of Library Economy at the Armour Institute of Technology in Chicago. It became a part of the University of Illinois in 1897 when it was transferred to Urbana. (Since that time its director has also had charge of the University Library, which began with one thousand volumes in 1868.)

Medicine.—The College of Physicians and Surgeons of Chicago, incorporated in 1881, became affiliated with the University of Illinois in 1897. Its name was changed to the College of Medicine in 1900, and its property was transferred to the University in 1913. Rush Medical College and Presbyterian Hospital in Chicago have been affiliated with the College of Medicine since 1941. By an act of the General Assembly in 1941, the Research and Educational Hospital and the Illinois Surgical Institute for Children were transferred to the University from the State Department of Public Welfare; the Division of Services for Crippled Children, formerly in that Department, was placed under the jurisdiction of the University. The Illinois Neuropsychiatric Institute, the Illinois Eye and Ear Infirmary, and the Institute for Juvenile Research, which also are located on the Chicago campus, operate under an agreement between the University and the Department of Public Welfare.

Military Science.—In compliance with both federal and state laws, the Department of Military Science was established "as part of the regular and necessary means of education" in the original organization of the University in 1868. Acts of Congress in 1916 and 1920 provided for the Reserve Officers' Training Corps.

Music.—Courses in music, some of which were begun in 1872, were reorganized when the School of Music was established in 1895. This school became a part of the College of Fine and Applied Arts in 1931.

Naval Science.—The Department of Naval Science, established in 1945, is responsible for the administration of the Naval Reserve Officers' Training Corps.

Pharmacy.—The Chicago College of Pharmacy, founded in 1859, became the School of Pharmacy of the University of Illinois in 1896, and its name was changed to the College of Pharmacy in 1932.

Physical Education.—The Departments of Physical Education for Men and for Women and the Department of Health Service were combined in 1932 to form the School of Physical Education. In 1943 the Department of Health Service was placed under the supervision of the Dean of Students.

Press.—A continuous program of scholarly publications has been carried on since 1900, when a general series of "University Studies" was begun. The work of editing, printing, and publishing was centralized in 1918 by the establishment of the University Press.

Radio Station.—The University's first broadcasting station, WRM, was operated from 1922 to 1926 in the Electrical Engineering Laboratory. Station W I L L was constructed in 1926 on the north campus at Urbana, partly through a gift by Boetius H. Sullivan as a memorial to his father, Roger C. Sullivan. Its transmitter on the south campus was installed in 1938, and its studios have been in Gregory Hall since 1942.

Small Homes Council.—The Small Homes Council was established in 1944 for the purpose of informing the general public on matters pertaining to home design, construction, maintenance, and ownership, by means of publications and approved forms of demonstration.

Special Services for War Veterans.—The Division of Special Services for War Veterans was established in 1944 to act as a flexible agency to study the needs of veterans and to determine and make use of the best means of receiving, counseling, and providing for them.

Student Personnel Bureau.—Originating in 1937 as a counseling service for students in the College of Liberal Arts and Sciences, the Student Personnel Bureau was made an independent administrative unit in 1942.

Summer Session.—The University's first summer session, lasting four weeks, was held in 1894. In the summers of 1896-1898 courses of study were conducted only at the University's Biological Experiment Station on the Illinois River. In 1899, when the regular summer session was reopened at Urbana, the giving of summer courses (usually six or eight weeks) became a permanent policy. The summer term was twelve weeks in 1942, sixteen weeks in 1943, 1944, and 1945, and twelve weeks in 1946. Courses primarily for teachers are offered during the first eight weeks of the summer term.

Teacher Education.—The University Council on Teacher Education, established in 1944, is responsible for the general development and coordination of teacher-training programs.

Veterinary Medicine.—The College of Veterinary Medicine was established in 1944. Courses in animal pathology and hygiene, given under the College of Agriculture since 1870, were included.

Related Organizations with Headquarters on the Urbana Campus

Alumni Association.—First organized in 1873 by the Classes of '72 and '73, the University of Illinois Alumni Association adopted most of its present constitution in 1913. Its current program of activities was begun in 1941.

Athletic Association.—The University Athletic Association, first organized in 1883, has operated under faculty control since 1891. Directors are appointed annually by the University Board of Trustees.

University of Illinois Foundation.—Incorporated in 1935, as an outgrowth of the "Alumni Fund" which had been established in 1925, the University of Illinois Foundation is a non-profit corporation under the laws of the State of Illinois.

University Retirement System.—Created by an act of the General Assembly in 1941, the University Retirement System of Illinois provides disability and death benefits and retirement annuities for participating employees of the University, the State Normal Universities and Teachers Colleges, and the State Scientific Surveys.

State Scientific Surveys.—The Natural History Survey, Geological Survey, and Water Survey, Divisions of the State Department of Registration and Education, operate under the Illinois Civil Administrative Code enacted in 1917.

United States Soybean Laboratory.—The United States Department of Agriculture has maintained a soybean laboratory on the Urbana campus since 1936.

BUILDINGS

There are 87 buildings on the main campus at Urbana-Champaign, 37 buildings on the experiment farms in Champaign County, 7 buildings on the Chicago campus, and 117 buildings on the Galesburg campus (assigned to the University by the War Assets Administration). The principal buildings, listed by colleges or according to use, with the dates of erection, are as follows:

College of Agriculture

Agricultural Engineering Building (erected, 1906-07, as the Farm Mechanics Building; tractor laboratory added, 1923; name changed, 1932).

Agronomy Annex (erected, 1900; rebuilt, 1912).

Agronomy Seed House (1929).

Animal Genetics Building (1915-16).

Cattle Feeding Plant (first unit, 1917; second unit, 1925; third unit, 1930; scale house, 1936).

Dairy Purebred Cattle Barn (1924-25).

Dairy Round Barns (1913).

Dairy Manufactures Building (1925).

Davenport Hall (erected, 1900, as Agriculture Building; name changed, 1946).

Floriculture Building (1912-13; addition, 1928).

Horse Barn (1925).

Horticulture Farm Barn (1935).

Horticulture Field Laboratory (1921-22).

Horticulture Field Laboratory Greenhouse (1928).

Mumford Hall (erected, 1922-23, as New Agriculture Building; name changed, 1946).

Poultry Service Building (1917, 1926, 1936).

Sheep Barn (1912; addition, 1942).

Stock Judging Pavilion (1913).

Swine Plant (1925; addition, 1942).

Vegetable Crops Building (1912-13; addition, 1928).

College of Commerce and Business Administration

David Kinley Hall (erected, 1925, as the Commerce Building; name changed, 1946).

College of Education

University High School (erected, 1917-18, as Education Building; name changed, 1942).
University High School Gymnasium (1929).

College of Engineering

Aeronautical Engineering Laboratory (erected, 1912, as the Locomotive Testing Laboratory; name changed in 1944).
Airport Hangar (1945).
Arthur Newell Talbot Laboratory (erected, 1928-29, as Materials Testing Laboratory; name changed, 1938).
Ceramics Building (1915-16).
Ceramics Kiln House (1913).
Civil Engineering Surveying Building (erected 1904-05, as the Horticultural Service Building; remodeled for surveying in 1923).
Electrical Engineering Annex (erected, 1898, as a power plant).
Electrical Engineering Research Laboratory (erected, 1898; remodeled, 1929).
Engineering Hall (1894).
Machine Tool Laboratory (1895).
Mechanical Engineering Laboratory (1905; addition, 1910; remodeled, 1917 and 1929).
Mining and Metallurgical Laboratory (1913; addition, 1936).
Nuclear Radiations Laboratory (erected, 1931, as State Geological Survey Research Laboratory, with garage added, 1932; name changed, 1940).
Physics Building (1909).
Physics Research Laboratory (erected 1946-47).
Radio Transmission Laboratory (erected, 1926, gift of Boetius H. Sullivan as a memorial to his father, Roger C. Sullivan; assigned to Electrical Engineering, 1945).
Sanitary Engineering Laboratory (1943).
Transportation Building (1912; addition, 1921).
Woodshop and Foundry Laboratory (1901-02).

College of Fine and Applied Arts

Building for Architecture and Kindred Subjects (1927).
Smith Memorial Music Hall (1918-19) (made possible by gift of Capt. Thomas J. Smith as a memorial to his wife, Tina Weedon Smith).

College of Law

Altgeld Hall (erected as the Library, 1896-97; additions, 1914, 1920; remodeled, 1926, and assigned to the College of Law; name changed, 1940).

College of Liberal Arts and Sciences

Botany Annex and Greenhouse (1914).
Chemistry Annex (1930-31).
Gregory Hall (1939-40).
Harker Hall (erected, 1878, as the Chemical Laboratory; remodeled, 1902, for the College of Law; remodeled, 1927, and assigned in part to the Department of Entomology; portion of second floor remodeled, 1930, and assigned to the Department of Botany; name changed, 1941).
Lincoln Hall (1911; addition, 1928-29).
Mathematics Building (erected, 1918, as stack addition to the Library; remodeled with addition, 1926; assigned to Mathematics, 1927).
Natural History Building (erected, 1892; additions, 1909 and 1921).
Noyes Laboratory of Chemistry (erected, 1901-02, as the Chemistry Laboratory; addition, 1914-15; name changed, 1939).
Observatory (1896).
Vivarium (erected 1915-16).

School of Physical Education

George Huff Gymnasium (erected, 1925-26, as Men's New Gymnasium; name changed, 1937).
 Gymnasium Annex (1889-90; addition, 1918, as Engine Annex; addition, 1942).
 Ice Skating Rink (erected, 1931, by the Athletic Association).
 Men's Old Gymnasium (erected, 1901; remodeled, 1942; addition, 1942).
 Woman's Gymnasium (erected, 1931).

College of Veterinary Medicine

Veterinary Pathology Laboratory (erected, 1904-05, as a beef cattle building; assigned to Animal Pathology, 1919; name changed, 1945).

Residence Halls

Mary E. Busey Hall (erected, 1917, as Woman's Residence Hall; name changed, 1937).
 Laura B. Evans Hall (erected, 1925, as West Residence Hall; name changed, 1937).
 Illini Hall (acquired, 1938).
 Men's Residence Hall (Barton, Clark, Flagg, Lundgren, and Noble Houses, 1940-41).

Service Buildings

Abbott Power Plant (1940).
 Filtration Plant (1931).
 Fire Station (1901; remodeled, 1942).
 Garages and Shops (North, 1922; additions, 1928 and 1940; South, 1928).
 Greenhouse (north) (1898).
 Grounds Department Barns (1895, 1927).
 Military Stables (1919-22).
 Physical Plant Service Building (erected, 1910, as Power Plant; additions, 1914, 1920, 1925, 1930-31; name changed, 1941).
 Storage Building (erected, 1904-05, as Agronomy Building).
 Storage Warehouses (1915, 1925, 1935).

General University Use

Administration Building (East) (erected as Commerce Building, 1912; name changed, 1926).
 Administration Building (West) (erected, 1915; remodeled, 1926 and 1928).
 Airport Hangar (acquired, 1945).
 Arcade Building (acquired, 1938).
 Armory (erected, 1914-15; additions, 1926-27).
 Auditorium (erected, 1907-08; remodeled, 1937).
 Bevier Hall (erected, 1905, as Woman's Building; additions, 1912-13 and 1923-24; name changed, 1946).
 Davenport House (acquired, 1922; Kappa House acquired, 1927; assigned to Health Service and Nonacademic Personnel, 1947).
 Health Service Building (erected, 1896, as President's House; name changed, 1919).
 Illini Union Building (erected, 1939-40; fourth floor finished, 1942).
 Library (first unit, 1924-25; second unit, including the first stack unit, 1926-27; third unit, including the second stack unit, 1928-29; third stack unit, 1939-40).
 McKinley Hospital (1925) (gift of Senator William B. McKinley) (first addition, 1939).
 Memorial Stadium (1922-23) (gift of alumni and friends of the University through the Athletic Association) (south bleachers erected by Athletic Association, 1929) (west hall remodeled, 1942).
 Radio Transmitter Station (1938).

Special Uses

Band Building (erected, 1921-22, as the Armory Annex; assigned to Military Bands, 1928).
 Geological Survey Laboratory, for applied research (1940).
 Natural Resources Building, for use of State Geological and Natural History Surveys (erected, 1939-40; garage added, 1942).
 President's House (1931, located at 711 Florida Avenue, Urbana).
 State Natural History Survey Laboratory (erected, 1905, as State Entomologist's Laboratory; name changed, 1940).

Chicago Buildings

Chicago Illini Union Building (acquired, as College of Pharmacy Building, 1915-17; additions, 1926-27; remodeled and name changed, 1940).
 Dining Hall and Kitchen (acquired, 1941).
 Medical and Dental College Laboratories Building (first unit, 1931; second unit, 1937; including the Research Laboratory and Library unit, erected in 1922-23).
 Nurses Home (acquired, 1941).
 Orthopaedic Building (acquired, 1941).
 Power Plant (acquired, 1941).
 Research and Educational Hospital (acquired, 1941).

LIBRARY

The Library includes all books belonging to the University. The total cataloged material in the several divisions of the Library on July 1, 1946, was as follows:

	<i>Books, Volumes, Pamphlets, Music, Maps, Manuscripts, Films (Cataloged)</i>	<i>Pamphlets (Partly Cataloged)</i>	<i>Total</i>
<i>Urbana:</i>			
General and Departmental Libraries	1,948,721	414,388	2,363,109
<i>Chicago:</i>			
Quine Library of Medical Sciences	79,003	9,621	88,654
<i>Total in University Library</i>	<u>2,003,622</u>	<u>424,009</u>	<u>2,451,763</u>

In Urbana most of the books are housed in the main Library Building. All students have direct use of 14,000 reference books in the general reading room, which seats 500. A collection of approximately 11,000 volumes is maintained in the North and South Reserve Book Rooms for the use of undergraduate students. In an adjacent room is a collection of 2,200 volumes for freshman rhetoric courses. There are two browsing rooms, one in the Library Building and the other in the Illini Union Building; here students have 3,200 books for general and cultural reading not connected with courses of study. In addition to these general reading rooms, there are special rooms for Classics, History, Political Science, English, Commerce, Social Welfare Administration, Sociology, Library Science, Germanic and Romance Languages, Maps, Education, Philosophy, and Psychology. The seating facilities in the building are slightly more than 2,000, including 216 in carrels in the book stacks.

The departmental and college libraries in Urbana, outside the Library Building, are given in the following table.

<i>Name of Library</i>	<i>Seating Capacity</i>	<i>Volumes</i>
Agriculture	120	30,200
Architecture (Ricker Library)	86	19,700
Astronomy	6	2,000
Ceramics	16	2,500
Chemistry	73	21,900
Engineering	210	51,400
Illini Union Browsing Room	32	1,200
Illinois Historical Survey	12	2,400
Journalism	73	4,000
Landscape Architecture	25	8,000
Law	164	78,500
Mathematics	32	14,000
Music	26	6,000
Natural History	89	62,500
Natural History Survey	12	13,300
Physics	8	4,600

The Union Card Catalog, representing books principally in other important libraries in the United States, contains over 3,000,000 cards available for bibliographical uses and is an aid in arranging for inter-library loans. The Library also has most of the bibliographies commonly used by the book trade in this and other countries, together with related reference works and catalogs in many languages.

Over 15,000 periodicals are currently received, including more than 200 newspapers published in Illinois and about 100 foreign language papers published in the United States and abroad.

The following brief statements indicate the resources of the Library in some of the special fields:

Italian history includes the Cavagna collection, purchased in Italy in 1921, of over 40,000 books and pamphlets, besides maps, photographs, drawings, and several thousand manuscripts. It contains much material on local Italian history, biography, and genealogy.

Classical literature, history, and archaeology in the Classics Library comprise approximately 33,600 volumes, including complete sets of about 150 journals. In the classical collection are the library of Professor Wilhelm Dittenberger, of Halle, 5,600 items acquired in 1907; the library of Professor Johannes Vahlen, of Berlin, 10,000 items acquired in 1913; and a collection of about 17,000 dissertations and reprints.

The Map Room contains approximately 76,000 maps.

Music embraces over 25,000 scores and pieces of music, over 5,000 books on music, definitive complete works of most major composers, and many complete files of foreign and domestic journals. The gift of more than 2,000 pieces of music from the Rafael Joseffy Memorial has contributed materially to the strength of the collection. A separate music library, containing about 6,000 volumes and scores, is housed in Smith Memorial Music Hall.

The Rare Book Room houses about 29,500 volumes, including about 2,250 items of Milton and Miltoniana, and 400 incunabula. The collection is especially strong in seventeenth century English material; editions of the classics, especially those used by the schools as textbooks in Shakespeare's day; catechisms, English psalters, and prayer books before 1701; seventeenth century English sermons; early Bibles; Italian biography and local history. The closed stacks of the Rare Book Room, located on the fourth floor of the general stacks, have the Americana and limited and fine editions, which are not counted in the 29,500 volumes above.

The Ricker Library of Architecture numbers 19,700 volumes, 18,300 lantern slides, 21,000 photographs and drawings, 11,100 clippings, and 1,200 pamphlets. It is not only a good working collection for students and faculty in architecture, but it contains many of the older and rarer works of historical value.

The Library Science collection includes books and pamphlets on library science; library reports, bulletins, and catalogs; bookplates, photographs, lantern slides, recordings, projectors, recording machine, and various other types of audio-visual aids.

In the fall of 1946, in connection with the University's two new undergraduate divisions, library branches were established at Navy Pier in Chicago and at Galesburg. As of January 1, 1947, the Navy Pier Library had seats for 800 readers and a book collection of over 5,000 volumes, including 1,300 on deposit from the Chicago Public Library. On the same date, the Galesburg branch contained 2,000 volumes and had seats for about 300 students; space reserved for future expansion will raise the total seating capacity to 570. The book collections in both libraries were selected specifically for courses offered by the two divisions.

MUSEUMS AND COLLECTIONS

Numerous collections of objects of artistic, historic, or scientific value are maintained by the University and exhibited by its various departments. Those of Classical art and archaeology, Oriental culture, European culture, natural history, botany, entomology, geology, and zoology are under the care of the College of Liberal Arts and Sciences.

Agriculture.—The College of Agriculture, in cooperation with the Agricultural Experiment Station, maintains extensive demonstrational facilities, including more than a thousand acres of farm land located in close proximity to the Urbana campus. There are purebred flocks and herds of most of the breeds of livestock and poultry common to the state, and specimens of field, orchard, and garden crops which are commonly grown or offer prospects of success in Illinois. In the Agricultural Engineering Building there is a display of power and field machinery, tractors, home equipment, machines used in control of soil erosion, seed-cleaning and corn-grading equipment, farm

building plans, and rural electrification exhibits. The Dairy Manufactures Building houses full equipment for use in processing and storing milk and milk products. Likewise, the Horticulture Field Laboratory is equipped to process and store horticultural products, and the horticultural greenhouses contain growing specimens of a great variety of vegetables and ornamental plants. Field crop specimens are stored annually for class use, and weed exhibits include herbarium specimens and seed collections. A large livestock pavilion serves as an arena in which to display livestock in class work.

Art.—Works on display in the Architecture Building include a collection of casts, a collection of original oil paintings, many by notable American artists, a collection of paintings, lithographs, and brass *repousse* panels allocated to the University by the Public Works Administration of the Federal Government, a number of bronzes, water colors, lithographs, German and Japanese prints, Chinese embroideries, Balinese textiles, and other art objects. The Lorado Taft collection, including plaster casts of antique and modern sculpture and plaster and stone originals of much of Mr. Taft's own work, was acquired in 1937. This is displayed in part in the Architecture Building, the Library, the Auditorium, Lincoln Hall, and on the Urbana campus; the rest has been stored until such time as it can be displayed. Collections of paintings, consisting of old masters and moderns, have been presented to the University by Merle J. Trees and Emily N. Trees in annual installments since 1937. A collection of Oriental Art was presented by the Ewing families in 1943. The Lewis E. Meyers Collection of Americana was presented to the University in 1945. Current art exhibitions are hung in the galleries of the Architecture Building.

Botany.—The Herbarium, representing principally the flora of North America, is situated in the fireproof wing of the Natural History Building, and consists of approximately 300,000 specimens filed in standard steel cases. It is particularly rich in material from the upper Mississippi Valley and contains the most nearly complete collections of Illinois plants extant, including specimens of species now rare or possibly extinct. Collections of Illinois vascular plants by M. S. Bebb, F. Brendel, Agnes Chase, V. H. Chase, H. A. Gleason, E. Hall, E. J. Hill, G. N. Jones, F. E. McDonald, H. N. Patterson, R. Ridgway, J. Schneck, Hallock Shearer, L. M. Umbach, and many others are well represented. The Herbarium has acquired by exchange the recent sets of *Plantae Exsiccatae Grayanae*. Recently, a valuable collection of about 6,000 sheets of Rocky Mountain plants collected by Professor Aven Nelson of the University of Wyoming has been purchased, and Professor H. B. Dorner of the University of Illinois has donated his private herbarium, consisting chiefly of plants from Indiana. Through a gift of the issues prior to 1932 from the John Crerar Library (Chicago), and purchase of subsequent issues, the *Gray Herbarium Card Index of American Plants*, the *Index to American Botanical Literature* of the Torrey Botanical Club, and the *Tilden Index Algarum Universalis*, are now available in complete sets for consultation. Largely because of the interest of the late Professor T. J. Burrill and his students, Earle, Seymour, Waite, Clinton, and others, the parasitic fungi are well represented in the Herbarium. The early collections of these workers have been augmented by gifts from their personal herbaria totaling about 3,000 specimens. The Herbarium also contains tropical fungi chiefly from Puerto Rico, Hawaii, and the Philippine Islands, collected by the late Professor F. L. Stevens. Many of the well-known sets of Fungi Exsiccati are complete. Altogether these comprise 700 centuries. A set of *Phycotheca Boreali-americana*, representing over 2,000 named species, has been presented by Mrs. Mary S. Snyder. The facilities of the Herbarium provide unusual opportunities for taxonomic research in nearly all groups of plants.

Classical Archaeology and Art.—This museum is in Lincoln Hall. It contains reproductions of important works of art of pre-Greek, Greek, and Roman civilization. There are also original exhibits from each of these periods, consisting chiefly of smaller objects, such as Cretan seals, Greek and Roman coins, with a series of monetary tokens illustrating the development of currency, terra cotta statuettes, vases, bronzes, and fragments of Greek papyri. Many small articles of the Greek period in Egypt, discovered in the campaigns of the Egypt Exploration Fund, have been received through the generosity of the late Mr. W. G. Hibbard, Jr. There are water-color copies of Minoan frescoes and Pompeian scenes, and oil paintings of frescoes found in Roman villas and catacombs. There is also a valuable collection of early glass.

Dentistry.—The College of Dentistry has a museum of dental anatomy and comparative odontology containing 1,500 specimens.

Engineering.—The departments of the College of Engineering maintain collections of materials drawn from their respective fields. The Department of Ceramic Engineering has a collection of modern wares representing types of bodies, glazes, and methods of decoration. The Department of Mechanical Engineering is the custodian of a 600 h.p. vertical triple-expansion engine, directly connected to an electric generator, a type of machine in use in power-stations fifty years ago, and machines of historical value, including a 25 h.p. horizontal, double-acting, single-expansion steam engine, designed and built in 1871, with the help of students, by Professor S. W. Robinson, the first professor of mechanical engineering at the University. This engine supplied power to the first shop in this country in which instruction in the mechanic arts was given. In the mining museum, on the third floor of the Ceramics Building, is a collection of models showing the methods of working coal and ore mines, both sectionalized and operating mining machines, and appliances. Here also are collections of photographs and blueprints illustrative of mining and metallurgical design and construction; and collections of specimens of ores, coals, non-metallic minerals, and metallurgical products. In the Transportation Building are exhibits of track rails exemplifying practice since the beginning of railway construction; many devices employed in car and locomotive construction, historic and modern; and a collection of photographs showing the development of railroad equipment. A complete library of slides on engineering construction and works is housed in the Engineering Library. This collection is supplemented by working libraries in department offices of the college.

Entomology.—The entomological collections, including the Bolter and Nason collections, number over 305,000 pinned specimens. Another series of about 15,000, hermetically-sealed glass tubes, represents the life stages and injury of all the major American economic insects. There are also about 5,500 vials of the immature stages of insects. The MacGillivray collection of Tenthredinoidea, consisting of about 1,000 species and 400 type specimens, is housed in the Natural Resources Building with the collections of the State Natural History Survey.

European Culture.—This museum, located in Lincoln Hall, illustrates the development of the peoples of western Europe. It includes tools, weapons, and pottery of the stone and bronze ages; pottery, fragments of weapons, and glass and metal ornaments of the Gallo-Roman period; models illustrating life in northern Europe before the twelfth century; armor and weapons; church art, including carvings in wood and ivory; reproductions of early Irish art; coins and seals; ship models; illuminated manuscripts; a page of the Gutenberg Bible, and many incunabula. In the Renaissance section are models showing the development of the theatre; wood-cuts, engravings, and etchings; and color prints of Italian, Flemish, Dutch, and German paintings. The modern era is represented by color prints of English and French paintings, an excellent textile collection, and a small collection of china and glass.

Geography and Geology.—The Departments of Geology and Geography have charge of collections of materials classified under the headings of geology, mineralogy, paleontology, and geography. Some of the departmental materials are in the Museum of Natural History. The departments care for three cases of exhibits dealing with the material covered in general geology courses. Study collections include 12,000 rock specimens, 5,000 thin sections for microscopic study, 12,000 mineral specimens, and approximately 300,000 fossils, which include over 1,650 type specimens. The paleontological collections are available for research, especially Silurian faunas and those representative of Illinois. Among the collections available for advanced studies are those collected both privately and for the State Geological Survey by A. H. Worthen, T. E. Savage, A. H. Sutton, and H. W. Scott. The R. R. Rowley collection of fossils, purchased in 1945, includes approximately 200,000 fossils and 147 authentic type specimens (included in the numbers given above). They were collected chiefly from Mississippian formations in Missouri, Iowa, Illinois, and Kentucky, but include many other fossils. The collection is especially rich in crinoids and blastoids. The departments also maintain a file of the United States topographic maps, a collection of United States Geological Survey folios, foreign topographic maps, relief models and geographical maps, and several thousand black-and-white and Kodachrome slides, illustrating geological and geographical features throughout the world. A collection of aerial

photographs, illustrating land form, land use, and effects of rock variations, is being added currently.

Medicine.—The College of Medicine has two museums: the Anatomy Museum, including gross anatomy, histology, embryology, and neurology; and the Pathology Museum, including general, special, and medico-legal specimens.

Natural History.—This museum is on the third and fourth floors of the Natural History Building. It was begun in 1868 when the science departments first occupied University Hall, and it was developed there until it was moved to the Natural History Building in 1908-1909. It received its greatest impetus through the Columbian Exposition at Chicago in 1893, for the wealth of Illinois material assembled for that exposition by the late Professor S. A. Forbes and others reverted to the museum. The aim of the museum as an aid to the teaching of the natural sciences has been retained through the years. The exhibits have been developed mainly for use of classes in botany, entomology, ethnology, geography, geology, paleontology, and zoology. The synoptic series of invertebrates represents all the phyla and most of the classes, including extinct groups, by means of actual specimens, plaster casts, glass models, and fossils. The vertebrates, also arranged synoptically, include many mounted specimens and skeletons. The geological exhibits consist of semi-precious stones, meteors, and extensive collections in historical geology, which are arranged according to periods, including fossil animals of the glacial period in Illinois. The archaeological exhibits are rich in materials, especially pottery, from the Hopewell culture and other early American cultures. Besides the materials exhibited, the museum has a large collection of archaeological material, a collection of Mollusca consisting of more than one million items assembled by F. C. Baker, former Curator, the Daniels-Carr collections of fossil plants from the Mazon Creek region of Grundy County, large collections of Pleistocene fossils obtained through the efforts of the museum staff and the State Geological Survey, and numerous small collections—all of which are available for study, comparison, and research.

Oriental Culture.—This museum, located in Lincoln Hall, shows something of the civilization of the peoples of Egypt and Mesopotamia from whom the Greeks and Romans received many of the arts which they transmitted to western Europe. Among its collections are 1,700 unpublished cuneiform tablets, most of them dating from the twenty-fifth to the twentieth century B.C., and many rare Babylonian and Assyrian seals. The Egyptian room contains pottery, examples of hieroglyphic and demotic writing, papyrus fragments from Oxyrhynchus, statuettes and many small objects given by the late Mr. W. G. Hibbard, Jr.

Pharmacy.—The College of Pharmacy has a museum including more than 10,000 specimens of crude drugs and technical products. One collection is classified according to botanical origin and is arranged in cases illustrating habitat, commerce, etc. Another collection contains every drug officially listed in the United States Pharmacopœia since 1820 or in the National Formulary since 1888.

Zoology.—The zoological collections in the Natural History Building present a synoptic view of zoology, including representatives of all orders and classes. There are also the Ziegler wax models and other preparations illustrating the embryology of vertebrates and invertebrates. The extensive collections of animal parasites and embryological preparations are especially noteworthy. The department has a comprehensive series of skeletons and skulls, supplying a good representation of the vertebrate groups. This skeletal material from different parts of the world is available for comparative studies and research. In the Vivarium Building are study collections of all vertebrate groups found commonly in Illinois and adjacent states and insects obtained in a long-time study of seasonal population changes. The collections of the State Natural History Survey are available for illustrative purposes in class work and for original research by advanced students in zoology. Extensive collections, particularly of the Vertebrata and Mollusca, are available for study and graduate teaching in the research collections of the Natural History Museum. As an outdoor laboratory, the University maintains two tracts of woodland a few miles northeast from Urbana, namely, the Brownfield Woods and the William Trelease Woods. Both of these are surrounded by a margin of open "prairie" land. On the edge of the Trelease Woods a pond has been dug for a water habitat.

ADMISSION

For admission to the colleges and schools at Urbana and to the Undergraduate Divisions at Chicago and Galesburg, official credentials should be sent directly from each institution previously attended to the officers listed below. (For admission to the professional colleges in Chicago, see page 110.)

- (1) For admission at Urbana, to the Registrar, Urbana.
- (2) For admission to the Undergraduate Division in Chicago, to the Examiner and Recorder, University of Illinois, Navy Pier, Chicago 11.
- (3) For admission to the Undergraduate Division at Galesburg, to the Examiner and Recorder, University of Illinois, Galesburg, Illinois.

A permit to enter is issued only on the basis of official detailed credentials, filed in advance, which meet the requirements for admission. Credentials accepted for admission become the property of the University and are kept permanently in the files. If an applicant's credentials are not received until the week before the date for registration, it may not be possible to notify the applicant of his status prior to his arrival on the campus.

The facilities of the University in certain lines of work have become taxed by very heavy enrollments. In some instances it may be necessary to close admissions because of limited equipment or staff. This will be done only where essential in order to maintain the proper quality of work. The University must, however, reserve the right to close enrollments when its facilities in a division or college can not accommodate additional students.

Applications for admission in October, 1947, are passed upon under a plan of progressive admission, the details of which may be secured from the Registrar. Veterans who are residents of Illinois and other residents who are best qualified by previous records are given priority. Resident non-veterans seeking transfer from other institutions must present a scholarship average of not less than 3.5 (half-way between B and C). Nonresidents coming directly from secondary schools, who rank in the upper twenty-five per cent of their class, and nonresident transfers from other institutions, who have not less than a 4.0 (B) scholarship average, are considered.

Applicants for admission who come from foreign countries must bring complete official credentials. Certificates from Oriental and Slavic countries must be accompanied by certified translations.

Qualified applicants are admitted at the beginning of any term, except that the Library School will not admit new students at the beginning of the second semester. Applicants for admission to the College of Engineering, the College of Law, and the School of Journalism will find it to their advantage to enter the first semester rather than the second. (For statement regarding admission of veterans, see page 108.)

Information Service for New Students

The University, on invitation of the secondary schools of the State, sends representatives to College Day Programs and other conferences held in various parts of the State for guidance purposes. These representatives are available to prospective students and parents who desire information about the University. In the spring of each year the University conducts an Information Office in Chicago. Administrative and counseling officers from Urbana are available there during this period. The Alumni Association has a permanent office in the LaSalle Hotel where prospective students are always welcome and where many questions about the University can be answered.

Freshman Week

A brief period in the fall, immediately preceding registration of upperclassmen, is set aside as "Freshman Week." The purpose of this is to give the freshman assistance in becoming oriented to his new environment and to assist him in his registration.

Physical Examinations

All new students, on entering the University, are required to take a physical examination. Before registration, a new student must secure an appointment with the University Health Service for his physical examination. The examination is given by the University at the time of appointment without cost to the student. If the student fails to take the examination at the appointed time and does not present an excuse from the Registrar, a fee of \$5 is charged to provide for a special examination, or the student will be required to be examined at his own expense outside the University in a manner meeting the requirements of the Health Service.

Candidates for admission to the School of Physical Education must pass special physical and medical examinations. Those entering occupational therapy must pass a special health examination.

GENERAL REQUIREMENTS FOR ADMISSION

The general requirements for admission to the undergraduate departments of the University are indicated in the following paragraphs.

Age

An applicant must be at least sixteen years of age. The dean of the college concerned, however, may admit on petition a student fifteen years of age who meets all other requirements for admission and who is to reside, while attending the University, with his parents or guardian, or with someone selected by them.

High School Graduation

To be admitted by certificate, an applicant must be a graduate of an accredited secondary school. (For admission of high school seniors, see below.) If the school is in Illinois, it must be accredited by the University of Illinois; if located elsewhere, its rating must be equivalent to accreditation by the University of Illinois. (For a list of sources from which credits are accepted on certification, see page 104; and for a statement of the conditions on which non-graduates may be admitted, see page 104.)

High School Graduates Who Rank in the Upper Half of Their Class.—The Registrar is authorized to admit, without adhering to the usual requirements as they pertain to majors and minors, an applicant whose rank in scholarship is in the upper fifty per cent of his graduating class. Such a student, however, must present those specific high school courses that are prerequisite to courses in the curriculum which he desires to follow in the University.

High School Graduates Who Rank in the Lowest Quarter of Their Class.—A graduate of an accredited high school whose rank in scholarship is in the lowest quarter of his graduating class, and who meets the requirements as stated below, is admitted by certificate to probationary status and, in connection with his first registration in the University, is required to take such tests as may be prescribed by the Student Personnel Bureau. Such a student, immediately upon registration, is placed under the special supervision of the dean of the college or the director of the school in which he is enrolled. He may be required to carry a reduced program of work or a program especially arranged to meet his needs.

The student's rank is to be based on work completed in grades nine, ten, eleven, and twelve in the case of four-year high schools, and on work completed in grades ten, eleven, and twelve in the case of three-year senior high schools.

The Registrar is authorized to admit to the University any high school senior enrolled in his last semester and within a month of his graduation from an accredited school which closes its semester or term after the opening date of a University term, even though he has not received a diploma of graduation, provided that evidence is

submitted by the high school showing that the senior would have been graduated if he had remained in school until the end of the semester.

Fifteen Units Required

Fifteen units of acceptable secondary school work are required, including the following:

I. Two majors and one minor, selected from Groups 1-5 below. One of the majors must be English. (For definitions of *Unit*, *Major*, and *Minor*, see below.)

II. A total of at least nine units from the fields of English, foreign language, mathematics, science, and social studies, including preparation amounting to a major or minor sequence in at least three different fields. (See Groups 1-5 below.)

III. All subjects prescribed for the curriculum which the applicant desires to enter, as stated in the table on pages 102 and 103.

IV. The six remaining units necessary for admission may be selected from any of the high school subjects which are accepted by an accredited school toward its diploma and which meet the standards for accrediting as defined by the University of Illinois. Fractional credits of the value of less than one-half unit will not be accepted. Not less than one unit of work will be accepted in a foreign language, elementary algebra, plane geometry, physics, chemistry, or biology.

The University realizes the obligation of the high school to meet fully the needs and interests of all its pupils. It, therefore, believes that high schools should offer courses in such fields as agriculture, art, commerce, home economics, industrial arts, and music. Furthermore, by accepting them for admission, it recognizes that they contribute to satisfactory preparation for college work.

Definitions

Unit.—A *unit* course of study in the secondary school is a course covering an academic year and including not less than the equivalent of 120 sixty-minute hours of classroom work. Two hours of work requiring little or no preparation outside the class are considered as equivalent to one hour of prepared classroom work.

Major.—A *major* consists of three unit courses in one field. (See special requirements for a major in each of the various fields as stated below.)

Minor.—A *minor* consists of two unit courses in one field. (See special requirements for a minor in each of the various fields as stated below.)

Majors and Minors

The required majors and minors defined above may be selected from the following five groups:

(1) *English*.—(In all cases one major must be in English.) Only courses in history and appreciation of literature, composition (including oral composition when given as a part of a basic English course), and grammar will count toward a major.

(2) *Foreign Language*.—Three units in one language constitute a major. Two units in one language constitute a minor.

(3) *Mathematics*.—Only courses in algebra, plane geometry, solid and spherical geometry, and trigonometry will be accepted toward a major or minor in this subject. (General mathematics may be accepted in lieu of algebra and geometry in cases where the content of the course is essentially the same as that ordinarily included in algebra and geometry.)

(4) *Science*.—(Including physics; chemistry; biology, or botany and zoology; general science, or physiology and physiography; astronomy; and geology.) The three units required for a major must include at least a total of two units chosen from one or more of the following subjects: physics, chemistry, botany, and zoology. Biology may be offered in place of botany and zoology. The two units required for a minor must include at least one unit from the above subjects.

(5) *Social Studies*.—(Including history, civics, economics, commercial or economic geography, and sociology.) The three units required for a major must include at least two units in history. The two units required for a minor must include at least one unit in history.

**REQUIRED AND RECOMMENDED SUBJECTS FOR ADMISSION
TO THE VARIOUS UNDERGRADUATE CURRICULA**
(See also descriptive material about majors and minors on page 101)

COLLEGES AND SCHOOLS	SUBJECTS REQUIRED FOR ADMISSION	SUBJECTS RECOMMENDED FOR ADMISSION
College of Liberal Arts and Sciences General Curriculum with majors in Bacteriology, Botany, Classics (Latin or Greek), Economics, English, Entomology, French, German, Geography, Geology, History, Philosophy, Political Science, Psychology, Sociology, Spanish, Speech, Zoology. General Curriculum preparatory to Education, Journalism, Law. Division of General Studies. Occupational Therapy (See statement of special requirements on page 107). Teacher-training Curricula.	English, 3 units. ¹ Language, 2 units. ²	Language, 3 units in one language, instead of the required 2 units. Science, 2 units (including biology). Social studies, 2 units.
General Curriculum with majors in Chemistry, Home Economics, Physics, Mathematics, Physiology. Special Curricula preparatory to Dentistry, Medicine. Teacher-training Curricula.	English, 3 units. ¹ Language, 2 units. ² Algebra, 1 unit. Geometry, 1 unit.	Mathematics, 3 units, instead of the required 2 units. Science, 2 units (including physics or chemistry or both). Social studies, 2 units.
Special Curricula in Chemistry and Chemical Engineering.	English, 3 units. ¹ Language, 2 units. ² Algebra, 1½ units. Geometry, 1 unit.	Language, 4 units (including 2 units in French and 2 units in German). Mathematics, 3 units, instead of the required 2½ units. Science, 2 units (including physics or chemistry or both). Social studies, 2 units.
College of Agriculture Curricula in Agriculture, Dairy Technology, Floriculture, Home Economics, Pre-Forestry, and Pre-Veterinary. Teacher-training Curricula.	English, 3 units. ¹ Algebra, 1 unit. Geometry, 1 unit.	Mathematics, 3 units, instead of the required 2 units. Science, 2 units (including physics). Social studies, 2 units.
College of Commerce All Fields (Accountancy, Banking and Finance, Commerce and Law, Commercial Teaching, Economics, Industrial Administration, Management, Marketing, Public Affairs).	English, 3 units. ¹ Algebra, 1 unit. Geometry, 1 unit.	Advanced algebra, ½ unit. Science, 2 units (including 1 unit with laboratory).
College of Education Industrial Education Curriculum (other curricula require junior standing in the University).	English, 3 units. ¹ Algebra, 1 unit. Geometry, 1 unit.	Industrial arts, 2 units. Science, 2 units (including physics or chemistry or both). Social studies, 2 units.
College of Engineering⁴ All Curricula (Aeronautical, Agricultural, Ceramic, Civil, Electrical, General, Mechanical, Metallurgical, Mining, Public Health, Sanitary Engineering, Engineering Physics).	English, 3 units. ¹ Algebra, 1½ units. ⁵ Plane Geometry, 1 unit. Solid Geometry, ½ unit. ⁵	Language, 2 units. Science, 2 units (including physics or chemistry or both). Social studies, 2 units. Industrial Arts, 2 units.

REQUIRED AND RECOMMENDED SUBJECTS — (Concluded)

COLLEGES AND SCHOOLS	SUBJECTS REQUIRED FOR ADMISSION	SUBJECTS RECOMMENDED FOR ADMISSION
College of Fine and Applied Arts Curriculum in Architecture (with general and construction options).	English, 3 units. ¹ Algebra, 1½ units. ⁵ Geometry, 1 unit.	Freehand drawing, 1 unit. Science, 2 units (including physics and chemistry). Social studies, 2 units (including economics and history).
Curricula in Art (Painting, Art Education, Commercial and Industrial Design).	English, 3 units. ¹ Language, 2 units. ²	Freehand drawing, 1 unit. Language, 3 units in one language, instead of the required 2 units. Social studies, 2 units.
Curricula in Landscape Architecture and Landscape Operation.	English, 3 units. ¹ Algebra, 1 unit. Geometry, 1 unit.	Botany, 1 unit. Freehand drawing, 1 unit. Mathematics, 3 units, instead of the required 2 units. Social studies, 2 units (including civics and economics).
School of Music All Curricula (Instrumental, Voice, and Theory Majors, and Music Education).	English, 3 units. ¹ Language, 2 units. ² Music (individual examination required ⁶).	Music, 1 unit, and additional private study for two years. Science, 1 unit (with laboratory). Social studies, 2 units.
School of Physical Education Curriculum for Men and Curriculum for Women.	English, 3 units. ¹	Science, 3 units (including biology). Social studies, 2 units. Health and safety education, and participation in school programs of physical education and athletics.
Division of Special Services for War Veterans Individual Curricula for Veterans.	See statement of requirements on page 108.	

NOTES

¹ English.—Only courses in the history and appreciation of literature, and in composition (including oral composition when given as a part of a basic English course) and grammar, will count toward the three units in English required as a major for admission to all curricula. Four units in English, while not required for any curriculum, are recommended by all the colleges and schools.

² Language.—The foreign language requirement for admission to any curriculum is fulfilled by two units in any one of the following: German, French, Spanish, Italian, Latin, Greek. For some curricula three units in one language are recommended, and for some it is advantageous to have four units in one language or a combination of languages. Less than one unit in a language is not acceptable for admission.

³ Pre-Medical Requirement.—A student entering the pre-medical curriculum as a freshman must have a scholarship rank in the upper half of his high school graduating class. A student transferring to this curriculum from another college or university must have a scholastic average in his collegiate work not less than 3.5 in terms of the grading system of the University of Illinois.

⁴ Engineering.—A nonresident student entering the College of Engineering as a freshman must rank in the upper twenty per cent of his high school class; if entering with advanced standing, he must have a scholastic average of at least 4.0 in terms of the grading system of the University of Illinois.

⁵ Mathematics.—In Engineering and Fine and Applied Arts where advanced algebra or solid geometry, or both, are required, students who have only one unit in algebra and one unit in geometry, and who meet all other entrance requirements, may be admitted on condition that the deficiency be removed during their first year of residence. Where one unit in algebra and one unit in geometry are required for admission, general mathematics will be accepted if the content of the course is essentially the same as that ordinarily included in algebra and plane geometry. For all curricula involving chemistry (to which one unit in physics or chemistry or 2½ units in mathematics are prerequisite), students without credit in physics or chemistry who have only two units in mathematics will be required to take college algebra.

⁶ Music Examination.—Each applicant for admission to the School of Music is required to take an individual examination in his major field for the purpose of demonstrating that he is qualified and has sufficient knowledge of music to enter courses in applied music. The examination is given four times during the year. No entrance credit is allowed. For further information, write to the School of Music, Urbana.

Required and Recommended Subjects

The second column of the table on pages 102 and 103 shows the special subjects prescribed for admission to the various undergraduate curricula. These are the subjects which are considered essential preparation and without which the student may not be admitted. The requirements are stated in units of credit and not in terms of majors and minors. These prescribed subjects may be counted toward fulfilling the major and minor requirements. In planning his high school work the prospective student should be guided also by the recommended subjects, shown in the third column.

Graduates of Unaccredited Secondary Schools

Graduates of unaccredited secondary schools which offer four years of instruction are admitted by examination. The Registrar, however, is authorized to admit a student who is a graduate of such an unaccredited secondary school and whose general scholarship rank is in the upper twenty-five per cent of his graduating class, subject to his passing at the University in advance of admission: (1) a test in English composition and rhetoric; and (2) such other examinations and tests in high school subjects as may be necessary to complete the University entrance requirements and the special requirements of the chosen curriculum.

Students from Accredited Secondary Schools Who Are Not Graduates

An applicant who has attended, but who has not been graduated from, an accredited school, must pass entrance examinations in English composition and four units in additional subjects to be designated by the University authorities. The remaining units required for admission may also be made in entrance examinations or may be offered by certificate from an accredited school.

Graduates of Three-Year Senior High Schools

In the case of graduates of a school organized as a three-year senior high school, including grades ten, eleven, and twelve, at least twelve units must have been taken in the senior high school. Two majors and one minor, or four minors, must be from the fields of English, foreign language, mathematics, science, and social studies. (See Groups 1-5, page 101.) Either a major or a minor must be from the field of English. One unit of a foreign language and one unit of mathematics may be accepted from work completed in the ninth grade as a part of the majors and minors, provided at least seven units of senior high school work have been completed in subjects included in the above-enumerated fields. The remaining five units may be selected from any of the senior high school subjects which are accepted by an accredited high school toward its diploma and which meet the standards for accrediting as defined by the University.

The transcript of credits certified by the senior high school must show any credit in mathematics or foreign language accepted from the ninth grade if these subjects have been continued in the senior high school. Fractional credits of the value of less than one-half unit will not be accepted. Not less than one unit of work will be accepted in a foreign language, elementary algebra, plane geometry, physics, chemistry, and biology.

Sources of Acceptable Credits

The credits required for admission to the undergraduate departments, as detailed above, may be secured in three ways: (1) by *certificate* from an accredited high school or other secondary school; (2) by *examination*; and (3) by *transfer* from another university or college of recognized standing.

Admission by Certificate

The High School Visitor of the University visits and inspects, on request, high schools and other preparatory schools throughout Illinois. On the basis of his reports, approved by the Committee on Admissions from Secondary Schools, the University accredits all work which is found to be sufficiently well done. For a list of accredited schools, address the High School Visitor, Room 209, Administration Building. Not all the schools named in this list are accredited for the same amount of work, nor all for the same subjects. A student presenting a certificate from any one of these schools is given entrance credit for all the subjects named therein for which the school is specifically accredited.

Entrance credits are also accepted on certificate from the following sources:

- (1) Schools accredited by the North Central Association of Colleges and Secondary Schools.
- (2) Schools accredited to the state universities which are included in the membership of the North Central Association of Colleges and Secondary Schools, provided the certificate shows that the Illinois standard time requirements have been met.
- (3) Schools accredited by the Southern Association of Colleges and Secondary Schools.
- (4) Schools approved by the New England College Entrance Certificate Board.
- (5) High schools and academies registered by the Regents of the University of the State of New York.
- (6) Schools approved by state universities in states not included in the territories of the above-mentioned accrediting agencies.
- (7) The state teachers colleges of Illinois and other state teachers colleges having equal requirements for graduation.

Admission by Examination

Entrance examinations are given by the University several times each year as shown in the calendar on page 4. They are given in Chicago five times each year, in March, June, August, September, and December. These examinations cover substantially all the subjects required or accepted for admission. For brief outlines of the requirements in the various subjects, textbooks suggested for study, and examination programs, address the Registrar.

Credit for admission will be accepted from examinations conducted by the College Entrance Examination Board and by the New York Regents, if passed with a grade of sixty per cent or higher, subject to the requirements of majors, minors, and special subjects as listed on preceding pages.

Admission by Transfer

A person who has attended another college or university of recognized standing will be considered for admission to the University of Illinois on presenting (1) a transcript of his college record, (2) a certificate of honorable dismissal from the institution from which he comes, and (3) an official statement of his preparatory school work.

A person whose record at some other institution comes within either of the following classifications may enter the University only on approval of the dean of the college concerned and under conditions imposed by him: (1) A person on probation at or dropped from another institution for poor scholarship or for disciplinary reasons. (In the latter case he must also obtain approval of the University Senate Committee on Discipline.) (2) A person whose scholastic average is less than "C" (3.0) in terms of the grading system of the University of Illinois.

No substitutes will be accepted for the high school subjects *prescribed* by the University or for the requirement of high school graduation, except that: (1) A student who comes from an institution rated in Class A by the University with a record of at least thirty semester hours without failures, and with an average grade ten points above the passing grade of the college, may be matriculated in a similar curriculum in the University, irrespective of deficiencies in prescribed subjects (except when necessary as prerequisites for advanced work to be taken here), whether or not he is a high school graduate. (2) The Registrar is authorized to waive the high school graduation requirement, but not the subject requirements, in the case of a transfer student who has completed a year of satisfactory work in a college, normal school, or junior college rated in Class A or Class B by the University.

Credits may be accepted for advanced standing from another university or a college, or a junior college of recognized standing, or from a state teachers college. A student who has passed a course at the University of Illinois may not be given credit for the same course taken elsewhere. In general it is unwise for a student to enter a specialized curriculum at the University as late as the beginning of the senior year. Students intending to transfer to the University should send their credentials to the Registrar as early as possible.

If transferring to the pre-medical curriculum, the student must have a scholastic average in his college work of at least 3.5 in terms of the grading system of the University of Illinois.

The registration of students in chemistry courses, other than the elementary courses open to freshmen and a few courses for sophomores, is restricted to those having a

grade-point average of at least 3.5 in all subjects, exclusive of the basic courses in military training and the required work in physical education and hygiene, or an average of at least 3.5 in chemistry courses. Transfer students to be admitted must have a corresponding record in the institution (or institutions) from which they transfer and must maintain a similar average at the University of Illinois.

Students in large numbers enter the University after completing one, two, or even three years at the other universities and colleges in Illinois. In recognition of this situation the University is cooperating cordially with the higher institutions in the state in their endeavor to coordinate their work with that of the University. In order that information may be had in advance in regard to the credit to be allowed from a specific institution, the University has adopted certain standards for accrediting and has classified the higher institutions within the state in accordance with the manner in which they are able to meet these standards. Students from the colleges which have met these standards in full, on entering the University, receive hour-for-hour credit; but in applying for a degree they are expected to conform to all the requirements of their chosen curricula. The Registrar of the University, on application, will furnish full information in regard to the transfer of credit.

Advanced Standing by Examination

Advanced standing in the undergraduate colleges is granted only by examination unless the applicant is from an approved school. Proficiency examinations for advanced standing are described on page 115.

Undergraduate Credit for Service and for Education in the Armed Forces

The University, under general provisions administered by the Committee on Admissions from Higher Institutions, will recognize for college credit certain training and experience in the Armed Forces. Credit in military science and required physical education and hygiene will be approved when a person, honorably discharged, presents evidence that he has completed the basic training program in the Army, Navy, Marine Corps, or Coast Guard. The Committee will recognize for credit correspondence courses of college grade, the general educational development examinations and the examinations in special fields prepared by the United States Armed Forces Institute. The College Training Programs of the Army, Navy, and Marine Corps will be accepted as credit transferred from the institution where it was taken. The Committee will consider for credit work done in Army, Navy, Marine Corps, and Coast Guard Specialized and Technical Schools where its equivalence in terms of college courses is established by proficiency examinations, or where such courses have been recommended for college credit in the Guide to the Evaluation of Educational Experience in the Armed Services published by the American Council on Education.

Unclassified Students

Persons over twenty-one years of age may be admitted as unclassified students (not candidates for a degree) in the undergraduate colleges, provided they secure the recommendation of the instructor whose work they wish to take and the approval of the dean of the college concerned. They must give evidence that they possess the requisite information and ability to pursue profitably, as unclassified students, their chosen subjects, and they must meet the special requirements for the particular college in which they wish to enroll, as stated below.

An unclassified student is not matriculated and must pay a tuition fee of \$7.50 a semester in addition to the regular tuition fee.

No one may enroll as an unclassified student in any school or college of the University for more than two years, except by special permission, application for which must be made through the dean of the college.

A person registered as an unclassified student in one college and desiring to take a course in another college of the University must obtain the approval of the dean of the latter college.

For certain of its colleges the University has adopted special requirements for the admission of unclassified students. These are as follows:

College of Agriculture.—In the case of men, two years of experience in practical agriculture are required. Any applicant accepted who is unable to satisfy the regular entrance requirements in English must study English in the University until the deficiency is removed.

College of Commerce and Business Administration.—A written application must be presented, accompanied by official certificates showing the character and extent of preparatory work accomplished and honorable dismissal from the school last attended. Statements from employers or official superiors may also be presented as collateral evidence of the candidate's qualifications.

College of Engineering.—The applicant must satisfy the regular entrance requirements in mathematics and English (algebra, 1½ units; plane geometry, 1 unit; solid geometry, ½ unit; English composition and literature, 3 units).

College of Law.—No credit earned by an unclassified student in the College of Law may be counted toward a degree in law.

College of Liberal Arts and Sciences.—A written application must be presented, accompanied by official certificates indicating the applicant's preparatory work and showing honorable dismissal from the school last attended.

Admission to Correspondence Courses

Correspondence courses are open to any applicants who can meet the University entrance requirements and also to persons eighteen or more years of age whose applications are approved by the Dean of University Extension. For further information address the Dean, 118a Illini Hall, Champaign, Illinois.

Admission to the Graduate School

Admission to the Graduate School may be granted to graduates of institutions whose requirements for the bachelor's degree are substantially equivalent to those of the University of Illinois. Admission may be to full graduate standing, to graduate standing with certain deficiencies to be removed, or to special status without reference to a degree. There are special scholastic requirements for admission to graduate work in chemistry, chemical engineering, music, medicine, and dentistry. Admission to the Graduate School does not, however, imply admission to candidacy for a degree, and gives no right or claim to be so admitted. A mere accumulation of "credits" or "grades" is not sufficient. Application blanks for admission may be secured from the Registrar. Every applicant must submit with his application for admission an official transcript of his college record.

Admission to the Occupational Therapy Curriculum

The curriculum in occupational therapy, leading to the degree of Bachelor of Science in Occupational Therapy from the College of Medicine, is offered to men and women who are able to meet the requirements listed below.

At present the program consists of a minimum of five semesters in the College of Liberal Arts and Sciences at Urbana, and five terms in the College of Medicine in Chicago. The work on the Urbana campus is divided into two levels. The first two semesters constitute the pre-professional curriculum, while the third, fourth, and fifth semesters constitute the professional phase of the work at Urbana.

Pre-Professional Curriculum.—An applicant for admission to this curriculum must meet the following requirements:

- (1) He must be a graduate of an accredited high school and meet the general requirements for admission to the College of Liberal Arts and Sciences;
- (2) He must rank in the upper 50 per cent of his high school graduating class, or pass satisfactorily examinations given by the Student Personnel Bureau;
- (3) He must be under thirty years of age;
- (4) A health examination given by the University Health Officer must be passed satisfactorily;
- (5) An interview is required with either the Associate Dean of the College of Liberal Arts and Sciences or the Director of Occupational Therapy.

All of the above requirements must be certified to the Registrar before a permit to enter is issued. The applicant should arrange for the examinations and interview well in advance of the beginning date of the term in which he plans to enter.

Professional Curriculum.—The number of students admitted to the professional curriculum is limited by facilities in the College of Medicine. Selections for admission to this curriculum are made by the Committee on Admissions. Candidates are selected on the basis of scholastic record and such examinations and other evidence as the Committee

may require, and are notified of their acceptance or rejection prior to the beginning of their third semester of registration at Urbana.

Permission to pursue that portion of the work which is given at the College of Medicine is dependent on the achievement in previous university work. A university point average of 3.5 is a minimum requirement. Eligibility is determined by the Admissions Committee of the Curriculum in Occupational Therapy after a careful study is made of all pertinent evidence. Other factors being equal, preference will be given to candidates who are residents of Illinois.

Transfer Students.—Transfer students must complete an interview as indicated in the general admission requirements, and they must also pass the physical examination. The results must be certified to the Registrar before a permit to enter is issued. Before being eligible for admission to the College of Medicine, students, in all but exceptional cases, must complete a minimum of two semesters in residence at Urbana. After admission by transfer, such students are governed by the same regulations applicable to other students in the curriculum.

Admission of Veterans

Veterans may enter the University either in the Division of Special Services for War Veterans or in any of the colleges or schools for which they have the essential prerequisites. They may qualify for admission under the entrance requirements described above or on the basis of previous work in college, graduation from high school, the passing of examinations, or other satisfactory demonstration of ability to carry college work.

ADMISSION TO THE PROFESSIONAL SCHOOLS

A student in the undergraduate divisions of the University will not be permitted to transfer his registration to any of the professional schools of the University in Chicago while his record shows a deficiency in any of the subjects which, as general requirements of the University, are a part of his curriculum. A student who enters one of the professional schools at Urbana deficient in any general requirement of the University will be required immediately to register in the subject or subjects in which he is deficient and to continue such registration in successive semesters until the University requirement is met in full.

Admission to the College of Education

Admission to the curriculum in industrial education is granted on admission to the University as a freshman (for requirements see page 102). Candidates for admission to all other curricula of the College of Education must be able to matriculate in one of the undergraduate colleges and must offer, in addition, two years of undergraduate work, comprising not less than fifty-six semester hours of college credit exclusive of required courses in physical education and military science. No applicant whose grade-point average in all college work is less than 3.5 will be admitted except on recommendation of the College Committee on Admissions and Guidance.

Admission to the School of Journalism

For admission to the School of Journalism as a candidate for a degree, a student must be able to matriculate in one of the undergraduate colleges of the University and must offer in addition, sixty semester hours of work with an average grade of "C" in one of the undergraduate curricula, including physical education and military science. A candidate who seeks admission from another institution must offer the same amount of work in an established curriculum of that institution. An applicant for admission will find it to his advantage to include in his pre-journalism curriculum at least six hours of rhetoric and composition, eight hours of history, political science, economics, and sociology, and ten hours of science (including mathematics).

Admission to the College of Law

Applications for admission to the three-year curriculum in the College of Law are considered from graduates and students of senior standing at the University of Illinois or other approved colleges and universities, who have achieved a grade average of at least 3.5 in terms of the grading system of the University of Illinois.

Applications for admission to the four-year curriculum in the College of Law are considered from students who have completed in residence one-half of the number of

hours required for a bachelor's degree in a college of the University of Illinois, or one-half of the number of hours required for a bachelor's degree in a college approved by the University, and who have achieved a weighted grade average of at least 3.5.

In satisfying the regular admission requirements for either curriculum, veterans of World War II may count credit acceptable to the University of Illinois, based on an evaluation of educational experience, general educational development, and correspondence work taken while in the Armed Forces, provided that the total credit offered for admission meets both the qualitative and quantitative requirements stated respectively for admission to those curricula, and provided further that the applicant for admission has completed at least one year's work in residence in the University of Illinois or in a college approved by the University.

Veterans of World War II who, since September 16, 1940, have been in active service in the military or naval forces of the United States or one of its co-belligerents, for a period of at least twelve months, and have been discharged or released therefrom under conditions other than dishonorable, may be admitted to the three-year law curriculum on satisfying the following requirements:

(1) Attendance in residence for a period of two years, equal to at least four semesters, in a college of the University of Illinois or in a college or university of approved standing, and the completion in residence of one-half of the number of hours required for a bachelor's degree by a college of the University or a college approved by the University.

(2) Attainment of a weighted grade average in college work of at least 4.0.

In meeting these requirements, the period a veteran was assigned for a course of education or training under the Army Specialized Training Program or the Navy College Training Program or as a cadet or midshipman in one of the service academies may be counted in satisfaction of either the requirement for resident study in an approved college or university or the requirement of one year's active military or naval service, but not both.

The College of Law is compelled because of lack of space and facilities in classrooms and library to limit its enrollment. There is a Committee on Admissions which considers all applications of candidates who meet the above minimum requirements. The Committee gives preference to applicants demonstrating the greatest ability, to veterans, and to residents of the State of Illinois. Applications must be filed not less than sixty days before the opening of the semester for which registration is desired. For further information address the Dean of the College of Law, University of Illinois, Urbana.

Admission to the Library School

For admission to the Library School a bachelor's degree in arts or sciences from the University of Illinois or other equivalent training is required. Applicants must give evidence of superior scholastic ability and professional promise for librarianship.

In general, only those applicants will be admitted whose undergraduate work averages at least 3.5, or its equivalent as determined by the University for institutions using a different grading system, and whose performance is satisfactory on tests administered by the Student Personnel Bureau. In exceptional cases an applicant whose average approximates 3.5 may be admitted provided he demonstrates superior performance on appropriate Personnel Bureau tests.

Evidence of professional promise for librarianship will be secured from letters of reference and other sources. A personal interview with a representative of the school may be required.

Men and women who can meet the formal requirements for admission and who have the following qualifications are encouraged to apply: (1) individuals with well-adjusted personalities, who enjoy working with people as well as with books and who are willing to accept social responsibility and leadership; (2) individuals with good physical health, free from serious physical defects which would handicap them in the performance of library services; (3) those under thirty-five years of age, and those older than thirty-five who are already engaged in library service, or in other work requiring similar intellectual qualities.

Correspondence regarding admission should be addressed to the Assistant Director of the Library School from whom the necessary application blanks can be secured. No student should complete his plans for attending the Library School until he has received notification of his admission.

ADMISSION TO THE PROFESSIONAL COLLEGES IN CHICAGO

Applications for admission to any one of the University's three professional colleges in Chicago—Dentistry, Medicine, or Pharmacy—should be addressed to the Examiner, 1853 West Polk Street, Chicago 12. Official credentials, covering all collegiate and secondary school work done by the applicants, must be sent directly to the Examiner from each institution attended. Since space limitations make it necessary to restrict enrollment, applicants should have their credentials mailed to the Examiner as early as possible. Applications will be received at any time within nine months before the date for registration. Credentials accepted for admission become the property of the University and are kept in the files.

Health Certificates.—For each applicant whose previous record meets the requirements for admission, or who appears likely to meet them before the opening of the school year when he desires to enroll, the health officer at the last institution attended will be asked to furnish a certificate concerning the applicant's health, both physical and mental. When the health service of an institution can not supply the desired information, the applicant should have his family physician send in a report on his physical condition. If a student's application for admission is approved at a date so late as to make it impossible to obtain a health certificate before classes begin, he may be registered temporarily pending a satisfactory report.

Physical Examination.—Each applicant who is accepted for admission must report to the University Health Service for a physical examination prior to registration. Appointments for this examination are usually made in the month preceding registration. Each applicant is also urged to report to his family physician and dentist for a complete examination, including Schick and Dick reactions and smallpox vaccination. The applicant's eyes should also be examined and fitted with glasses if needed. A statement from the family physician regarding findings and immunization procedures should be forwarded to the Health Service of the University. (Students unable to show negative Schick and Dick reactions and recent successful smallpox vaccinations must report for immunization before registration for the second year in the College of Medicine.)

Selection of Applicants.—As the capacity of the Colleges of Dentistry, Medicine, and Pharmacy is limited, selection of applicants is necessary. Selection is made by committees on admission, one for each college. No student will be considered who is on scholastic probation or who has been dropped for poor scholarship from the last institution attended prior to seeking admission to the University of Illinois. Applicants who meet in full the course and grade-average requirements will be considered by the appropriate committee. In selecting applicants, each committee will take into consideration such factors as scholastic records, the schools and colleges previously attended, letters of recommendation, especially from teachers in the laboratory sciences, health records, aptitude tests, and such special examinations as may be determined by the committee. Other factors being equal, preferential consideration will be given to applicants who are residents of Illinois. A personal interview with the committee is desirable. Invitations to register will be sent to approved applicants.

Deposit.—Each applicant who is assigned a place in any class, in the Colleges of Dentistry, Medicine, and Pharmacy, is required to make a deposit of \$15 within two weeks of the date of notification that he will be admitted. This deposit will be applied on fees assessed against him at the time of registration. Failure to pay this deposit within the specified time will subject the applicant to forfeiture of his place. The deposit will be returned if the applicant notifies the Examiner, at least thirty days before the time for registration, that he will not be able to enter. The Registrar is authorized to make refunds after that time when, in his judgment, the circumstances so justify.

Medical Aptitude Test.—All students who contemplate applying for admission to the College of Dentistry or the College of Medicine should take the Medical Aptitude Test. Information concerning this test may be obtained from the registrar of any college.

Renewing Applications.—An applicant who has been accepted for admission but fails to enroll, and who wishes to enter in a subsequent year, must reapply for admission and must meet all the requirements in force at the time of his new application.

Admission to the College of Dentistry

In addition to the general regulations stated above for admission to the professional colleges in Chicago, applicants for admission to the College of Dentistry must meet the following requirements.

Each applicant must present satisfactory evidence of six years of work as follows:

(1) Four years of work in an accredited high school or the equivalent, comprising not less than fifteen units in acceptable subjects, including prescribed subjects as follows: English, 3 units; algebra, 1 unit; plane geometry, 1 unit; laboratory science, 1 unit.

(2) Two years of work in an approved college of liberal arts and sciences, comprising not less than sixty semester hours, including prescribed subjects as follows:

	<i>Hours</i>
Chemistry (including four hours of organic chemistry).....	12
Physics.....	6
Biology (including general zoology).....	6
English.....	6
Electives (excluding military, hygiene, and physical education).....	30
<i>Total</i>	<u>60</u>

As the function of the pre-dental years is to supply a general background for the student as well as specific training in the fundamental concepts of the sciences, it is recommended that the elective hours include history, economics, sociology, philosophy, and at least one modern language.

The course requirements as stated above must be met in full before admission will be granted. No deficiencies are permitted, but the Committee on Admissions may waive full compliance with the course specifications if the applicant possesses unusually high qualifications.

Grade Requirement.—Only those applicants who have grade averages of 3.0 or better in their college courses will be considered by the Committee on Admissions. Those who have averages of 3.5 or better will be given preference by the committee.

Candidates for the Degree of Bachelor of Science in Dentistry.—The pre-dental work of students who wish to be candidates for the degree of Bachelor of Science on the completion of the second year in the College of Dentistry should be distributed as follows:

	<i>Hours</i>
Chemistry (including four hours of organic chemistry).....	12
Physics.....	6
Biology (including general zoology).....	8
English.....	6
German, French, Spanish, or Italian.....	6
Electives (excluding chemistry, physics, and biology).....	6
Free electives.....	16
<i>Total</i>	<u>60</u>

Procedure for Pre-Dental Students.—Other factors being equal, students who complete their second year of pre-dental work in the University of Illinois will be given preferential consideration by the Committee on Admissions. Such students must comply with the same conditions as stated for pre-medical students in paragraphs numbered 1-4 on page 112.

Admission with Advanced Standing.—Should there be vacancies in upper classes, students who meet the requirements for admission to the College of Dentistry, and who have studied dentistry for not less than one year in any college accredited by the University of Illinois, may be admitted with advanced standing. Such students, however, will be required to comply with all the conditions of the curriculum of the College of Dentistry and to complete not less than two years of study in this college. Complete credentials, including a letter of honorable dismissal, are required of any applicant who has previously attended a dental school. Graduates of colleges of medicine accredited by the University may be admitted to the College of Dentistry and given credit for all satisfactorily completed requirements of the dental curriculum.

Admission of Unclassified Students.—A person twenty-one years of age or over, who has met the requirements for admission, or who is a graduate of a recognized dental school, may be admitted as an unclassified student, to take a partial schedule of work, on approval of the Dean of the College of Dentistry.

Admission to the College of Medicine

In addition to the general regulations for admission to the colleges in Chicago (page 110), applicants for admission to the College of Medicine must present at least 88 semester hours of acceptable credit from a recognized college or university, exclusive of military

science, hygiene, and physical education. The 88 semester hours must be distributed as follows:

	<i>Hours</i>
Chemistry (including, in addition to introductory courses, four hours of organic chemistry, three hours of quantitative analysis, and three hours of physical chemistry).....	16
Physics (including laboratory work in mechanics, heat, sound, light, and electricity).....	8
Biology (including general and vertebrate zoology and general embryology).....	10
English.....	6
Modern language (French, German, Spanish, etc.).....	6
Social sciences (including electives from at least two of the following fields: anthropology, economics, history, philosophy, political science, psychology, and sociology).....	14
Electives.....	28
<i>Total</i>	88

The course requirements as stated above must be met in full before admission will be granted. No conditions are permitted, but the Committee on Admissions may waive full compliance with the course specifications if the applicant possesses unusually high qualifications.

Grade Requirement.—Each applicant for admission to the College of Medicine, whether from the University of Illinois at Urbana or from another institution, must have attained a scholastic average of not less than 3.5, or its equivalent as determined by the University of Illinois for institutions using a different grading system.¹

The Committee on Admissions is authorized as a temporary measure to waive the minimum grade-point requirement to take care of unusual cases arising out of special circumstances having to do with returned deserving veterans. The number of such applicants admitted may not exceed ten per cent of the entering class.

Procedure for Pre-Medical Students at Urbana.—The medical curriculum offered by the University ordinarily consists of three years of pre-medical work, including the subject requirements stated above, two years of pre-clinical work in the College of Medicine in Chicago (after this pre-clinical work a B.S. degree may be given), two years of clinical work in the College of Medicine (for the four years in the College of Medicine the student at his option may receive the degree of Bachelor of Medicine), and one year as an interne in a hospital approved by the University. Other factors being equal, students at Urbana who have completed the pre-medical curriculum with an average of 4.0 will be given preferential consideration by the Committee on Admissions, provided that at least the second and third years of the pre-medical work have been done within the University. Students entitled to such preferential consideration proceed as follows:

(1) The student who wishes to continue his work in the University must signify his intention to the Registrar, on a form provided by the Registrar, at least six months before the date on which he plans to register in the College of Medicine.

(2) The student must comply with the general regulations for registration in the College of Medicine. This includes the payment of a deposit of \$15 within two weeks of the date of notification that he will be admitted. Failure to pay this deposit within the specified time will subject the applicant to forfeiture of his place. If he enters, the deposit will be applied to the fees of the first semester.

(3) No student who is on probation in the University, or who has been dropped for poor scholarship, at the time he seeks to transfer his registration to the College of Medicine, has any claim to precedence over students who come with clear records from the University of Illinois or other institutions.

(4) No student at Urbana will be permitted to transfer his registration to the College of Medicine while his record shows a deficiency in any of the subjects which, as general requirements of the University, are a part of his curriculum.

(5) The registration of students who are not residents of Illinois can be continued

¹ This rule is interpreted according to the number of passing grades. In a system of four passing grades, A, B, C, and D, the literal grades are translated into figures as follows: A = 5; B = 4; C = 3; D = 2; E (failure) = 1. Where there are more or less than four passing grades, the computation is adjusted to make the same level of accomplishment apply. The individual grades are multiplied by the respective number of semester hours which each represents, and the sum of these products is divided by the total number of semester hours taken. In the case of repeated courses, both grades earned will be counted in computing the average.

in the College of Medicine only by special action of the Committee on Admissions. Only a very limited number of non-state students can be admitted.

Preference to Illinois Residents.—In considering applications for admission to the College of Medicine, the Committee on Admissions gives preference to candidates who are residents of Illinois. Nonresidents must present outstanding scholastic records to be considered. Places in the first-year class are assigned to applicants from Cook County and to applicants from Illinois outside of Cook County in the proportion which each area bears to the total population of the state according to the latest federal census; provided that if at any time the quota from either area is not filled the remaining places may be assigned to applicants from the other area. On this basis at the present time approximately fifty per cent of the places in the first-year class will be assigned to applicants from Cook County and fifty per cent to applicants who are residents of Illinois outside of Cook County.

Admission with Advanced Standing.—As a result of the affiliation of Rush Medical School with the University of Illinois, it is possible to admit a limited number of transfer students to the third-year class in the College of Medicine. In considering applications, the Committee on Admissions will give preference to the candidates who present the strongest scholastic records. No student who is on probation or who has been dropped for any reason from a medical school will be considered for admission.

Admission to the Occupational Therapy Curriculum

The curriculum in occupational therapy, leading to the degree of Bachelor of Science in Occupational Therapy from the College of Medicine, is offered to men and women who are able to meet the requirements as listed on page 107. During the first five semesters of the curriculum students register in the College of Liberal Arts and Sciences on the Urbana campus; at the end of that time they are transferred to the College of Medicine in Chicago for the remaining five terms of training.

Admission to the Medical Technology Curriculum

The curriculum in medical technology, leading to the degree of Bachelor of Science in Medical Technology, is offered in the College of Medicine. The program of instruction covers twelve full months and includes routine clinical laboratory procedures, hematology, bacteriology, parasitology, serology, basal metabolism, blood and urine chemistry, and tissue technic; classroom and laboratory instruction in biological chemistry, bacteriology, and clinical pathology; and special lectures and conferences.

In addition to the general regulations for admission to the colleges in Chicago (page 110), candidates for admission to this course must be graduates with a bachelor's degree from a recognized college or university. The following courses must have been successfully completed:

	<i>Hours</i>
Biology (including at least 4 hours in zoology)	8
Chemistry (8 semester hours of general inorganic chemistry, including 4 hours of laboratory; 4 semester hours of organic chemistry, including laboratory; and 3 semester hours of quantitative analysis)	15

Physics and biology are highly recommended as desirable courses.

The number of students admitted each year is limited to eight. Students are chosen on the basis of their previous scholastic record. Preference is given to residents of the State of Illinois. Applications will be received at any time during the year. Choice of applicants is made on July 1. If the class is not filled at that time the remaining places are considered on September 1.

Admission to the College of Pharmacy

In addition to the general regulations for admission to the undergraduate colleges, concerning high school graduation, sources of acceptable credits, admission by certificate, etc., as stated on pages 99-105, applicants for admission to the College of Pharmacy must meet the following special requirements:

Age.—The minimum age for admission is sixteen years.

Health.—Each applicant must supply a satisfactory health report, either from the Health Service of the University, or from the last school attended.

High School Subjects.—Fifteen of the units required for high school graduation

must include two majors (of three units each) and one minor (of two units) from the fields of English, foreign language, mathematics, natural science, and social studies, with a total of at least nine units from these fields. One major must be English. At least a minor must be in mathematics, including algebra and plane geometry. The six remaining units necessary for admission may be selected from any of the high school subjects which are accepted by an accredited high school toward its diploma and which meet the standards for accrediting as defined by the University of Illinois. Two units of natural science (including biology) and two units of social studies are desirable, although not required.

Selection of Applicants.—In selecting applicants the Committee on Admissions will take into consideration the candidate's personal qualifications, including an interest in the profession of pharmacy. Other factors to be considered include high school scholarship rank, letters of recommendation, especially from high school teachers, health records, aptitude tests, and such special examinations as may be determined by the Committee. A personal interview is desired whenever possible.

State Qualifying Certificate.—Each student entering the College of Pharmacy is required by the Department of Registration and Education of the State of Illinois to present a qualifying certificate. The application for this certificate may be made at registration time on a form obtainable at the office of the Dean of the College.

Admission with Advanced Standing.—Credit for work done in a recognized institution having standards equal to those of the University of Illinois may be accepted for admission with advanced standing, in so far as this work is equivalent to the courses in the College of Pharmacy. Application for advanced standing should be made at the time of first registration. Each applicant must present a letter of honorable dismissal from, and be eligible for promotion in, the school in which he has pursued his studies and must comply with the requirements for promotion in the College of Pharmacy.

GENERAL REQUIREMENTS FOR GRADUATION

A bachelor's degree is conferred on a student who satisfactorily completes a curriculum in one of the colleges or schools at Urbana, doing either the first three years or the last year of work in residence, but students whose progress has been interrupted by call to armed services, and who have subsequently (as members of the armed services) taken work which is acceptable by transfer as satisfying the requirements of their curricula, may be considered to have fulfilled the residence requirement if they have had either the junior year or the second semester of the junior year and the first semester of the senior year at the University of Illinois. Each candidate for a bachelor's degree must meet the general requirements of the University with respect to registration, residence, military science, hygiene, physical education, and rhetoric; must pass in the subjects which are prescribed in his curriculum; must conform to the directions of that curriculum in regard to electives and the total number of hours required for graduation; and must meet the minimum scholarship requirements which the University has approved for his college or school.

The system of grading is as follows: "A," excellent; "B," good; "C," fair; "D," poor (but passing); "E," failure. Examinations are conducted by the faculty at the end of each semester.

The required work includes, for men, military science and tactics, hygiene, physical education, and rhetoric; for women, hygiene, physical education, and rhetoric. Women entering the University as freshmen are required to obtain credit for four semesters of work in physical education and one semester in hygiene; those entering as sophomores, two semesters in physical education. Men entering with less than 56 semester hours of credit are required to secure four semesters of credit in physical education including the amount transferred; those entering with 56 or more semester hours are exempt. Men in the freshman and sophomore classes, who are under twenty-two years of age when entering the University, are required to take military science and tactics unless exempted or excused by special regulations.

All students entering the University as freshmen direct from secondary school are

required to take a placement test in rhetoric. Those who fail to pass this test must make up the deficiency by tutoring, correspondence study, or by passing Rhetoric 0, a non-credit course meeting three hours each week. A student who fails to pass the placement test or Rhetoric 0 by the beginning of his third semester must withdraw until he does pass.

A satisfactory proficiency in the use of written English is a requirement for all undergraduate degrees awarded by the Urbana divisions of the University. In order to assure such proficiency the following regulations have been established: (1) Students who entered the University between September 1, 1941, and September 1, 1944, and who received grades of "D" in Rhetoric 2, or its equivalent, are required to pass an English qualifying examination or to pass an extra semester course in rhetoric (Rhetoric 5). (2) Students entering the University after September 1, 1944, and who receive grades of "C" or "D" in Rhetoric 2, or its equivalent, are required to take an English qualifying examination before graduating. Those who fail to pass the qualifying examination are required to pass an extra semester course in rhetoric (Rhetoric 5). A foreign student must attain the proficiency in English necessary for adequate work in his other academic courses.

In any curriculum in which less than fifteen hours of laboratory science are required, a student who enters without at least one unit of laboratory science must substitute five hours of a laboratory science for five hours of electives in the requirements for graduation.

In a beginning course in a foreign language not less than a full year's work (normally eight credit hours) will be accepted toward graduation.

If a thesis is to be submitted in partial fulfillment of the requirements for a bachelor's degree, the subject must be announced by the end of the sixth week of instruction in the first semester of the student's senior year. The completed thesis on regulation paper must be presented to the dean of the proper college. The work must be done under the direction of a professor in the department concerned and must be in the line of the curriculum from which the degree is expected.

After matriculation, a student may count, toward his degree, as much as sixty semester hours of credit earned in correspondence study in subjects passed with grades of "C" or higher, under the following conditions: (1) if he completes all the remaining requirements for the degree in residence at the University; or (2) if he presents acceptable residence credit for work done elsewhere and completes the requirements needed for his degree in residence at the University. In all such cases the senior year (of not less than thirty semester hours) must be done in residence at the University.

A student who has earned three years of residence credit at the University may do his senior year in correspondence study, subject to meeting all the requirements for his degree as announced by his college or school.

Degrees are conferred at the Commencement exercises in June, February, and October. Students who are to complete their work for the bachelor's or the master's degree at the end of an eight-week summer term, and who, in advance of the June meeting of the University Senate, file a list of specified courses to be taken that summer which complete the requirements in their cases, may be recommended for degrees in August.

A student who has received one bachelor's degree may receive a second bachelor's degree, provided that all specified requirements for both degrees are fully met, and provided also that the curriculum offered for the second degree includes at least thirty semester hours not counted for the first degree.

PROFICIENCY EXAMINATIONS

Each semester the University gives proficiency examinations, similar to the regular semester examinations, in courses normally open to freshmen and sophomores. Proficiency examinations in more advanced undergraduate subjects are given on recommendation of the head of the department and approval of the dean of the college. There is no fee charged for these examinations. A student who passes a proficiency examination is given credit toward graduation, provided that this does not duplicate credit counted for his admission to the University and that the course is acceptable in his curriculum. The grade in proficiency examinations is "pass" or "not pass," but no student is given a grade of "pass" unless he has

made at least "C" in the examination. No official record is made of failures in these examinations.

Proficiency examinations are given under the following restrictions: (1) They may be taken only by persons who are in residence, or who are candidates for degrees at the close of the college year in which the examination is to be given and who need no more than ten semester hours to complete the requirements for their degrees. (2) They may not be taken by students who have received credit for more than one semester of work in the subject in advance of the course in which the examination is requested. (3) They may not be taken to raise grades or to remove failures in courses.

HONORS

Students who attain a high grade of scholarship are given official recognition by the University according to the following system of honors. The plan for Honors Day is applicable to undergraduates who are enrolled in a four-year curriculum requiring only high school preparation for admission, or in the College of Education or School of Journalism.

Honors Day

Honors Day is observed annually by a convocation of students and members of the faculty, with an address by a distinguished speaker. Announcement is made of the election of students to honorary societies in which the basis of election meets a standard of scholarship approved by the Committee on Honors Day. Announcement is made also of organized groups of students whose average is equivalent to 0.20 above the average of all undergraduates on the basis of methods employed by the University authorities in determining group averages. Special recognition is given to undergraduate students who have distinguished themselves in scholarship during the two semesters previous to Honors Day (with the exception that in the case of freshmen the basis of award is the work of the first semester). Three grades of honors are awarded, as follows:

Class Honors.—Students in the upper ten per cent of each class within the respective schools or colleges are awarded Class Honors and are entitled to have their names printed on the Convocation program in recognition of their high scholarship, provided that no student shall be included whose average is below "B."

College Honors.—Students in the upper three per cent of the sophomore, junior, and senior classes within the respective schools and colleges are awarded College Honors in recognition of their superior scholarship.

University Honors (Bronze Tablet).—(a) Those seniors who have been in the upper three per cent of their class in the respective schools and colleges in the four semesters preceding Honors Day, and, therefore, have been awarded College Honors in both junior and senior years, are awarded University Honors in recognition of their sustained excellence in scholarship, and are entitled to have their names inscribed on the Bronze Tablet. (b) Other senior students who have earned College Honors twice, and whose scholastic averages for the first seven semesters are equal to or higher than the four-semester average of the lowest student currently chosen for University Honors from their college, under (a), are also entitled to have their names inscribed on the Bronze Tablet. (c) Senior transfer students who have not been at Illinois long enough to be considered under (a) or (b) are also entitled to have their names inscribed on the Bronze Tablet, provided that: (1) their scholastic averages in the University of Illinois for the three prior semesters are equal to or higher than the four-semester average of the lowest student currently chosen for University Honors from their college under (a); and that (2) their averages in transferred credits for the year prior to their transfer are at least equal to the average of those chosen for University Honors under (a).

The awards are based on the attainments of the students as shown by the scholastic records on file in the office of the Registrar. The students and organizations to be given honors are selected by the University Senate through its Committee on Honors Day, and on the recommendation of the deans of the various colleges.

A student whose name is among the upper ten per cent of his class in accordance with the foregoing plan, at the convocation held in his junior year, is permitted so to

adjust the studies of his senior year as to allow him freedom to put a considerable proportion of his time on some selected subject of study or investigation under the supervision of the department concerned, provided that such arrangement does not cause omission of prescribed subjects in set curricula except by special permission of the dean of his college. In lieu of a final examination the department may require such reports or thesis as it deems most suitable. The amount of approved work which may be thus taken during the senior year may not exceed the equivalent of a total of ten semester hours if taken within one department or of sixteen semester hours if in two departments. A student availing himself of the opportunity which this plan offers may not register for more than a total of eighteen hours either semester of his senior year.

Graduation with Honors

With the approval of the University Senate and the Board of Trustees, any college or school may prescribe the conditions under which candidates for degrees may be recommended for graduation with honors. When a proposal by a college or school has thus been approved the following plan of graduation with honors ceases to apply to that division of the University. (For graduation with honors from the College of Agriculture, see page 148; the College of Fine and Applied Arts, see page 196; the College of Liberal Arts and Sciences, see page 232.)

The University Senate may recommend candidates for bachelors' degrees with honors in a particular field under the following conditions:

To be considered for honors, a student must have been in residence at the University for at least four semesters, or have earned in residence at least sixty hours.

For the degree with *Honors*, the student must have received the grade of "A" in at least one-half of the semester hours accepted in satisfaction of the requirements for a major, or in a minimum of twelve hours in *approved courses in his field of specialization*, exclusive of beginning courses open to freshmen, and no grade below "C" in any of the work offered in his major or field of specialization. He must have attained a grade of not lower than "B" in at least three-fourths of all other work which he presents for graduation, exclusive of courses during his freshman year.

For the degree with *High Honors*, constituting a recognition of work of exceptional merit, the student must have received the grade of "A" in at least three-fourths of the work offered in courses accepted in satisfaction of the requirements for a major or in a minimum of fifteen hours in *approved courses in the field of specialization*, exclusive of beginning courses open only to freshmen, and no grade below "B" in the work offered in his major or field of specialization. He must also have attained a grade not lower than "B" in at least three-fourths of all the other work which he presents for graduation, exclusive of courses taken during his freshman year. In addition he must have completed satisfactorily at least ten hours in courses open to advanced undergraduate and graduate students, or courses approved for this purpose by the department in his field of specialization. He must either present an acceptable thesis or pass a comprehensive examination based on a course of study approved by that department.

The thesis or course of study in the field of specialization shall carry credit for at least four semester hours, irrespective of whether the student eventually receives *High Honors* or not; and the instructor in charge shall report to the Registrar a grade for each semester, based on the student's progress.

These distinctions shall be noted on the student's baccalaureate diploma and in the Commencement program, and the winners shall receive special consideration in departmental recommendation for graduate scholarships and for professional positions.

Graduation with Honors in the Professional Schools

A student who complies with the requirements for graduation from the College of Law (degree of B.S. or J.D. or LL.B.), the School of Journalism, the Library School, the College of Medicine, the College of Dentistry, or the College of Pharmacy, and who attains in all work done in courses offered in the college concerned, and presented for the degree, the average grade specified below, may be recommended by the University Senate for the honors stated: for an average grade of not less than 4.35 (an average of 4.6 to 4.8 in the Library School), *Graduation with Honors*; for an average grade of not less than 4.75 (an average of not less than 4.9 in the Library School), *Graduation with High Honors*. The honors conferred shall be noted on the student's diploma and in the Commencement program.

FEES AND EXPENSES

Estimated expenses for undergraduate students, exclusive of such variable items as clothing, railroad fare, and recreation, are tabulated below. This estimate covers two semesters for students who are residents of Illinois. (For those who are not residents of Illinois the tuition is higher.)

	<i>Minimum Budget</i>	<i>Moderate Budget</i>
Tuition fee (residents of Illinois).....	\$ 80	\$ 80
Laboratory, library, and supply fee.....	16	16
Hospital and medical service fee.....	10	10
Illini Union service charge.....	10	10
Textbooks.....	25	30
School supplies.....	14	18
Room.....	135	160
Board.....	300	350
Laundry (mailed home).....	9	9
Miscellaneous.....	20	90
<i>Total</i>	<u>\$619</u>	<u>\$773</u>

Note.—Each student must make a deposit of \$5. An additional deposit of \$10 (\$15 in all) is required of students withdrawing military equipment.

FEES IN THE DEPARTMENTS AT URBANA AND IN THE UNDERGRADUATE DIVISIONS AT CHICAGO AND GALESBURG

Note: Fees are payable in full when the student registers.

Tuition Fee.—

All students who are residents of Illinois, except those holding scholarships, pay each semester a tuition fee of.....	\$ 40.00
All students who are not residents of Illinois, pay each semester a tuition fee of.....	80.00
Graduate students at Urbana, enrolled for thesis work for the master's degree on leave of absence, pay a tuition fee of.....	20.00
Candidates for professional degrees in engineering at Urbana, pay each year a tuition fee of.....	25.00

Hospital and Medical Service Fee.—All students, except persons on appointment on the University staff or the staffs of the allied surveys or laboratories, and students taking not more than one unit of graduate work or five hours of undergraduate work in a semester, or one-half unit of graduate work or three hours of undergraduate work in the eight-week summer session, pay each semester, as insurance for hospital and medical service, a fee of..... 5.00
(*Note*: A student who presents evidence of participation in any other group insurance system providing the same benefits as those covered by the University fee, may petition through the office of the Dean of Students for a refund of this fee.)

Laboratory, Library, and Supply Fee.—Students taking more than eight hours or more than two units of instruction, pay each semester a laboratory, library, and supply fee of..... 8.00
(Students taking less than this amount of instruction pay \$4 each semester.)

Late Registration Fee.—Former students who register after the regular registration days in either semester pay a late registration fee of..... 5.00

Change Fee.—For every change slip issued later than the Monday noon following registration, the fee is..... 1.00

Listener's Fee.—Persons not connected with the University who attend classes as listeners pay for each course each semester..... 7.50

Transcript Fee.—Each student who has paid all his University fees is entitled to receive, without charge, one transcript of his record. For each additional transcript the fee is..... .50

Special Examination Fee.—For any special examination to remove a failure the fee is 5.00

<i>Illini Union Service Charge.</i> —All students registering for resident work in the Urbana departments of the University, except graduate students who are members of the University staff and others who are registered for not more than one unit of graduate work or not more than five semester hours of undergraduate work, are assessed each semester an Illini Union Building service charge of	5.00
<i>Activities Service Fee.</i> —All students in the Undergraduate Divisions at Chicago and Galesburg, except those who are registered for not more than five semester hours, pay each semester a student activities service fee of	4.00
<i>Fee for Instruction in University High School.</i> —University students at Urbana who also register in the University High School pay, in addition to their University fees, for each half-unit each semester (Provided that the total additional charges shall not exceed \$25 a semester).	10.00
<i>Flight-Training Fee.</i> —Students taking flight-training courses in the Institute of Aeronautics pay each semester a materials and supply fee of	250.00

Deposits.—Each student, except persons on University appointment or on appointment in allied surveys or laboratories, must make a deposit of \$5 at the time of his first registration. An additional deposit of \$10 (\$15 in all) is required of students at Urbana withdrawing military equipment. Chargeable against these deposits are such items as unreturned towels and locks, lost library books, library fines, shortages in laboratory, military, and other equipment, etc. Whenever the amount of the \$5 deposit falls below \$2.50 or the amount of the \$15 deposit falls below \$12.50, the student will be required immediately by additional deposit to bring the total up to \$5 and \$15, respectively. Any balance in a deposit will be returned to the student in case he officially withdraws from the University.

Identification Card.—Each student on completing registration in each semester is given an identification card for use in obtaining loans of library books, locks, towels, and other equipment.

Service Charge for Deferred Fees.—A service charge of ten per cent of the amount of fees deferred, but not to exceed \$3 a semester, is assessed for the privilege of deferring fees, and this charge must be paid on the day of registration. If deferred fees are paid in full within ten days after registration, the service charge is refunded *except* that a minimum service charge of \$1 is retained by the University in all cases. The military deposit of \$10, the general deposit of \$5 (if these deposits have not previously been paid), the service charge, and all charges from previous semesters must be paid on the day of registration.

Refunds of Fees.—In case a student withdraws from a course or from the University during the first ten days of instruction, the total amount of his fees for the work dropped will be refunded. After ten days and before the middle of the semester, a rebate of one-half the fees will be made. After the middle of the semester, no rebate will be allowed. In the summer term, for students registered for eight weeks only, the total amount of fees paid will be refunded if withdrawal occurs within the first five days; one-half the amount after the first five days but within the first four weeks; and nothing after the beginning of the fifth week.

Fees for Eight Weeks of Instruction in the Summer

Students registering for only eight weeks in the summer term pay fees as listed on page 118 except that the tuition fee for residents of Illinois is \$20, and for nonresidents, \$40; laboratory, library, and supply fee, \$4; hospital and medical service fee, \$2.50; Illini Union service charge, \$2.50.

Students registering in undergraduate courses totaling four semester hours or less pay \$3 a credit hour if residents of Illinois, or \$6 a credit hour if nonresidents, instead of the usual fee for eight weeks of instruction. Graduate students who register for one unit or less pay \$12 a unit if residents of Illinois, or \$24 a unit if nonresidents, instead of the usual fee for eight weeks of instruction.

Fees for Summer Camp for Surveying Instruction

Students registering for the Summer Camp for Surveying Instruction pay a fee of \$20 if residents of Illinois, or \$40 if nonresidents of Illinois.

Fees for Part-Time Students

Persons registering for reduced schedules pay, instead of the regular tuition fee, the course fees indicated below:

(1) For undergraduate and professional work: \$3 per credit hour if a resident of Illinois, or \$6 per credit hour if not a resident of Illinois; provided registration is for not more than eight credit hours in one semester or a full summer term, or four hours in eight-week summer courses.

(2) For graduate work at Urbana: \$12 per unit if a resident of Illinois, or \$24 per unit if not a resident of Illinois; provided registration is for not more than two units in one semester.

(3) For graduate field research work off the campus, by students registered exclusively for such work, other than that done in regular extramural courses: \$12 per unit if a resident of Illinois, or \$24 per unit if not a resident of Illinois.

Exemption from Fees for Members of the University Staff

Persons on the academic and administrative staffs of the University in any capacity, or who are on scholarship or fellowship appointment in the Graduate School, or who are on permanent employment on the nonacademic staff (subject to the approval of the head of their department or division), may register in University courses for which they are eligible for admission without payment of the tuition fee and the laboratory, library, and supply fee, provided their annual salary is \$2,400 or less.

Permanent nonacademic employees without regard to salary may register without payment of any fees or deposits under the following conditions: (1) In any regular University course in which the employee is requested by the Department, with the concurrence of the Director of Nonacademic Personnel, to enroll for the improvement of the employee's present work. (2) Any special course looking toward improving University service organized at the request of the Director of Nonacademic Personnel in cooperation with the teaching staff, the employee concerned, and the departments in which such employee is located.

Fees for Extension Courses

The basic fee for correspondence courses is \$5 for each semester hour of credit. Additional charges are made in courses in which special materials are furnished. For extramural courses a basic fee of \$5 for each semester hour of undergraduate credit is charged, \$15 for one-half unit of graduate credit, and \$25 for one unit of graduate credit. Students in extramural courses pay the laboratory, library, and supply fee of \$8, except that \$5 of the fee may be waived by the Dean of University Extension where no instructional materials are supplied by the University. An additional fee of \$1 is charged for late registration in extramural courses.

FEES IN THE PROFESSIONAL COLLEGES IN CHICAGO

The following regulations apply to students in the Colleges of Dentistry, Medicine, and Pharmacy—which operate on the quarter system.

Tuition, Laboratory, and Building Service Fees.—The table on page 121 shows these fees for regular full-time students in each year of work in each college, with separate columns for those who are residents of Illinois and those who are not residents of Illinois. Since the work of each year consists of three terms called quarters, one-third of each year's fees is payable on registration for each quarter.

Late Registration Fee.—Former students who register after the regular registration days in any quarter pay a late registration fee of \$5.

Special Examination Fee.—For any special examination to remove a failure, the fee is \$5.

Change Fee.—A fee of \$1 is charged for every study-list change slip issued later than the Saturday noon following the regular registration days. This rule applies also to registration for electives after the dates specified for regular registration.

Chicago Illini Union Building Service Charge.—The Union Building service charge of \$3.50 for each quarter is required of all students in the Chicago professional colleges.

Cook County Hospital Card.—A fee of \$5 for a County Hospital Card is required annually of all third-year and fourth-year medical students.

FEEES FOR REGULAR FULL-TIME STUDENTS IN THE PROFESSIONAL COLLEGES IN CHICAGO

	FIRST YEAR <i>Illinois Non.-Ill.</i>	SECOND YEAR <i>Illinois Non.-Ill.</i>	THIRD YEAR <i>Illinois Non.-Ill.</i>	FOURTH YEAR <i>Illinois Non.-Ill.</i>
Dentistry:				
1. Tuition Fee.....	\$ 81	\$ 81	\$ 81	\$ 81
2. Laboratory and Building Service Fees.....	\$162 (135)	\$162 (135)	\$162 (135)	\$162 (135)
a. General Building Service Fee.....	36	36	36	36
b. Laboratory Room Fee.....	72	72	72	72
3. Laboratory, Library, and Service Fee.....	69	69	69	69
4. Union Building Service Charge.....	10.50	10.50	10.50	10.50
<i>Total</i>	\$268.50	\$418.50	\$268.50	\$418.50
Medicine:				
1. Tuition Fee.....	\$81	\$ 81	\$ 81	\$ 81
2. Laboratory and Building Service Fees.....	(108) (135)	(108) (135)	(135) (174)	(135) (174)
a. General Building Service Fee.....	36	36	45	45
b. Laboratory Room Fee.....	72	72	90	90
3. Laboratory, Library, and Service Fee.....	69	69	90	90
4. Union Building Service Charge.....	10.50	10.50	10.50	10.50
<i>Total</i>	\$268.50	\$418.50	\$316.50	\$466.50
Pharmacy:				
1. Tuition Fee.....	\$ 81	\$ 81	\$ 81	\$ 81
2. Laboratory and Building Service Fees.....	(24) (36)	(48) (60)	(54) (66)	(54) (66)
a. General Building Service Fee.....	15	18	15	15
b. Laboratory Room Fee.....	9	30	39	39
3. Laboratory, Library, and Service Fee.....	36	42	36	42
4. Union Building Service Charge.....	10.50	10.50	10.50	10.50
<i>Total</i>	\$151.50	\$250.50	\$181.50	\$286.50

Outpatient Clerkship Fee.—All fourth-year medical students pay an obstetrical outpatient clerkship fee of \$15.

Transcript Fee.—Each student who has paid all his University fees is entitled to receive, without charge, one transcript of his record. For each additional transcript the fee is 50 cents.

Fees for Part-Time Students.—All part-time students in the Colleges of Dentistry, Medicine, and Pharmacy pay the regular laboratory and building service fees as shown in the table for full-time students. Instead of the regular laboratory, library, and service fee, a part-time student will be charged only for such materials as apply to the courses in which he is registered. In the first three years of the College of Pharmacy, \$1 a quarter hour is charged for laboratory materials. Fourth-year part-time students pay at the rate of \$1.50 a quarter hour.

Residents of Illinois registered for partial programs of 200 clock hours or less in a quarter in the Colleges of Dentistry and Medicine pay tuition fees at the rate of \$2.50 for 25 clock hours or fraction thereof. Non-Illinois students registered for partial programs pay double this rate. Students taking more than 200 clock hours in a quarter pay the full tuition fees.

In the College of Pharmacy, students registered for twelve credit hours or less pay tuition fees at the rate of \$2 a credit hour if residents of Illinois, or \$4 a credit hour if nonresidents. For thirteen credit hours or more, the full tuition fees are charged.

Listener's Fee.—For each 25 clock hours or fraction thereof in the Colleges of Dentistry and Medicine, or for each credit hour in the College of Pharmacy, persons not connected with the University who attend classes as listeners pay \$10 if residents of Illinois, or \$20 if nonresidents.

Fees for Unclassified Students.—Fees charged unclassified students in the Chicago departments are based on the amount of work taken.

Service Charge for Deferred Fees.—In cases of necessity, students may arrange for deferment of fees by calling at the Business Office, Room 128, Medical and Dental College Laboratories Building. A service charge of ten per cent of the amount of fees deferred, but not to exceed \$2 a quarter, will be charged for the privilege of deferring fees, and this charge must be paid on the day of registration. If deferred fees are paid in full within ten days after registration, the service charge will be refunded *except* that a minimum service charge of \$1 will be retained by the University in all cases. The service charge, not less than one-third of the current quarter's fees, and all fees and charges from previous terms must be paid on the day of registration. Failure to meet payments of fees within the time limits will cancel at once the privilege of attending classes. Registration is not completed until fees are paid in full, and no credit will be recorded for class work completed unless all fees and other charges have been paid in full.

Refunds of Fees.—If a student withdraws within ten days after the beginning of a quarter, his total fees (except the \$15 deposit) will be refunded. After ten days and before the expiration of one month, a refund of two-thirds of his total fees will be made. After one month and before the expiration of two months, a refund of one-third of these fees will be made. After the expiration of two months, no part of the fees will be refunded.

Fees for Students in Occupational Therapy

During the four quarters of work taken in the College of Medicine, students in the occupational therapy curriculum are subject to the general regulations concerning fees as stated above. However, instead of the fees listed for medical students in the table on page 121, students in the occupational therapy curriculum pay fees each quarter as follows: tuition, \$27 (nonresidents pay \$54); laboratory and building service fee, \$18 (nonresidents pay \$22); Union Building service charge, \$3.50.

Fees for Medical Technology Students

Students in the medical technology curriculum pay fees each quarter as follows: tuition, \$18; laboratory fee, \$10; building service fee, \$12; Union Building service charge, \$3.50. In addition, students in this curriculum are subject to the regulations governing fees for late registration, special examinations, and transcripts, the service charge for deferred fees, and refunds of fees, as stated on pages 120-122.

An applicant for admission who is assigned a place in the class is required to make a deposit of \$15 within two weeks of the date of notification that such assignment has taken place. This deposit will be applied on the fees for the first quarter. Failure to pay this deposit within the specified time will subject the applicant to forfeiture of his place.

Fees for Graduate Students in the Chicago Departments

Students in the Chicago departments of the Graduate School are subject to the regulations governing fees for late registration, change of study-list, the Chicago Illini Union Building service charge, the transcript fee, the service charge for deferred fees, and refunds of fees, as stated on pages 120-122.

Tuition Fee.—The tuition fee in the Graduate School is \$12 per unit of credit for residents of Illinois, or \$24 per unit for non-Illinois residents.

Laboratory Fee.—In courses for which the University furnishes materials used by the students, a laboratory fee of \$5 per unit of credit is charged.

Fee in Orthodontia.—For the graduate course in orthodontia in preparation for the practice of orthodontia as a specialty, the yearly tuition fee is \$400, one-fourth payable at the beginning of each quarter. (Candidates for a master's degree who take an extra quarter in Orthodontia 101 will not be assessed an extra fee.)

Exemption from Fees for Members of the University Staff.—Persons on the academic and administrative staffs of the University in any capacity, or on scholarship or fellowship appointment in the Graduate School, or on permanent employment on the non-academic staff, may register in University courses for which they are eligible for admission without payment of the tuition fee and the laboratory fee, provided their annual salary is \$2,400 or less. (Nonacademic employees must secure the approval of the head of their department or division.)

Fees in Special Courses for Dentists and Physicians

Dentists and physicians registering in short courses in the Colleges of Dentistry and Medicine pay \$75 a quarter if residents of Illinois (\$225 for an academic year consisting of three quarters), or \$150 a quarter if nonresidents of Illinois (\$450 for an academic year of three quarters). For courses which are offered for less than a quarter, a pro rata fee is charged in accordance with the length of the course. Laboratory and clinical fees, as determined for each individual on the basis of the cost of materials used, are charged in addition to the above fees.

The College of Medicine also offers from time to time, usually in the summer, refresher courses lasting one or two weeks, designed for practicing physicians. A fee of \$10 is assessed in each of these courses.

STUDENT WELFARE

The University of Illinois, recognizing its responsibility for the entire life of the student while he is living in the academic community, makes every effort to provide the most favorable conditions. At registration time a special adviser assists each student to arrange his program of studies. The deans of the colleges, directors of the schools, heads of the departments, and other members of the faculty also devote a large part of their time to the advising of students relative to their classroom work and academic programs. The problems of student welfare outside the classroom are handled by three general University offices, those of the Registrar, the Student Personnel Bureau, and the Dean of Students.

The Registrar's contacts with students begin prior to their arrival on the campus. Through correspondence and personal conferences, the Registrar provides general information about the University and specific information about admission. He is in charge of student academic records, awarding and administering undergraduate scholarships, and is chairman of Freshman Week.

The Dean of Students coordinates and unifies the work of all agencies interested in the student's physical well-being, both in living quarters and person-

ally, in social and recreational activities, and in the cultural level of all phases of student life outside the classroom. As part of the Dean of Student's organization, the offices of the Dean of Men and the Dean of Women are organized for counseling undergraduate students in ways so varied that a complete enumeration could hardly be made of all the different kinds of problems they help to solve. Some of the questions most frequently asked by students concern personal adjustments to campus life, choice of curricula, procedure in registration, arranging programs of study, locating suitable living quarters, finding part-time employment, budgeting expenses, obtaining loans, qualifying for scholarships, participation in extracurricular activities, fraternity and sorority pledging procedures, and interpretation of rules and regulations adopted by the University for the guidance of undergraduates. The deans and their assistants not only give advice and guidance on such questions but also direct students to other administrative offices of the University which are organized to deal specifically with various matters of student welfare. Inquiries of all kinds from parents and guardians who visit the campus or write for information are always welcomed and promptly answered.

Student Personnel Bureau

The Student Personnel Bureau offers guidance based on scientific aptitude tests in three main areas: educational counseling—help in selecting the proper courses of study, in improving reading speed and efficiency, and in establishing effective study methods; vocational counseling—determining the profession or job for which the student is best fitted, including the courses of study and the training required for different vocations; personal counseling—developing an effective personality, overcoming worries, nervousness, and other personal problems. These counseling services are available without charge to any student, civilian or serviceman, now in the University, or to any high school graduate planning to enter the University, or to any Illinois veteran.

The required Freshman Guidance Examinations and aptitude and achievement tests, which may be taken either before entrance into the University or during the week of registration, usually provide the starting point for such counseling. Additional psychological tests of special aptitudes, interests, and personality may be suggested by specially trained personnel counselors who interpret the results of all such tests to the student in one or more private interviews. Students who wish to avail themselves of these counseling services before entering the University, as an aid in determining the course of study for which they are best fitted, should write for an appointment with the Student Personnel Bureau.

Student Health

The University maintains a Health Service for students to promote their physical and mental health, to control communicable disease among them, and to teach them the essentials of healthful living. Members of its staff give instruction in hygiene, conduct physical examinations, supervise food handlers, make sanitary inspections, hold personal conferences with students, and assist them in every way possible in making prompt adjustment. They strive to reveal to the students the benefits to be derived from sanitation, preventive medicine, and hospitalization. As the functions of the Health Service are primarily educational and preventive, its staff does not assume responsibility for the care of students beyond giving medical advice, administering emergency treatment, and referring students to competent specialists and practitioners of medicine.

McKinley Hospital.—The McKinley Memorial Hospital, located on the Urbana campus, is the gift of the late Senator William B. McKinley, a distinguished alumnus of the University. It is a modern well-equipped hospital with a normal capacity of one hundred and twelve beds. The hospital is particularly designed for student and faculty use, and provides for the care of communicable disease, general illness, emergency surgery, and treatment. It is unusually well-equipped with X-ray equipment and other modern devices for the diagnosis and treatment of disease.

Galesburg Hospital.—Accommodations at Galesburg include a thirty-bed hospital equipped with a large X-ray unit, an emergency operating room, and physiotherapy equipment. Four nurses and a laboratory technician are on call at all times. These facilities are available to both students and faculty.

Hospitalization and Medical Service.—A hospitalization and medical service fee is charged each student to provide ward care and a substantial payment toward the charges of the attending physician in the event of student illness. In cases of minor illnesses, the payment is sufficient to give the student complete protection. There is also an allowance for laboratory fees and special medicines. This fee is a development of the former Mutual Benefit Hospital Association, which was founded in 1899 and was the oldest organization of its type in existence. The whole plan is arranged to give the greatest benefits to the student who is ill away from home.

Speech Clinic

The Speech Clinic, located in 44 Gregory Hall, on the Urbana campus, is maintained by the University to help students in correcting speech defects. The clinic is equipped with modern testing instruments, and its staff is scientifically trained in diagnosis and treatment. Students who apply for aid are examined to determine the type and extent of their speech difficulties. A program of corrective exercises is then prescribed, with supervised practice periods one or two hours a week. For those who are hard of hearing or deafened, lip-reading classes are held. No charge is made for these services.

Student Employment

An employment service is maintained by the office of the Dean of Men to advise and aid worthy students who desire part-time employment while in the University. This service affords a central clearing point for the employment of all students, except that women desiring room-and-board jobs are referred to the Dean of Women.

Students are advised not to attempt entire self-support. A student who plans to be partly self-supporting should have a thorough understanding of the financial obligations of a college course, and should have a reserve fund of at least \$250 on entering the University. Assignments of work are made on the basis of the actual needs of the students, of their ability to meet the requirements of employers, and of their academic records. The employment service can not guarantee that work will be found for all needy applicants, although every effort is made to find opportunities for all. No charge is made for this service.

An applicant for work should appear in person at the employment office, on or before the regular days for registration. As jobs are not assigned in order of date of application, there is no need for prospective students to make special trips to the campus far in advance.

Placement Service

The University offers three types of service for students seeking positions after graduation and for former students. A General Placement Bureau, with a central office on the Urbana campus and a branch office in Chicago, has been established. The central office is located at 104 Administration Building (East), Urbana, and the branch office in the Illini Center, LaSalle Hotel, Chicago. Students seeking positions as teachers register with the Secretary of the Committee on the Appointment of Teachers, 200 Gregory Hall, Urbana. Students in each year's graduating class and non-graduates who are in search of full-time employment may have advice individually from the deans of the colleges, directors of the schools, heads of departments, and other members of the faculty and administrative staff. In the event that placement directors visiting the campus are seeking students regardless of special preparation and from several different colleges or departments, the Director of the General Placement Bureau serves as the coordinating officer to handle such situations.

Student Housing

Living conditions of students are supervised by the University's Director of Student Housing, who is responsible for standards of health, safety, comfort, study conditions, social facilities, and reasonableness of charge. All residence halls, fraternity and sorority houses, cooperative houses, and privately operated student homes are subject to periodic inspection and official approval. Unmarried undergraduate students not residing with their parents, guardians, or relatives are required to live in places approved by the University. Personal assistance is given to individual students in their housing problems.

The organized houses on the Urbana campus include 55 fraternities and 25 sororities, in which membership is by invitation, and numerous privately operated houses in the Men's Independent Association and the Women's Group System. In most of these organized houses the accommodations include meals. Some are cooperatives, in which

the students share the work and expense. Many other houses, with rooms for smaller numbers of students, are approved, some for men and some for women. Every housing unit is under the direction of a responsible individual, approved by the Director of Student Housing and by the Dean of Men or the Dean of Women.

The University owns and operates several residence halls on the Urbana campus. The Busey and Evans Halls for women are located at 1111 and 1115 West Nevada Street, Urbana. Room and board is available in these halls. The Men's Residence Hall, located at 1215 South Fourth Street, Champaign, consists of five units named as follows: Thomas Arkle Clark House, Willard C. Flagg House, William Lincoln Noble House, Herbert Jewett Barton House, and Carl Leonard Lundgren House. These houses normally accommodate 370 men for room and board. The Ice Skating Rink, Old Gymnasium Annex, and the West Hall of the Stadium have been remodeled as temporary dormitories for men. The University has secured a number of housing units from the Federal Public Housing Authority which are available for veterans.

At the Galesburg Undergraduate Division, there are twenty-two dormitory units for men, eighteen buildings for married veterans, and two buildings for women students. Resident counselors are available in each of the housing units to provide guidance and assistance to the students.

Requests for information concerning accommodations at Urbana-Champaign may be addressed to the Division of Student Housing, 108 Illini Hall, Champaign, Illinois. This office provides current lists of approved student homes, rental contract forms, and other information concerning room and board.

Student Religious Life

In accord with the general principle of religious freedom in American education, the University of Illinois is a non-sectarian institution, prohibited from teaching religious beliefs. In admitting students it makes no restrictions of creed, just as it makes none of race or class, and in no way does it discourage any particular faith or hinder the work of any organization serving the spiritual life of students. The Y.M.C.A. and the Y.W.C.A. have buildings facing the Urbana campus, and there are numerous religious foundations maintained by churches nearby, for students of the various denominations. Services of the many other churches in the communities are open to students. The religious foundations carry on extensive programs of social and educational activities, including some courses of study for which the University accepts credit. Such courses are limited to sophomores, juniors, and seniors, and not more than ten hours of credit in them may be counted toward graduation.

Student Conduct

The University reserves the right to expel at any time students whose conduct is deemed undesirable or prejudicial to the University community's best interest; examples of which, without excluding others, are gambling, violations of law involving moral turpitude, intoxication, and disorderly conduct. Matters of student discipline are handled by a special committee of the University Senate.

Student Operation of Motor Vehicles

Operation or storage of motor vehicles by undergraduate students enrolled at Urbana and Galesburg is restricted by the University. Special permits to operate motor vehicles are granted to individual students for reasons of physical disability, distance of residence from the campus, and necessary employment.

Illini Union

The Illini Union is the social, cultural, and recreational center for all students in Urbana-Champaign. It is operated, not for profit, but for the benefit of students, faculty, alumni, and friends of the University. Among its many facilities are various food service units, consisting of a cafeteria, soda fountain, large dining room, and several smaller dining rooms. The cafeteria serves special menus at set prices and thus enables students to budget their board. The several lounges are meeting places for students and faculty between classes and in other free times. The browsing room, a branch of the University Library, contains the latest fiction, biography, and other books for general reading. In the General Lounge there are daily programs of recorded music arranged by a student-faculty committee. The recreational facilities include bowling alleys, ping-pong tables,

pool and billiard tables, and rooms for other games. Weekly dances are held in the ballroom. All students pay a nominal fee each semester which entitles them to full use of the building.

Facilities at the Chicago Undergraduate Division include student lounges, student cafeteria, two soda fountains, dining room for faculty and staff, auditorium, and gymnasium. Students pay an activities service fee each semester.

The Galesburg Undergraduate Division offers similar facilities to students, faculty, and staff. The food service consists of a grill, two student-faculty dining halls, and an additional faculty dining room. There is a central lounge, theater, auditorium, gymnasium, and swimming pool. Students pay an activities service fee.

The Chicago Illini Union Building, at 715 South Wood Street, serves similar purposes for students, alumni, and faculty members of the Colleges of Dentistry, Medicine, and Pharmacy. Its facilities include a cafeteria, grill, and soda fountain, a game room and gymnasium, a browsing room, and a music room. The building is operated by the University and financed in part through student fees.

STUDENT ORGANIZATIONS

Extracurricular organizations, activities, and enterprises of undergraduate students in the University operate under the broad guidance of the Dean of Students and the Senate Committee on Student Affairs. This committee's functions are exercised both directly by it and indirectly through various student-faculty boards of control. The boards now administering particular fields of extracurricular student activity are listed below. These boards are at Urbana unless otherwise indicated.

Athletic Council, which has within its jurisdiction the election of student sportsmanagers and cheerleaders, the awarding of varsity letters and freshman numerals, and other matters concerned with athletics at the University.

Gymkana Advisory Board, which supervises activities of the Gymkana troupe.

Illini Board of Control, appointed to conduct the business of the Illini Publishing Company, elects editors, business managers, and other officers and staff members of student publications, and otherwise supervise publication activities. A *Publications Board of Control* supervises publication activities at the Undergraduate Divisions at Chicago and Galesburg.

Illini Theatre Guild, organized to control and coordinate all dramatic performances by member societies.

Illini Union Board, appointed to supervise general activities, to promote school loyalty, and to advance student welfare.

Men's Independent Association Advisory Board, which supervises the M.I.A. program.

Student Organizations Fund Executive Board, which is responsible for operation of the Student Organizations Fund. At Galesburg, the *Student Organizations Fund Committee* administers and supervises expenditures from this fund.

University Concert and Entertainment Board, organized to supervise and conduct all concerts and public entertainments (except social functions) given in University buildings by professional artists.

Woman's Athletic Advisory Board, which controls the affairs of the Woman's Athletic Association.

All student organizations and extracurricular activity participants not working directly under one of the above boards, excepting religious societies, are under the guidance of the Senate Committee on Student Affairs. They are expected to observe the rules and precedents which the committee, in conjunction with its cooperating committee from the Student Senate, establishes for their counsel. Students are urged to call upon the secretary of the committee for advice and assistance in matters touching the policies and conduct of their various extracurricular activities.

Many independent men and women are organized into groups recognized by the University. Groups of five or more men with an approved housemother may organize in the Men's Independent Association. Women students who are not members of sororities are organized under the Women's Group System.

Associations

The *Alumni Association* is the general organization of the alumni of the University. It maintains an office at the University and publishes a monthly periodical, the *Illinois Alumni News*. In this office is compiled the alumni directory, the last edition being published in 1929. An edition for the Colleges of Medicine, Dentistry, and Pharmacy, at Chicago, was published in 1921. Local alumni associations have been organized in many states.

The *Student Organizations Fund* affords centralization of accounts and funds of student organizations and activities. The Comptroller is treasurer of the fund, which is controlled by a student executive board, and the Dean of Students is secretary.

The *Student Senate*, composed of twenty-five undergraduates, represents the entire student body at Urbana in matters affecting student interest, promotes general student welfare, and exercises powers of student government conferred upon it by the Senate Committee on Student Affairs. The *Student Council* at Galesburg and the *Student Congress* at Chicago are similar organizations.

The *Interfraternity Council* and *Panhellenic Council* are general representative bodies of Greek-letter social organizations for men and women, respectively.

The *Military Council* furthers the interests of the Reserve Officers' Training Corps at the University.

The *Young Men's Christian Association* occupies a building near the campus. Every man in the University is eligible for membership, and the rooms are open to all. Religious meetings are held on Sunday evenings. Discussion groups and friendly relations with foreign students are promoted.

The *Young Women's Christian Association* is located in the Hannah McKinley Building, which houses sixty women.

Honorary Societies

The honorary societies or fraternities named below are private intercollegiate organizations of students and graduates, having for their primary purpose the recognition and encouragement of excellence in scholarship in various departments of study. Election is in all cases made by the societies themselves in accordance with their own rules. The University assumes no responsibility for elections.

Societies honoring high scholarship in the colleges are: Alpha Zeta, Gamma Sigma Delta, College of Agriculture; Beta Gamma Sigma, College of Commerce and Business Administration; Kappa Delta Pi (men and women), Phi Delta Kappa (men), College of Education; Alpha Sigma Mu, Tau Beta Pi, College of Engineering; Gargoyle (students in Architecture), Pi Kappa Lambda (students in Music), College of Fine and Applied Arts; Omicron Nu, Phi Upsilon Omicron, students in Home Economics; Kappa Tau Alpha, School of Journalism; Order of the Coif, College of Law; Phi Beta Kappa, College of Liberal Arts and Sciences; Sigma Xi, general research.

Societies honoring high scholarship in the freshman class regardless of college are Phi Eta Sigma (men) and Alpha Lambda Delta (women).

Phi Kappa Phi is a national honorary society electing members from all departments of the University.

College and Departmental Organizations

In each college there are societies and clubs devoted to work of a literary, scientific, technical, or extracurricular nature, auxiliary to the work of various departments. Among these are the following:

Agriculture.—Agricultural Club, Agricultural Council, Agricultural Economics Club, Agricultural Education Club, American Society of Agricultural Engineers, Dairy Production Club, Dairy Technology Society, Field and Farrow Club, Floriculture Club, Four-H Club, Home Economics Club, Hoof and Horn Club, Horticultural Club, Poultry Science Club, Rural Life Club, Alpha Tau Alpha.

Commerce and Business Administration.—Accountancy Club, Artus, Band of X, Banking Club, Commerce Council, Economics Club, Marketing Club, Alpha Kappa Psi, Beta Alpha Psi, Gamma Alpha Chi, Phi Chi Theta, Sigma Iota Epsilon.

Education.—Industrial Education Society, Kappa Phi Kappa.

Engineering.—Student Branch of the American Ceramic Society, Student Branch of the American Institute of Chemical Engineers, Student Branch of the American Society

of Civil Engineers, Student Branch of the American Institute of Electrical Engineers, Student Branch of the American Society of Mechanical Engineers, Engineering Council, Institute of Aeronautical Sciences, Keramos, Mineral Industries Society affiliated with the American Institute of Mining and Metallurgical Engineers, Society of General Engineers, Mu-San, Physics Club, Railway Club, Synton, Chi Epsilon, Eta Kappa Nu, Pi Tau Sigma, Sigma Epsilon, Sigma Tau, Tau Nu Tau.

Fine and Applied Arts.—Fine and Applied Arts Council, Illustrators, Scarab, University Landscape Architecture Society, University Chorus, University Orchestra, University Men's Glee Club, University Women's Glee Club, Arepo, Combined Glee Clubs, Phi Mu Alpha-Sinfonia, Sigma Alpha Iota.

Journalism.—Journalism Council, Gamma Theta Phi, Phi Alpha Chi, Sigma Delta Chi, Theta Sigma Phi.

Law.—Junior Bar, Junior League of Women Voters, Kappa Beta Pi, Nu Beta Epsilon, Phi Alpha Delta, Phi Delta Phi.

Liberal Arts and Sciences.—Bacteriology Club, Burrill Botany Club, Cyclothem Club, English Journal Club, French Club, German Club (Deutsche Verein), Hexapoeicia, Omega Chi Epsilon, Philosophy Club, Spanish Club, Wildlife Club, Zoology Club, Alpha Kappa Delta, Delta Phi Alpha, Eta Sigma Phi, Omega Beta Pi, Iota Sigma Pi, Phi Lambda Upsilon, Pi Delta Phi, Pi Mu Epsilon, Psi Chi, Sigma Delta Pi.

Library School.—Library Club.

Physical Education.—P. E. Major's Club, Alpha Sigma Nu, Delta Theta Epsilon, Sigma Delta Psi.

Miscellaneous Societies and Clubs

Some organizations claim membership from students of nearly all colleges and schools. Among them are the following:

Alpha Delta Sigma, Alpha Phi Omega, Alpha Pi Delta, Alpha Tau Sigma, American Chemical Society, American Fencers League, American Legion Post 909, American Veterans Committee, Association of Women Student Architects and Engineers, American Youth for Democracy, Avukah, Busey Hall, Caisson Club, Cavalry Officers' Club, Chinese Institute of Engineers (American Section), Chinese Students Club, Christian Science Student Organization, Coast Artillery Club, Delta Delta Sigma, Delta Sigma Rho, Dolphins, Engineering Physics Club, Epsilon Phi Sigma, Eta Iota Psi, Evans Hall, Freshman Council, Gamma Delta, Gym Annex Activity Fund, Gymnastica, Ice Rink Activity Fund, Illini Archers, Illini Blackburn Club, Illini Chamber of Commerce, Illini Hall, Illi-Sota, Illini Outing Club, Illini Philatelic Society, Illini Theatre Guild, Intervarsity Christian Fellowship League, Lutheran Student Association, Mask and Bauble, Ma-Wan-Da, Men's Residence Halls Association, Military Council, Mortar Board, National Air Force Association, National Collegiate Players, Newman Club, Orchesis, Pershing Rifles, Phalanx, Phi Kappa Epsilon, Pi Alpha Xi, Pierrots, Pi Tau Pi Sigma, Plateau and Drum, Players Club, Polo Association, Pre-Legal Students Association, Pre-Veterinary Club, Radio Script Society, Rifle Club, Sachem, Scabbard and Blade, Scimitar, Shi-Ai, Skull and Crescent, Socialist Study Club, Stadium Hall, Star and Scroll, Star Course, Student Religious Council, Terrapin Club, Tomahawk, Torch, Tribe of Illini, Turkish Students Society, University Dames' Club, Vet-Set, Woman's Athletic Association, Women's Cosmopolitan Club, and Zeta Phi Eta.

Social Fraternities and Sororities

Social and social-professional fraternities maintaining chapters at the University: Acacia, Alpha Chi Rho, Alpha Chi Sigma, Alpha Delta Phi, Alpha Epsilon Pi, Alpha Gamma Rho, Alpha Kappa Lambda, Alpha Kappa Pi, Alpha Phi Alpha, Alpha Rho Chi, Alpha Sigma Phi, Alpha Tau Omega, Beta Theta Pi, Chi Phi, Chi Psi, Cosmopolitan Club, Delta Chi, Delta Kappa Epsilon, Delta Phi, Delta Sigma Phi, Delta Tau Delta, Delta Upsilon, Farm House, Gamma Alpha, Kappa Alpha Psi, Kappa Delta Rho, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Phi Delta Theta, Phi Epsilon Pi, Phi Gamma Delta, Phi Kappa, Phi Kappa Psi, Phi Kappa Sigma, Phi Kappa Tau, Phi Sigma Kappa, Pi Kappa Alpha, Pi Kappa Phi, Pi Lambda Phi, Psi Upsilon, Sigma Alpha Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Nu, Sigma Phi Delta, Sigma Phi Epsilon, Sigma Phi Sigma, Sigma Pi, Tau Delta Phi, Tau Epsilon Phi, Tau Kappa Epsilon, Theta Chi, Theta Delta Chi, Theta Kappa Phi, Theta Xi, Triangle, Zeta Beta Tau, and Zeta Psi.

Sororities maintaining chapters at the University: Alpha Chi Omega, Alpha Delta Pi, Alpha Epsilon Phi, Alpha Gamma Delta, Alpha Kappa Alpha, Alpha Omicron Pi,

Alpha Phi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Phi Epsilon, Delta Sigma Theta, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, Phi Sigma Sigma, Pi Beta Phi, Sigma Delta Tau, Sigma Kappa, Theta Upsilon, and Zeta Tau Alpha.

Debating

Men's and women's teams representing the University of Illinois engage annually in intercollegiate debates and discussions in the Western Conference Debate League, which consists of the Universities of Chicago, Illinois, Indiana, Iowa, Michigan, Minnesota, Northwestern, Ohio State, Purdue, and Wisconsin. The teams are chosen in preliminary inter-squad competitions. Open-forum non-decision debates are held annually also with various other colleges and universities.

SCHOLARSHIPS FOR UNDERGRADUATES

Unless otherwise stated, an undergraduate scholarship covers the tuition fee in any department of the University. For more detailed information, apply to the Registrar.

County Scholarships.—One scholarship for each county in Illinois, created by statute, and sixteen additional scholarships for Cook County, established by the Board of Trustees. Awarded by competitive examinations given on the first Saturday in June under the supervision of the County Superintendent of Schools. Candidates write on English (rhetoric) and on two of the following fields: mathematics, natural science, and social studies. A candidate who has had college work is not eligible.

General Assembly Scholarships.—One nomination annually by each member of the General Assembly.

Scholarships in Agriculture and Home Economics.—Two scholarships for each county—one for students in agriculture and one for students in home economics—awarded on recommendation of the Illinois Farmers' Institute to candidates ranking in the upper fifty per cent of their high school graduating class, or if one year or more of college work has been completed, averaging fifteen points above the passing grade in such work, who pass the competitive County Scholarship examination (see above). Applications must be filed with the Illinois Farmers' Institute, 122 Mumford Hall, Urbana, not later than May 31 of each year. Students who have attended the University of Illinois are not eligible.

University Scholarships.—The Board of Trustees has established for each year ten scholarships, open to residents of Illinois and known as University Scholarships. These scholarships exempt holders from the tuition fee as required in those colleges of the University which admit students directly from high schools. A University scholarship may be lapsed or forfeited if the holder fails to maintain a satisfactory record, is dismissed by the University authorities, or ceases to be a resident of Illinois. Awards are made on the basis of the scholastic promise and financial need of the applicant.

State Military Scholarships.—Acts of the General Assembly passed in 1919 and 1943 provide scholarships for veterans of World War I and World War II who, at the time of enlistment, were residents of Illinois or students in the University of Illinois. These scholarships exempt the holders from the tuition fee in any department of the University. In 1943, the General Assembly also established one scholarship in each county for descendants of veterans of World War I and one scholarship for descendants of veterans of World War II. These scholarships are awarded by competitive examination held on the first Saturday in June.

John M. Gregory and Louisa C. Gregory Scholarships.—Scholarships of \$100 each are available under the will of Mrs. Louisa C. Gregory, which provides that the applicants be "self-sustaining students free from the vices of smoking and chewing tobacco and from the use of intoxicating liquors." Awarded to students who have been in residence at the University for at least one semester, on the basis of a competitive examination held in December, in years when funds are adequate for at least two scholarships.

E. A. Wallace Memorial Scholarship.—Established by Mrs. Gertrude E. Haweis "for the benefit of students in the University from Havana, Illinois, selected by the Board of Education of that city."

La Verne Noyes Scholarships.—Made available under the will of La Verne Noyes. Cover part of student fees for one year. Open to students who served in the army or navy of the United States of America in World War I, or to descendants of active participants in that war.

John C. Ruettinger Memorial Scholarship Fund.—Established by Mr. John W. Ruettinger, of Chicago, an alumnus of the University of the class of 1927, in memory of his father. Provides annually tuition and other educational expenses for one or more worthy and needy undergraduate students. Applications should be made to the Registrar as chairman of the committee which selects the candidates.

Phyllis Pierce Ruettinger Scholarship.—Established in memory of Phyllis Pierce Ruettinger by her mother. Awarded annually to junior or senior women registered at the University of Illinois, on the basis of character, scholarship, general ability, and financial need.

Illinois Congress of Parents and Teachers Scholarships.—Two scholarships each year, of a value of \$200 each, made available by the Illinois Congress of Parents and Teachers. Applicants must be graduates of Illinois high schools maintaining local units of the Illinois Congress of Parents and Teachers. Applications may be made to the Registrar as chairman of the committee which selects the candidates.

Morava Scholarships.—Made available under the will of Wensel Morava. Awarded annually in varying amounts. Applications should be made to the Registrar as chairman of the committee which selects the candidates.

Student Senate, Woman's League, and Student Affairs Scholarships.—The Student Senate, the Woman's League, and the Committee on Student Affairs have made available funds from which the University Committee on Special Undergraduate Scholarships may award annual scholarships of varying amounts to needy students with good records.

Linsley F. Ter Bush Memorial Scholarship Fund.—Established by a bequest in the will of the late Mrs. Louise M. Leopold. The income from this fund is used for scholarships. Awards are made by the University Committee on Special Undergraduate Scholarships.

Scholarships for Foreign Students.—The Board of Trustees has established ten scholarships each year, covering the tuition fee, for students from countries friendly to the United States. Applicants for these scholarships who are from the countries of South and Central America are selected through recommendation of the Institute of International Education. Other applicants should apply to the Registrar of the University, who serves as chairman of the committee which selects the candidates.

Dunlap Harrington Memorial Fund.—Established in memory of Dunlap Harrington by his brother. Provides an award of \$50 to a male senior in his final semester, who is financially unable to take part in the special events of that semester.

Latin Contest Scholarship.—Exemption from the tuition fee for one year, to the winner of the annual Latin contest sponsored by the Illinois Classical Conference.

William J. Cook Fund Scholarships.—A number of scholarships are available to young men who are graduates of Cook County high schools, under a bequest made by Mr. William J. Cook in 1940. Applications should be filed with the Chicago Community Trust, 10 South LaSalle Street, Chicago. High school seniors should apply not later than April 15; college students not later than May 15.

Lydia E. Parker Bates Scholarships in Fine Arts.—Available in varying amounts to undergraduate and graduate students in art, architecture, architectural engineering, and landscape architecture. Awarded on recommendation of a committee of the faculty of the College of Fine and Applied Arts.

Illinois Federation of Women's Clubs Scholarships.—Through the gifts of the state organization and the third congressional district of the Illinois Federation of Women's Clubs, funds are available for a limited number of scholarships for properly qualified and deserving students in occupational therapy. Applications should be made to the Registrar as chairman of the Committee on Special Undergraduate Scholarships.

Thomas J. Smith Scholarships in Music.—Four scholarships available annually for women, preferably from Champaign County. Awarded to students who are unable to pay the customary charges for instruction in music, on the basis of comparative promise as judged by a committee of the School of Music.

William Anderson Scholarship in Music.—The income from a gift by Mrs. Margaret Anderson in memory of her late husband, providing a scholarship for a needy and

talented student registered in the School of Music. The award is made by the Committee on Special Undergraduate Scholarships on recommendation of a committee of the faculty of the School of Music.

Manierre Barlow Ware Scholarships.—The income from a gift to the University made in memory of Manierre Barlow Ware by his mother. Awarded annually to male students preferably in the College of Agriculture who are not otherwise able to provide funds for their education. The scholarships may be awarded to male students who are enrolled in or who seek to enroll in other undergraduate divisions of the University, if in the judgment of the University this is desirable.

Libonati Scholarship.—One scholarship of \$250 a year for four years, made available by a gift from Mr. Elliodor M. Libonati. This scholarship is awarded to a needy and deserving war orphan. Applications may be made to the Registrar as chairman of the committee which selects the candidate.

Sears Roebuck Scholarships.—A fund to aid freshman and sophomore students in the College of Agriculture made available through a gift from Sears, Roebuck, and Company. It is administered through the office of the Dean of the College of Agriculture and is restricted to those young men whose high school and other records show promise of superior attainment and who are unable to attend college without financial assistance.

Borden Agricultural Scholarship.—The Borden Company has established a fund from which one \$300 scholarship is awarded annually to a student in the College of Agriculture who at the beginning of his senior year has achieved the highest scholarship average and who has completed two or more courses in dairy husbandry. Awards are made by a Committee of the College of Agriculture.

Borden Home Economics Scholarship.—The Borden Company has established a fund from which one \$300 scholarship is awarded annually to a student majoring in Home Economics who upon entering her senior year has achieved the highest scholarship average and who has completed two or more courses in food and nutrition. Awards are made by a Committee of the College of Agriculture.

United Spanish War Veterans Auxiliary Scholarship in Home Economics.—\$50 annually awarded to a student in home economics at the end of the freshman year. Awarded on recommendation of the Department of Home Economics on the basis of scholarship, qualities of leadership, and financial need.

Lois Shepherd Green Scholarship Fund.—Established by Frederick Green, Professor of Law, *Emeritus*, in memory of his wife. The income is to be used for scholarships to undergraduate students on recommendation of the faculty of the Department of Philosophy.

Ceramic Scholarships.—Ten two-year scholarships, covering the tuition fee, are available each year. These scholarships are financed by the industry through the Ceramic Scholarship Trust Fund. Awards are made by the committee in charge of special undergraduate scholarships. Recommendations of the Department of Ceramic Engineering are considered in selecting the candidates.

Frederick D. Secor Memorial Scholarships.—Established by a bequest in the will of the late Bessie Secor, in memory of her father, to provide scholarships for students in electrical engineering.

Illinois Mining Institute and Peabody Coal Company Scholarships.—Two scholarships each year, of \$100, to freshman men, preferably from a mining community in the state, who have had coal mining experience, or whose fathers are employed in the industry. Two similar scholarships established by the Peabody Coal Company, preferably for employees, former employees, or the sons of employees of that company. The scholarships are awarded by the University Committee on Special Undergraduate Scholarships on recommendation of the Illinois Mining Institute, and are renewable annually for a total period of four years.

Sahara Coal Company Scholarship.—One scholarship of \$200 a year is awarded annually. Each scholarship is for a period of four years, but may be canceled if the holder fails to maintain satisfactory scholarship, or, if for any reason, he is dropped from the University. Awards are made by the Committee on Special Undergraduate Scholarships, on recommendation of the Head of the Department of Mining and Metallurgical Engineering. Preference is given to applicants from Saline County and to applicants whose fathers are or have been employed by the Sahara Coal Company.

Journalism Alumni Memorial Scholarship.—\$50 annually awarded to a junior in the School of Journalism, payable at the beginning of his senior year. Awarded on recommendation of the faculty of the School of Journalism on the basis of scholarship, character, aptitude in journalism, and other related qualities.

Sinai Temple of Champaign-Urbana Scholarship.—A scholarship of \$50, established in 1943 by the Sinai Temple of Champaign-Urbana. Awarded annually, on recommendation of a faculty committee of the School of Music, to an upperclass student in music, on the basis of scholastic excellence, natural ability, and financial need.

PROFESSIONAL COLLEGES IN CHICAGO

The following special scholarship funds are available for students in the Professional Colleges in Chicago, in addition to the undergraduate scholarships provided by the General Assembly of the State of Illinois.

American Foundation for Pharmaceutical Education.—Through funds secured from the Foundation, the College of Pharmacy awards two scholarships of \$200 each on a competitive basis to high school seniors or to recent graduates who are residents of the State of Illinois. Only students ranking in the upper half of their graduating classes are eligible.

Illinois Federation of Women's Clubs Scholarships.—Established in 1944, this fund provides scholarships for students in occupational therapy. It is granted on the basis of the financial need of the student. Application may be made to the Registrar, who is chairman of the committee which selects the candidates. Recommendations of the Dean of the College of Medicine are considered in selecting candidates for the awards. Special consideration is given deserving applicants who are recommended by the Illinois Federation of Women's Clubs.

Rea Scholarships.—The annual income from a fund established in 1899 by the will of Dr. Robert Laughlin Rea is used for four scholarships, awarded by a committee of the faculty, to help pay the tuition fees of needy students in the College of Medicine. First-year students are not eligible.

State Military Scholarships.—Acts of the General Assembly passed in 1919 and 1943 provide scholarships for veterans of World War I and World War II who were residents of Illinois or students of the University of Illinois at the time of enlistment. These scholarships exempt the holders from the payment of the tuition fee. The scholarships do not cover special fees for laboratory materials or laboratory and building usage. In 1943, the General Assembly also established in each county one scholarship for descendants of veterans of World War I and one scholarship for descendants of veterans of World War II. The scholarships for descendants of war veterans are awarded by competitive examination held on the first Saturday in June.

Williamson Memorial Scholarship.—Members of the faculty and friends of the late Professor Charles Spencer Williamson, for many years Head of the Department of Medicine, have established an endowment fund, the income from which is used as a scholarship for a capable and needy student, either graduate or undergraduate.

STUDENT LOAN FUNDS

The following loan funds have been established for the benefit of worthy students of the University who are in need of financial aid. Loans are not ordinarily made to students during their first year at the University. Each application must be approved by the Dean, Director, or Assistant Dean of the College or School in which the student is registered, by the Dean of Students, the Dean of Men, or the Dean of Women, and by the Comptroller; in case of disagreement among these officers the application will be submitted to the Chairman of the Finance Committee of the Board of Trustees. Security in the form of an endorser or collateral satisfactory to the Comptroller must be given in all cases unless otherwise provided in the deed of gift of any fund. Application blanks may be obtained from the offices of the Bursar, the Dean of Men, and the Dean of Women.

Dora E. Biddle Loan Fund for Girls.—This fund was derived in 1919-1920 from two gifts by Mrs. Dora E. Biddle, of Macon, Illinois. Preference is given to those women students most advanced in their University work.

Carter-Pennell Loan Fund.—Donated by the late Joseph Carter and his wife, Jane Pennell Carter, in 1923. Loans may be made to any student of sophomore standing in the Colleges of Engineering and Agriculture, or to any student in the College of Liberal Arts and Sciences who is specializing in science.

Champaign Business and Professional Women's Club Loan Fund.—Presented to the University on October 8, 1940. Loans from this fund are made to deserving women students.

Chicago Illinae Club Fund.—Established by the Chicago Illinae Club especially for women students of the University.

Class of 1907 Loan Fund.—Presented to the University on June 11, 1932, this fund is used for the making of loans to students under general rules of the Board of Trustees governing loan funds, with no restrictions except that preference be shown to lineal descendants of members of the class.

Consolidated Loan Fund.—This fund results from the merger of the Automobile Show Fund, the Class of 1895 Loan Fund, the Graduate Club Loan Fund, and the Student Friendship Fund.

Grace Darling Memorial Fund.—Founded by Mrs. R. V. Cram, of Minneapolis, in 1922. Operated under the regulations of the Edward Snyder Fund described below.

Louis Edward Dawson Memorial Fund.—A gift from Mrs. Edward Dawson, accepted November 23, 1945, as a memorial to her son, Louis Edward Dawson. The fund is for aiding worthy students in chemistry.

Denison Memorial Fund for Worthy Seniors.—The late Charles A. Denison, of Argenta, bequeathed this fund to be used for loans to worthy senior students on recommendation of the President and Treasurer of the University.

Detroit Illinae Club Loan Fund.—Established May 11, 1932, as a gift from the Detroit Illinae Club.

Harry J. Diffenbaugh Trust Fund.—The late Harry J. Diffenbaugh, of the Class of 1882, established a trust fund, the income of which is used for loans to worthy and needy students who are residents of the State of Missouri attending the University of Illinois. Applications for loans may be made to the Dean of Men of the University of Illinois or to the First National Bank of Kansas City, Missouri, the administrators of the trust fund.

Electrical Engineering Loan Fund.—Established by the Electrical Engineering Society and maintained by the Student Branch of the American Institute of Electrical Engineers, this fund includes income from the electrical shows and is available for juniors and seniors in good standing in the curricula in Electrical Engineering and Engineering Physics.

Engineering Student Loan Fund.—The residual assets of the Real Co-operative Company (formerly the Engineering Co-operative Society) were accepted by the University in 1936 for the purpose of establishing a loan fund for the benefit of students in the College of Engineering.

James Wilford Garner Memorial Fund.—Presented to the University June 24, 1941, this fund is to be used for loans to worthy students in political science.

Samuel and Lydia Hare Student Loan Fund.—The late Samuel Hare, of Piper City, bequeathed this fund (accepted by the Board of Trustees October 15, 1937) for loans to students who have by previous study demonstrated their worthiness.

Mary Trowbridge Honey Loan Fund.—A bequest of the late Mary Trowbridge Honey, of Wayne, Nebraska, accepted by the Board of Trustees May 16, 1942, for loans to students in the Department of the Classics.

Margaret Lange James Student Loan Fund.—Established by a gift from President E. J. James in 1914 and increased by the University Senate as a memorial to him. Loans may be made to students, preferably women, who have been in residence at least one year, have attained junior standing, are in residence, and expect to graduate.

A. F. Kaeser Student Loan Fund.—A gift from Dr. A. F. Kaeser, of Highland, Illinois, accepted on September 30, 1939, by the Board of Trustees. Graduates of high schools now or at any time located in Highland, Illinois, are to be given prefer-

ential consideration for loans from this fund. If this loan fund is not exhausted through loans made to these graduates, loans may be made to graduates of high schools located in the counties of Madison, Bond, and Clinton. Loans made to any one student shall not exceed \$200 annually or \$800 for the four-year period.

Kappa Delta Pi Student Loan Fund.—Accepted by the Board of Trustees June 15, 1935, as a gift from Alpha Chapter of Kappa Delta Pi. Available only to worthy seniors in the College of Education.

Willis Prentice Kimble Loan Fund.—A memorial fund established by Mrs. Kimble in 1929. Loans may be made to sophomores, juniors, and seniors, but not in excess of \$100 to any one individual.

William E. Levis Loan Fund.—Established in 1936 by a gift from William E. Levis, of the Class of 1913, President of the Owens-Illinois Glass Company. Loans will be made (1) to employees or children of employees of the Owens-Illinois Glass Company and its affiliated companies or subsidiaries, who are students in attendance or prospective students expecting to register immediately at the University; and (2) if funds are available, to students who have been in attendance at the University for at least one year, under the general regulations governing loan funds.

William B. McKinley Loan Fund.—This fund is made up of several donations from the late Senator William B. McKinley, the gifts being made between 1912 and 1926. Loans may be made to male students, who have been in residence at least one year and intend to graduate.

J. R. Morris Loan Fund.—Donated by the late Joseph R. Morris, of Anne Arundel County, Maryland, in 1922. Loans are made to students who have been in residence at least one semester. Preference is given to students who are advanced in University work.

Loan Fund for Overseas Soldiers.—Originally donated in 1919, with an addition in 1924, this fund is available to soldiers, sailors, and marines with overseas service, and to their descendants. Qualifying students in the junior, senior, or postgraduate years are eligible, or students in any year in the College of Agriculture.

Marcus Russell Loan Fund.—Donated by the late Marcus Russell, of Los Angeles, California, in 1926. "The proceeds from this fund shall be used as a fund to be loaned to worthy and indigent students."

Edward Snyder Fund.—This fund was established in 1899 by the late Edward Snyder, Professor of German in the University. Loans may be made to students of junior standing who are in residence and expect to graduate. Preference is given to those of high rank and advanced standing, but no distinction is made as to sex or course of study.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, provides for loans to students under the age of twenty-five years, preferably in the upper classes.

St. Louis Illinae Club Loan Fund.—Established March 29, 1937, as a scholarship loan fund.

Harry Roberts Temple Fund.—Established in 1924 by Mrs. Frieda Block Temple. The regulations of the Edward Snyder Fund apply except that preference is given to students in the Department of Architecture.

Woman's Athletic Association Loan Fund.—Established September 28, 1932, this fund is available to women students during the senior year.

Woman's League Fund.—Established by the Woman's League in 1911. This fund is administered under the regulations of the Edward Snyder Fund.

Emergency Loan Funds

Emergency loan funds are available in small amounts for short periods only. In the Urbana departments the approval of the Dean of Men or Dean of Women and the Comptroller are required. In the Chicago and Galesburg Undergraduate Divisions, the approval of the Dean of Students is required.

Cora C. Bright Memorial Loan Fund.—A gift from the Illinois Congress of Parents and Teachers in 1939, for emergency loans to students at Urbana.

Class of 1932 Fund.—Presented to the University on June 15, 1934, through the Alumni Association, for emergency loans to students at Urbana.

Verne Hall Detweiler Loan Fund.—A gift from the Illinois Congress of Parents and Teachers in 1936, for emergency loans to students at Urbana.

Edward C. Heidrich, Jr. Loan Fund.—Established in 1944 by a gift from Edward C. Heidrich, Jr., this fund is for emergency loans to students at Urbana.

Thomas L. Seanor Memorial Fund.—This fund was presented November 1, 1945, by Lieutenant Harry F. Seanor as a memorial to his brother, Lieutenant Thomas L. Seanor.

Irene Symonds Loan Fund.—A gift from the Illinois Congress of Parents and Teachers, accepted November 8, 1943, as a memorial to Irene Symonds. The fund is for emergency loans to students at Urbana.

Tau Delta Tau Loan Fund.—This fund was presented November 1, 1945, by Tau Delta Tau fraternity as a memorial to two of its members, John Donald Danielson and Joel Hubbard Rossiter.

University Faculty Emergency Loan Funds for Students.—Established in 1932-1933, these funds represent a portion of the money set aside for emergency loans to students at Urbana from funds solicited in 1931 by the University Senate Committee on Unemployment and Relief.

PROFESSIONAL COLLEGES IN CHICAGO

Several loan funds have been established for the benefit of worthy students who have satisfactorily completed at least one year of work in the University and are in need of financial aid in order to finish their courses. Information concerning the regulations for loans may be obtained from the office of the dean of each college.

Gallie-Dittmar Student Loan Fund in the College of Dentistry.—Emergency loans to students in the College of Dentistry are made from this fund, which is named in honor of Dr. D. M. Gallie, Professor of Clinical Operative Dentistry, *Emeritus*, and Dr. G. W. Dittmar, Professor of Clinical Prosthetic Dentistry, *Emeritus*. This fund has been augmented at various times through gifts from interested individuals.

Emergency Loan Fund in the College of Medicine.—Begun in 1933 by contributions from staff members, this fund has been augmented by gifts from various organizations and individuals.

Ebert Loan Fund in the College of Pharmacy.—In 1907, following the death of Mr. Albert E. Ebert, who had taken an active part in the development of the College of Pharmacy, the Alumni Association of the College of Pharmacy established a fund in memory of Mr. Ebert. Later contributions were made by the Women's Organization of the Chicago Retail Druggists' Association, to establish a loan fund. In 1931 the funds were combined into one known as the Albert E. Ebert Loan Fund. The Class of 1932 also contributed to this fund. Loans are made to deserving students in the College of Pharmacy.

Goldenrod Ice Cream Company Loan Fund in the College of Pharmacy.—Established May 24, 1943, for loans to students in Pharmacy.

Goldstine Emergency Loan Fund in the College of Pharmacy.—A gift from Mr. Harry Goldstine in 1943 as an emergency loan fund for students in Pharmacy, and added to the original emergency loan fund in pharmacy established by the Board of Trustees June 6, 1933.

Kellogg Loan Fund in Occupational Therapy.—Established March 14, 1944, by a gift from the W. K. Kellogg Foundation, this fund is for loans to students in occupational therapy.

PRIZES AND AWARDS

Competitive prizes, scholarships, fellowships, and miscellaneous awards, which are offered to students in the University, are classified here as follows: (1) those authorized by the Board of Trustees; (2) those awarded by local organizations; and (3) those not limited to students at the University of Illinois, but offered at other schools as well. The following lists are subdivided according to the colleges, schools, or departments conducting the competitions.

PRIZES AUTHORIZED BY THE BOARD OF TRUSTEES

General Competitions

Bryan Prize.—In 1898, Mr. William Jennings Bryan gave to the University the sum of \$250, from the interest on which a prize of \$50 is offered for the best essay on a topic relating to the science of government. The contest is open to all undergraduate students. The essays may not be less than 3,000 nor more than 6,000 words in length, and they must be left at the office of the Department of Political Science not later than the second Wednesday in May. It is suggested that the essays be on some phase of American government and that contestants confer with the Department of Political Science as to the selection of a topic. The prize is ordinarily offered every fifth year. It will be offered next in 1948.

English Poetry Prize.—The Department of English offers a prize of \$25 for the best undergraduate poem or group of poems of the year.

Thacher Howland Guild Memorial Prize.—Friends of Thacher Howland Guild, Instructor and Associate in English, 1904-1914, have endowed the Thacher Howland Guild Memorial Prize, an annual prize of \$25, to be given to the undergraduate student submitting the one-act play which, in the opinion of a committee appointed by the Department of English, shows the greatest originality and literary merit. The award may be withheld in any year if no production is found worthy of a prize.

Thrift Essay Prize.—The income from a fund established in 1918 by the committee for the sale of War Savings Stamps in Illinois is available for prizes for essays on thrift. Prizes are awarded either annually or biennially. Any student in a college or university in the state who has had a course in the principles of economics is eligible to compete. The essays deal with some aspect of thrift, as designated by the Head of the Department of Economics, who is in charge of the contest.

College of Commerce and Business Administration

Commerce Dean's Award.—Three seniors and three alumni of the College of Commerce and Business Administration are chosen annually by the Dean of the College to receive an award in recognition of their outstanding services to the College and the University. The names of those given the award are engraved on a plaque hung in David Kinley Hall.

College of Engineering

Ira O. Baker Prizes.—The late Dr. Ira O. Baker, Professor of Civil Engineering, Emeritus, endowed two prizes for the two ranking senior students in civil engineering. These prizes, amounting to \$75 and \$25, respectively, are awarded primarily on excellence of scholarship and secondarily on personal qualities and professional activity. The names of the winners in each year are placed on a bronze tablet located near the office of the Department of Civil Engineering, and a special certificate is given to each winner.

College of Fine and Applied Arts

Allerton American Traveling Scholarships.—For the past several years Mr. Robert Allerton has given the Department of Architecture the sum of \$800 to be used during the summer "for a trip through New England by the two juniors who stood best in the junior class in the History of Architecture" for the year. This award enables these students to study early American architecture on the Atlantic seaboard.

American Institute of Architects Prizes.—The American Institute of Architects awards annually a medal and a book to the senior in architecture whose development during the four-year course is the most consistent and best, and also a book to the senior in architecture who ranks second. Scholarship in all work is considered in these awards.

Kate Neal Kinley Memorial Fellowship.—This fellowship was established in 1931 to promote advanced study in the fine arts, in memory of the wife of a former president of the University and in recognition of her influence in promoting these and similar interests. This fellowship enables a graduate of Illinois, or some similar institution of equal educational standing, to pursue advanced study for one year at home or abroad. This fellowship is not open to students of architectural construction, city planning, or landscape architecture. The award is made annually under the direction of the College of Fine and Applied Arts.

Mary C. McLellan Scholarship in Art.—Established by bequest of the late Mary C. McLellan of the Class of 1888, and accepted by the Board of Trustees in 1942, this scholarship is awarded as funds warrant under the direction of the Department of Art. It is open to graduates of the University who have demonstrated unusual excellence in art and have given promise of professional success. The stipend is to be used for professional development through travel in America or abroad, or for study at a recognized institution or with a qualified private master.

Plym Fellowships in Architecture and Architectural Engineering.—The late Francis J. Plym, a graduate of the class of 1897, endowed two fellowships, one in architecture and the other in architectural engineering, with stipends of \$1,200 each. The winners ordinarily are required to spend a year in study abroad.

Plym Prizes.—Through endowment by the late Francis J. Plym, the Department of Architecture offers annually certain prizes for undergraduate work. The prizes in architectural engineering represent three awards to those senior architectural engineers whose work, attitude, and ability are judged the highest. The prize for summer sketches is awarded to that student who, during a summer vacation, makes the most interesting and best freehand sketches. The prize for sketch problems is offered as a stimulation for the better development of the sketch problems during the year.

Richard F. Voynow Prize in Music.—Through a gift from Colonel Edward E. Voynow, of New York City, a prize of \$50 is awarded annually to the student enrolled in the School of Music who submits the best essay on a subject selected by the Director of the School of Music, preference to be given to a subject dealing with some phase of modern popular music.

College of Law

Harker Prizes.—The late Judge O. A. Harker, Professor of Law, *Emeritus*, who was Dean of the College of Law from 1903 to 1916 and again in 1920-1921, endowed two annual prizes: the annual income of \$2,000 to the senior making the highest average grade in law subjects for the three years in which he was registered; and the annual income on \$1,000 to the junior making the highest average grade in law subjects for the two years in which he was registered.

Department of Military Science and Tactics

Hazelton Medal.—Captain W. C. Hazelton provided, in 1890, a medal which is awarded to the best-drilled freshman in the elementary course. Each competitor must have been in attendance at the University at least sixteen weeks of the current college year and have had not more than one unexcused absence from drill. The medal is awarded on Armed Forces Day for excellence in the same details as in the University Gold Medal contest. The successful competitor retains possession of the medal until the fifteenth of May of the following year, when he must return it for the next competition.

University Gold Medal.—The Trustees provide annually a gold medal to be awarded on Armed Forces Day to the best-drilled second-year elementary course student, whose property the medal becomes. To be eligible for this award, a student must have completed three semesters of work in military drill with a grade not lower than "B," and three semesters of work in military theory with a grade not lower than "A"; and he must have an average standing not lower than "C" in all his other studies for the preceding semester.

Chicago Tribune Awards for Military Merit.—The Chicago Tribune awards three medals each semester to University of Illinois R.O.T.C. cadets who are most outstanding both in military and college subjects. At the end of each semester the medals are awarded to each of the junior, the sophomore, and the freshman cadets who have received an "A" in both military practice and theory, and who have the highest University academic averages for the semester. The cadets must be in good standing in the R.O.T.C. at the time the awards are presented. Where ties exist in the same class, all semester averages, other than military, of the candidates who are tied are added, and the candidate having the greatest total is the winner. When candidates who have completed but one semester are tied, all such candidates are declared co-winners of the award, the actual recipient of the medal determined by lot; similarly, in the cases of cadets in the sophomore or junior classes who have identical academic averages, where identity of the averages can not be broken by adding all semester averages other than military, the cadets concerned are designated co-winners of the award and the actual recipient of the medal determined by lot.

PRIZES AWARDED BY ORGANIZATIONS AT THE UNIVERSITY

General Competitions

Alpha Lambda Delta Prize.—The national organization of Alpha Lambda Delta, honorary society for freshman women, offers annually a book to the senior woman who in her freshman year was elected to Alpha Lambda Delta and has maintained the highest scholastic average among the women in the graduating class.

Chi Omega Prize.—The University of Illinois Chapter of Chi Omega offers annually a prize of \$25 to the senior woman who has consistently done the most outstanding work in the field of sociology.

Thomas Arkle Clark Prize.—The freshman honorary society, Phi Eta Sigma, gives each year a prize of \$25 to the sophomore member of Phi Eta Sigma who has attained the highest scholastic average for his first three semesters in the University. This prize is awarded as soon as possible after the grades are available for the first semester. In case two men have the same average, other factors are considered, such as extracurricular activities and outside work.

Phi Kappa Phi Scholarships.—The local chapter of Phi Kappa Phi, national honor society, gives two or more scholarships annually for graduate study at the University to members of the local chapter who are graduates of the University or members of the graduating class, selected on the basis of scholastic record and promise of success in graduate work. Applications should be addressed to the local secretary of the society early in the second semester.

College of Agriculture

Alpha Zeta Cup.—A silver cup is awarded each year to the freshman in the College of Agriculture who makes the highest average for both semesters.

Gamma Sigma Delta Prize.—At the end of the first semester each year the senior in the College of Agriculture who ranks highest in scholarship, on a basis of a minimum of four semesters of work in residence in the University, has his name inscribed on a bronze tablet in the Agriculture Library.

Home Economics Club Cup.—Each year the name of the freshman in home economics who makes the highest average is engraved on a cup provided by the Home Economics Club.

Omicron Nu Plaque.—Each year the name of the senior in home economics who ranks highest in scholarship is inscribed on the Omicron Nu plaque which hangs in Bevier Hall.

College of Commerce and Business Administration

Alpha Kappa Psi Scholarship Medallion.—Epsilon Chapter of Alpha Kappa Psi, a professional fraternity in commerce, awards annually a scholarship medallion to the male student pursuing a curriculum in the College of Commerce and Business Administration who has attained the highest scholastic average for three years of collegiate work in the University. The name of the winner is engraved on a scholarship tablet on display in the college office.

Beta Gamma Sigma Cup.—Beta Gamma Sigma annually honors the freshman in the College of Commerce and Business Administration who makes the highest average in the first semester's work. The name of the winner is engraved on a silver cup on display in David Kinley Hall.

Phi Chi Theta Key.—The professional sorority, Phi Chi Theta, awards a key each year to the woman in the junior class in the College of Commerce and Business Administration who ranks highest in the estimation of a committee composed of three members of the faculty and one member of the sorority. Scholastic records, extracurricular activities, and promise of success in business are considered.

College of Education

Kappa Delta Pi Award.—Alpha Chapter of Kappa Delta Pi offers annually an award of \$10 to an outstanding senior in the College of Education. The award is granted to a student of high character who has exhibited unusual proficiency in practice teaching and who has attained superior scholarship in his field of specialization and high scholarship in all his University work. The name of the recipient is engraved on a plaque hung in the office of the Dean of the College of Education.

College of Engineering

Awards of the American Society of Civil Engineers.—Junior membership for one year in the American Society of Civil Engineers, including the badge of the society and an engrossed certificate of award, is presented each year by the Illinois Section of the society to one graduating civil engineer and by the Central Illinois Section to two graduating civil engineers and to one graduating non-civil engineer who have attained high scholarship averages and who have been active in promoting the affairs of the student chapter at the University.

Awards of the American Society of Mechanical Engineers.—The Central Illinois Section of the society awards two prizes of \$10 and \$15 annually for the best papers prepared by senior student members of the society at Urbana.

College of Fine and Applied Arts

Alpha Rho Chi Medal.—Alpha Rho Chi, national architectural fraternity, provides a bronze medal each year to the Department of Architecture, to be awarded to a senior who has shown ability for leadership and given promise of professional merit.

Art Faculty Prizes.—Members of the faculty in the Department of Art offer each year certain prizes for outstanding work by students in history of art, painting, and related fields.

Ricker Prize.—Gold keys are awarded annually for the three best essays on some phase of the history of architecture by students registered in the second year of work in this subject. This prize is given by Anthemios Chapter of Alpha Rho Chi in recognition of the distinguished contributions made by the late Dr. Nathan Clifford Ricker, who for fifty years taught the history of architecture in the University.

Scarab Medals.—Scarab, architectural fraternity, offers annually several bronze medals as follows: (1) for freehand sketching open to all students in architecture; (2) for outstanding work in freshman architectural design; (3) for the best solution of the first major second-semester problem in sophomore design; (4) for the highest award on the second major second-semester problem in junior design; (5) to the student in architectural engineering with the highest record made in freshman and sophomore design.

University Landscape Architecture Society Prizes.—Cash prizes are awarded annually to the two students in landscape architecture who do the best freehand drawings during the preceding summer. The winner of the annual scholarship competition, open to juniors and seniors, receives a prize and has his name inscribed on a permanent scroll.

Pi Kappa Lambda Award.—The payment of all initiation fees of Pi Kappa Lambda, national honorary music fraternity, is awarded annually to the senior student in Music who has the highest scholastic average.

School of Journalism

Alpha Delta Sigma Plaque.—Alpha Delta Sigma, national professional advertising fraternity, selects and recognizes the outstanding junior in the School of Journalism each year. The selectee's name is engraved on a wall plaque for permanent display in Gregory Hall.

St. Louis Advertising Club Award.—An all-expense trip to St. Louis, Missouri, for one week is awarded to two seniors in advertising, one man and one woman, as guests of the St. Louis Advertising Club. Selection is by the faculty of the School of Journalism as a recognition of achievement and promise in the profession of advertising.

Sigma Delta Chi Certificates.—Each year the national journalism fraternity, Sigma Delta Chi, awards certificates to the upper ten per cent of the graduating class in the School of Journalism. Also a special citation of achievement is awarded to the outstanding man in the class, selected on a basis of scholarship, character, and journalistic competence.

Theta Sigma Phi Award.—The outstanding woman in the graduating class is selected each year by Theta Sigma Phi, woman's professional journalism fraternity, and is awarded a certificate of achievement.

College of Law

Frederick Green Moot-Court Competition Award.—The Horner Chapter of Nu Beta Epsilon, law fraternity, has presented to the University a gold cup on which is inscribed each year the name of the student in the College of Law who places first in the Frederick Green Moot-Court Competition.

College of Liberal Arts and Sciences

Alpha Chi Sigma Plaque.—Zeta Chapter of Alpha Chi Sigma, chemical professional fraternity, has hung a plaque in the Chemistry Library as an award to high scholarship in the freshman class. Each year the name of the man who attains the highest scholastic average for his first semester of work in the curriculum of chemistry or chemical engineering is engraved on the plaque.

Iota Sigma Pi Prize.—A cash prize of \$20 is awarded each year by the honorary chemical sorority, Iota Sigma Pi, to the woman in the senior class who has the highest scholastic average in her University work with chemistry as her major subject.

Omega Beta Pi Scholarship Award and Trophy.—A cash prize of \$25 is awarded each year by the honorary pre-medical fraternity, Omega Beta Pi, to the student who has shown the highest excellence in the physical sciences during his first three semesters in the pre-medical curriculum. Omega Beta Pi also awards a trophy at the end of the first semester each year to the freshman pre-medical student making the highest scholastic average.

Phi Beta Kappa Scholarship.—The University of Illinois Chapter of Phi Beta Kappa awards a scholarship of \$80 annually to a member of the junior class of the College of Liberal Arts and Sciences, selected on the basis of general merit. The scholarship is available to the winner during his senior year at the University of Illinois.

Phi Lambda Upsilon Cup.—Alpha Chapter of Phi Lambda Upsilon, honorary chemical society, awards a cup annually to the sophomore man who has the highest scholastic average among the students in the curricula of chemistry and chemical engineering. The cup is on display in the main hall of the Chemistry Annex.

Phi Sigma Medal.—The national organization of Phi Sigma, honorary biological society, awards annually a silver medal to the undergraduate student presenting the best report of evidence of the most original research on a biological subject.

Department of Military Science and Tactics

American Legion Medals.—The American Legion, Department of Illinois, awards annually a bronze medal to the outstanding cadet in each semester of the elementary course.

American Legion Auxiliary Awards.—The Illinois Department of the American Legion Auxiliary awards checks for \$50 to the first-year advanced course R.O.T.C. cadet selected as the new Cadet Colonel of the Corps of Cadets for the ensuing year, to the retiring Cadet Colonel, and to the outstanding first-year advanced-course cadet in small-bore rifle competition.

Unit 71 of Urbana presents an award of \$5 to the winner of second place in the Gold Medal competition.

Unit 24 of Champaign presents an award of \$5 to the winner of second place in the Hazelton Medal competition.

Daughters of the American Revolution Prize.—A saber is awarded by the Illinois Department of the Daughters of the American Revolution to the cadet officer selected as Cadet Colonel of the Corps of Cadets for the ensuing year.

Daughters of Union Veterans of the Civil War Medal.—A medal is awarded by the Daughters of Union Veterans of the Civil War, Department of Illinois, to the outstanding advanced-course member of the Rifle Team who has contributed most toward the promotion of rifle marksmanship at the University of Illinois.

Grand Army Memorial Saber.—The Illinois Department of the Auxiliary to Sons of Union Veterans of the Civil War awards a saber to the retiring Cadet Colonel of the Corps of Cadets.

Phalanx Award.—The outstanding freshman cadet in the elementary course of the R.O.T.C. receives the Phalanx Award.

Spanish War Veterans Auxiliary Awards.—The Illinois Department of the National Auxiliary of United Spanish War Veterans presents annually a medal and a \$25 scholarship award to the winner of first place in marksmanship, and a \$25 scholarship award to the winner of second place in marksmanship.

Veterans of Foreign Wars Awards.—The Veterans of Foreign Wars of the United States, Department of Illinois, awards a watch to the cadet officer selected as the Cadet Colonel of the Corps of Cadets for the ensuing year and to the retiring Cadet Colonel.

Veterans of Foreign Wars Auxiliary Awards.—The Illinois Department of the Auxiliary of the Veterans of Foreign Wars awards a \$25 government bond and medal to the most outstanding junior in Pershing Rifles, and \$25 government bonds to the most outstanding sophomore and the most outstanding freshman in Pershing Rifles.

Woman's Relief Corps Tablet.—The names of seniors who have excelled in military scholarship appear on a bronze tablet presented each year to the Military Department by the Woman's Relief Corps, Department of Illinois.

School of Physical Education

Delta Theta Epsilon Award.—A trophy is awarded annually by Delta Theta Epsilon, honorary physical education fraternity, to a senior in the curriculum in physical education for men. Character, scholarship, personality, and ability as a teacher are considered by the faculty committee in making the award.

PRIZES NOT LIMITED TO THE UNIVERSITY OF ILLINOIS

General Competitions

Intercollegiate Conference Medal.—The Intercollegiate Conference, through its faculty representative at each conference institution, awards annually a medal to the student of the graduating class who has attained the greatest proficiency in athletics and in scholastic work.

Phi Kappa Phi (Sparks Memorial) Fellowship.—Six fellowships of \$500 each, for graduate study in any American institution of recognized standing, are awarded annually by Phi Kappa Phi, national honor society, in competitions open to members of the society in any American college or university where a chapter of the society exists. The recipients are selected by a national board from candidates recommended by the local chapters. Prospective candidates should file their applications with the local secretary of the society early in the second semester.

College of Engineering

American Institute of Mining and Metallurgical Engineers' Student Technical Paper Writing Contest.—Competition is open to all student associates of the Institute, both undergraduate and graduate. The Chicago Section offers cash prizes of \$100 and \$50, and books for best papers among colleges in this section. Best papers from local sections throughout the country are judged for national prizes.

American Society of Mechanical Engineers Prize.—This society offers annually five prizes of \$5 to \$50 for the best papers prepared by senior student members of the society as judged in sectional competitions. This society also offers an annual prize of \$25 to the student preparing the best paper on a selected topic in a nationally conducted competition.

Highway Prize.—The Illinois Association of County Superintendents of Highways gives an annual prize of \$25 for the best paper written by a senior in civil engineering on a subject in the highway field, such as design, construction, or maintenance. This is given with the understanding that the winning paper will be presented at the Annual Highway Conference.

John Smeaton Award.—The Illinois Concrete Pipe Association gives an annual prize of \$25 for the best paper written by a senior in the College of Engineering on the manufacture of concrete pipe.

Tau Beta Pi Fellowship.—Six fellowships of approximately \$650 each, for graduate study in any engineering college of recognized standing, are awarded annually by Tau Beta Pi, national engineering honor society, in competitions open to members of the organization in any American college or university where a chapter of Tau Beta Pi exists. The recipients are selected by a national board from candidates recommended by the local chapters. Prospective candidates should file their applications with the chairman of the board prior to March 1.

College of Fine and Applied Arts

American Academy in Rome Fellowships in Architecture and Landscape Architecture.—In annual competitions open to qualified undergraduates and graduates of certain American schools, the American Academy in Rome usually awards two fellowships: (1) the Fellowship in Architecture, which provides two years of residence and travel

abroad for the study of classic and renaissance architecture; and (2) the Fellowship in Landscape Architecture, which provides a three-year term of study in landscape architecture at Rome. Since 1942, because of wartime conditions, the Academy offers cash prizes in lieu of these foreign fellowships.

American Society of Landscape Architects Certificate.—A certificate of merit is awarded each year to a graduating senior in each of the ten schools on the accredited list of the American Society of Landscape Architects. In nominating candidates for this award, the faculty considers scholarships, character, ability, and attainment.

Beaux Arts Institute of Design.—Several prizes and scholarships offered annually through the Beaux Arts Institute of Design are open for competition among qualified students of certain American schools, including the University of Illinois.

Fontainebleau Scholarships.—The Beaux Arts Institute of Design has offered annually two Whitney Warren Fontainebleau Scholarships of \$500 each, for the purpose of attending the Fontainebleau School of Fine Arts. The students placing first and second in the Class "A" IV Project of the Beaux Arts Institute of Design for the current school year have received these awards. (Not awarded in 1946-1947.)

Paris Prize.—The Society of Beaux Arts Architects offers an annual award known as the Paris Prize, competition for which is open to qualified students of certain American schools, including the University of Illinois. This prize provides one year of study abroad.

Edward L. Ryerson Traveling Fellowships.—Seniors of certain middlewestern universities are eligible to compete for the Edward L. Ryerson Traveling Fellowships offered each year, one in architecture and one in landscape architecture. Each fellowship grants a stipend of \$1,000 to be used for a year of travel and study. (Not awarded in 1946-1947.)

PRIZES IN THE PROFESSIONAL COLLEGES IN CHICAGO

College of Dentistry

Noyes Seminar Prize.—Dr. Frederick B. Noyes, during the fourteen years he was Dean of the College of Dentistry, offered annual prizes for the three best papers written by students in the fourth-year seminar, a course in the writing of professional and scientific papers. The first prize was \$25, the second \$15, and the third \$10. At the time of Dean Noyes's retirement in 1940, members of the faculty, alumni, and friends established a fund to continue the annual awards for twelve years under the name of the Frederick B. Noyes Seminar Prize. Whenever the committee on awards is unable to determine which of two papers is the better, the prize is divided.

Omicron Kappa Upsilon Membership Awards.—Students whose scholastic records place them in the highest twelve per cent of each year's graduating class in dentistry are awarded membership in Omicron Kappa Upsilon, national honorary fraternity.

Sigma Xi Prize.—Students in the College of Dentistry are eligible to compete for the annual prize offered by the Society of the Sigma Xi as stated under the College of Medicine.

College of Medicine

Alpha Omega Alpha Membership Awards.—Third-year and fourth-year medical students whose grades rank them in the highest one-sixth of their class are awarded membership in Alpha Omega Alpha, international honorary medical fraternity.

Beaumont Memorial Prize.—The late Dr. Frank Smithies, of Chicago, endowed an annual prize in memory of William Beaumont, the famous surgeon of the nineteenth century. The prize is awarded to the student or faculty member of the College of Medicine who submits the best original work on diseases of the alimentary tract.

Deuss Memorial Prize.—A prize of \$100, established by Dr. and Mrs. H. O. Deuss as a memorial to their son, James Burkett Deuss, is given in alternate years for the best contribution in the field of allergy by any registered student or member of the faculty of the College of Medicine.

Sigma Xi Prize.—A prize of \$25 is awarded annually by the Society of the Sigma Xi for the best piece of scientific investigation on the part of any student in the College of Dentistry, the College of Medicine, or the Chicago departments of the Graduate School, who is without a salaried appointment by the University.

College of Pharmacy

Elich Prize.—Mr. Herman Elich, an alumnus of the College of Pharmacy, offers annually a prize of \$25 to the senior student who attains the highest average in pharmacognosy.

Rho Chi Prize.—Phi Chapter of Rho Chi, honorary pharmaceutical society, awards annually an embossed copy of the United States Dispensatory to the student attaining the highest average grade in the sophomore year of the College of Pharmacy.

Van Schaack Prize.—By the will of Cornelius P. Van Schaack, the College of Pharmacy received the sum of one thousand dollars, the income from which may be used for the purchase of a gold medal, known as the C. P. Van Schaack Award. The award is made to the senior student making the highest four-year average in chemistry.

COLLEGES AND SCHOOLS AT URBANA

The College of Agriculture

TO PREPARE MEN AND WOMEN FOR SUCCESSFUL CAREERS IN agriculture and home economics, the College of Agriculture offers many courses in these two fields, which have in common an interest in the production, processing, sale, and use of food and clothing materials. Illinois, being in one of the greatest agricultural regions of the world, is in an advantageous position for teaching and research in agriculture and the related industries. While many courses in this college are open to all qualified students in the University, most of the courses are designed primarily for students who desire to follow a four-year curriculum in agriculture or home economics.

In agriculture there are several four-year curricula leading to the degree of Bachelor of Science, and two two-year curricula, one preparing for entry into a school or college of forestry and the other for entry into a school or college of veterinary medicine. The general agriculture curriculum is broad and flexible with sufficient electives to meet specific needs. Graduates from this curriculum engage in various types of farming, in educational and extension work, in civil or public service, in the processing and marketing of agricultural products, in the sale and service of agricultural equipment and supplies, in agricultural credit work, and in numerous other activities related to agriculture. Graduates from the curriculum in vocational agriculture are prepared to teach in the high schools of Illinois and most other states.¹ The curriculum in dairy technology leads to employment in the dairy manufacturing industry or to research or teaching in this field. The floriculture curriculum prepares for employment in the production and sale of flowers and other ornamental plants.

In home economics the College of Agriculture provides a four-year general curriculum leading to the degree of Bachelor of Science. Graduates of this curriculum are engaged in homemaking; in teaching in secondary schools, colleges, and universities; as dietitians in hospitals and other institutions; in management of cafeterias, dormitories, and the food service units in hotels, clubs, airlines, and bus lines; in retailing in the textiles, clothing, and home furnishings fields; in research in colleges and universities, government agencies, and industry; in extension services; as nutritionists and consultants with public health and social agencies. Students preparing to teach home economics in high schools having departments of vocational home economics should enroll in the curriculum in vocational home economics education, although it is possible to qualify for teaching by enrolling in the general home economics curriculum and electing the necessary courses in the Colleges of Education and Liberal Arts and Sciences.

The curriculum in agricultural engineering, which is administered by the College of Engineering, includes general and specialized courses offered in the College of Agriculture. A five-year program is available for any student who desires baccalaureate degrees from both colleges.

The first two years in each curriculum include the necessary scientific and cultural basis for later specialization. Each student is assisted in arranging his program by a member of the faculty under the organized advisory system of this

¹ The minimum requirements for teaching vocational agriculture can be met also by graduation from the general curriculum in agriculture if the required courses in psychology and education are included as electives. The College of Education also offers a curriculum in agricultural education (see page 170).

college. Every student is required to take certain courses offered in other colleges on the campus and is encouraged to elect additional courses to balance his program and extend his range of interests.

For *admission*, see page 99; for regulations concerning *unclassified students*, see page 106; for *buildings* used by this college, see page 91; for *clubs and societies* auxiliary to the curricula, see page 128; for *prizes and awards*, see page 136; for *fees*, see page 118; for general University requirements for *graduation*, see page 114; for *special conferences and short courses*, see page 474.

The instructional program of the College of Agriculture is constantly enriched by close association with the work of the Agricultural Experiment Station (see page 477) and the Extension Service in Agriculture and Home Economics (see page 468). Staff members and students thus have direct contact with current problems in research and practice.

Departments and Curricula

The College of Agriculture comprises eight departments which offer courses open to all qualified students in the University. These departments, their work and equipment, are described in the following paragraphs with reference to the curricula as outlined on subsequent pages.

Agricultural Economics.—Courses in agricultural economics pertain to economic principles as applied to agriculture, farm management, land economics, agricultural marketing, agricultural credit, agricultural prices and statistics, and rural organizations. A basic course in agricultural economics is designed to give an introduction to these fields. A more advanced course deals with the external economic relationships of agriculture, while work in farm management deals with the internal economic relationships of farming based on financial and detailed cost records secured from farmers throughout Illinois. Work in land economics includes utilization, tenure, and conservation of land, while a course in farm appraisals is conducted in cooperation with other departments. Courses are available dealing with the principles and problems of agricultural marketing and cooperation, as well as with the particular problems connected with the marketing of grain, livestock, dairy products, and horticultural products. Work is offered in the field of agricultural credit, dealing with the credit needs of farmers and the means of supplying these needs. Courses in agricultural prices and statistics include work in price analysis and the application of statistical methods to agricultural data. Work in rural organization deals with the structure and functions of and participation in farmers' organizations and trends in their development. Provision is made for advanced study in all of these fields by qualified undergraduate and graduate students.

Agricultural Engineering.—Courses in agricultural engineering cover the principles of engineering as applied to agriculture, including elementary farm mechanics, farm shop, drainage, soil and water conservation, farm buildings, concrete construction, farm machinery, tractors, harvesting machinery, horticultural machinery, dairy machinery, rural electrification, and farm home equipment. The University has an assortment of tractors, gas engines, and farm machinery in this department for student use. Lighting units and water systems are provided in the home equipment laboratory. There is a drafting room for work in farm buildings, and facilities are provided for concrete construction. A curriculum in agricultural engineering is provided in the College of Engineering (page 182) for those students who plan to enter teaching, research, commercial, or design work in this field. The first-year requirements in this curriculum are the same as in other engineering courses. Specialization begins in the second year. Early in the course students have an opportunity to take work in the Department of Agricultural Engineering and also certain basic courses in the College of Agriculture. Those who are particularly interested in power and machinery have an option of special training in machine design. Another option is provided in farm drainage and structures. Students in the curriculum in agricultural engineering may secure two degrees in five years, one in agriculture and one in agricultural engineering, if they will carefully schedule the required courses of study. It is essential that such students complete the courses in drawing, mathematics, physics, and mechanics required in agricultural engineering during their first three years at the University to be able to complete the requirements for both degrees by the end of the fifth year. Freshmen who are interested should consult the Head of the Department of Agricultural Engineering.

Agronomy.—Instruction in both crops and soils is given in the Department of Agronomy. Under crops are included such subjects as characteristics, production, and improvement of farm crops as well as the nature and control of the crop enemies such as weeds, plant diseases, and insect pests. Courses in soils deal with the origin, formation, and classification of soils and also with variation, modification, and maintenance of productivity. Facilities for instruction include laboratories, field house, greenhouse, and field plots. Advanced students have opportunity to use these facilities both in their courses and in individual investigations.

Animal Husbandry.—Courses in animal husbandry cover the study of sheep, swine, poultry, and beef cattle, and their products; heavy and light horses, with their care and training; the management of herds, flocks, and studs; feeding, breeding, general sanitation, and disease control in livestock; and the chemical and physiological phases of animal nutrition. The University herds, flocks, and studs contain about six hundred pure-bred cattle, swine, sheep, and horses, and several hundred fowl, which are available for class purposes and for feeding and breeding investigations. The Stock Judging Pavilion offers opportunity for show and judging work. The department equipment includes buildings for the housing of beef cattle, swine, sheep, horses, and poultry, and a feed storage barn with grinding mills and other feed preparation machinery. Laboratories afford facilities for undergraduate and advanced study in animal nutrition and animal genetics.

Dairy Husbandry.—The courses in dairy husbandry are concerned with the judging, breeding, feeding, and management of dairy cattle; the manufacture and marketing of dairy products; and dairy bacteriology and chemistry. The equipment of this department includes a complete commercial creamery, well-equipped laboratories for both dairy bacteriology and dairy chemistry, and a farm stocked with a herd of more than 200 head of dairy cattle which are typical representatives of the Holstein-Friesian, Jersey, Guernsey, Brown Swiss, and Ayrshire breeds.

Forestry.—The pre-forestry curriculum provides two years of study in subjects prerequisite to technical training in forestry. It prepares the student to enter a school of professional forestry with two years of advanced standing. Although registration is in the College of Agriculture, many of the courses of instruction are in the Colleges of Liberal Arts and Sciences and Engineering. The pre-forestry curriculum utilizes the laboratory, drafting, demonstration, and classroom facilities of several departments in each of these colleges as well as those of the College of Agriculture. The equipment of the Department of Forestry includes maps, charts, lantern slides, and a working library of some 3,500 books and pamphlets on forestry. Students who are interested in forestry as a profession should consult the Head of the Department of Forestry concerning registration.

Home Economics.—The courses given in this department are planned primarily to meet the needs of students who desire a knowledge of the general principles and facts of home economics. In addition to the courses in general home economics, opportunity is given for concentration in the following fields: foods and nutrition, hospital dietetics, institution management, household management, the child and the family, textiles and clothing, teacher training. The department is housed in Bevier Hall, where there are specially equipped laboratories and lecture rooms and a cafeteria which is used as a teaching laboratory. Facilities for demonstration and practice in household management are provided in the Home Management House.

Bevier Lecture Fund.—In 1942 the late Isabel Bevier, Professor of Home Economics, Emerita, bequeathed \$5,000 to the University of Illinois for the establishment of a lecture fund in the Department of Home Economics; the income from this fund is to be used for a series of lectures on the scientific, economic, aesthetic, and social aspects of home and family life.

Horticulture.—Courses in horticulture provide instruction in five divisions (pomology, vegetable crops, floriculture, plant breeding, and plant pathology) and in subjects dealing with all these divisions, such as plant propagation, spraying, the evolution of horticultural plants, and experimental horticulture. For instruction in pomology and plant pathology, use is made of the varietal and experimental plantations maintained by the department, and of the Horticulture Field Laboratory. This building is equipped with cold storage rooms, constant-temperature chambers, and a greenhouse, and with chemical, physiological, histological, and pathological laboratories. Facilities for instruction in vegetable crops include a physiological laboratory, greenhouses, and several acres of land on which garden operations are illustrated and the principal vegetable crops are grown. A

laboratory furnishes opportunity for the study of methods of canning and packing. The equipment for floriculture includes ten glasshouses and a service building. The houses contain a selection of roses, carnations, and chrysanthemums, and of plants representing the forms used in commercial and decorative or conservatory work. The ornamental gardens furnish illustrative materials for students in floriculture and landscape architecture. Instruction in plant materials is facilitated by a collection of native woods and a forest tree plantation of about twenty acres.

Requirements for Graduation

Students who have satisfied the general University requirements for graduation (page 114), have maintained throughout their course a satisfactory record of scholarship and moral character, and have completed a curriculum in the College of Agriculture, including the studies of the prescribed lists and sufficient electives to make a total of 130 to 134 semester hours in all curricula except in home economics, where the requirement is 120 to 124 hours exclusive of required work in physical education, are graduated with the degree of Bachelor of Science. (For the special requirements of each curriculum, see the outlines on the following pages.)

A candidate for graduation must have completed by the beginning of his final semester all studies required for the degree except those to be taken in class during the semester, except, however, special examinations to remove failures, proficiency examinations, and course substitutions which must be completed by the beginning of the tenth week of the student's final semester.

Students who have transferred from other educational institutions to the University of Illinois and are candidates for the degree of Bachelor of Science in Agriculture are required to complete in residence at least half the technical agriculture credit required for the degree; such credit must be in those courses for which seniors receive full credit. Graduates of approved colleges may secure a degree in agriculture from the University on completion of the technical and scientific requirements. This usually requires two years of residence work; a minimum of one year is required.

Honors at Graduation

Honors awarded at graduation to superior students are designated, after the degree on the diploma, as Honors, High Honors, and Highest Honors, according to the following rules: (a) For the degree with Honors, the student must have an average of 4.0 in all courses used for graduation. (b) For the degree with High Honors, a student must have an average of 4.25 in all courses counted toward graduation and pass a comprehensive examination in his field of major interest. (c) For the degree with Highest Honors, the student must have an average of 4.5 in all courses used for graduation and give evidence of exceptional ability in passing a comprehensive examination in his field of major interest.

Curriculum in Agricultural Engineering

For the Degree of Bachelor of Science in Agricultural Engineering

This curriculum, outlined on page 182, is administered by the College of Engineering with the cooperation of the Department of Agricultural Engineering.

General Curriculum in Agriculture

For the Degree of Bachelor of Science in Agriculture

All students in this curriculum are required to take certain prescribed courses during the freshman year and part of the sophomore and junior years. This work gives the student some training in the basic sciences and an insight into the technical branches of agriculture and leaves a large part of the junior and senior years open for elective studies. The 130 hours required for graduation are grouped as follows:

Summary	HOURS
Agricultural courses prescribed (listed below).....	29
Non-agricultural courses prescribed (listed below).....	49-53
Agricultural courses to be elected from Group 1 (listed below).....	21
Non-agricultural courses to be elected from Group 2 (listed below).....	8
Free electives.....	<u>19-23</u>
<i>Total Required for Graduation</i>	<u>130</u>

Prescribed Courses

HOURS		HOURS	
Accountancy 1a	3	Economics 1 or 2	5 or 3
Agricultural Economics 1	3	Entomology 1a	3
Agricultural Engineering 1	3	Geology 44	3
Agronomy 1, 2	9	Horticulture 1a, 1b	5
Animal Husbandry 1, 21	6	Hygiene	2
Bacteriology 5a	3	Military Science	4
Botany 5	3	Physical Education	4
Chemistry 1 (or 2), 5, 32	13 or 11	Rhetoric 1, 2	6
Dairy Husbandry 24a or 24b	3	Zoology 15	4
		<i>Total, Prescribed Courses</i>	<u>78-82</u>

After the second semester of the sophomore year, the minimum schedule is 15 hours each semester, exclusive of military science and physical education. Sophomore standing requires 30 hours; junior standing, 60 hours; senior standing, 94 hours.

Electives

GROUP 1.—A minimum of 21 hours in courses offered by the College of Agriculture in addition to those prescribed.

GROUP 2.—A minimum of 8 hours in addition to prescribed courses, to be selected from courses offered in English, foreign language, geography, history, landscape architecture, law, philosophy, political science, psychology, rhetoric, sociology, and speech.

Desirable courses:

HOURS		HOURS	
English 12, 13, 20a, or 20b	2 or 4	Political Science 1a, 1b, or 16	2 or 3
French 1a and 1b	8	Portuguese 1a and 1b	8
Geography 1, 2, 14	3 or 5	Psychology 1	4
German 1a and 1b	8	Rhetoric 10	2
History 1a, 1b, 3a, or 3b	3 or 4	Sociology 1, 7	3 or 6
Landscape Architecture 62	2	Spanish 1a and 1b	8
Philosophy 1 or 2	3	Speech 1	3

NOTE: Students expecting to take graduate work in agriculture should make their selection of electives primarily with this purpose in view, as the prescribed courses in the general curriculum in agriculture will not afford an adequate training for major work in any agricultural department in the Graduate School. For adequate undergraduate preparation in his chosen field of major study, the student should elect advanced courses in this and in related fields under the guidance of the department within which his major is to be taken, and he should also make a judicious selection of non-agricultural courses in order to afford a broad scientific and cultural foundation for his specialized training.

A thorough training in the general principles of biology is highly desirable in all fields of agriculture and essential in most, the nature of the proposed major field determining whether this training will be pursued mainly along botanical or zoological lines. For specialization in farm organization and management and in other phases of agricultural economics, economics rather than biology is the basic science.

An introductory course in physics is necessary to a well-balanced knowledge of the natural sciences, and will prove of value for advanced study in all lines of technical agriculture, while in some lines it is essential.

Mathematics, including college algebra, trigonometry, analytical geometry, and the calculus, should be included in the program of the prospective research student, because a thorough understanding of statistical methods is essential to the interpretation of experimental data.

A reading knowledge of some of the foreign languages, particularly German and French, is essential to a study of the original contributions to any major field of graduate study. The prospective graduate student is advised to elect a year of work in either German or French.

The advisability of choosing other non-agricultural courses, such as those in advanced economics, accountancy, quantitative chemical analysis, physical chemistry, physiological chemistry, education, bacteriology, physiology, and entomology, will depend upon the nature of the proposed major and minors in the Graduate School.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition	3	Chem. 1 or 2—Inorganic Chemistry	5 or 3
Hygiene 2 or 5	2	Rhet. 2—Rhetoric and Composition	3
Military Science (for Men)	1	Military Science (for Men)	1
Physical Education	1	Physical Education	1
<i>Select from the following prescribed courses to make a total of 14½-18½ hours for each semester. Each of these courses (except Hort. 1a-1b) is offered both semesters:</i>			
Agr. Econ. 1—Intro. Agr. Economics	3	Entom. 1a—Insects	3
Agr. Eng. 1—Intro. Agr. Engineering	3	Hort. 1a—Intro. Pomology and Ornamental Gardening	3
Agron. 1—Farm Crops	4	Hort. 1b—Intro. Vegetable Crops	2
An. Husb. 1—Livestock Judging	3		
Bot. 5—General Botany	3		
D.H. 24a—Dairy Production; or			
D.H. 24b—Dairy Manufacturing	3		

Second Year

Chem. 5—Qualitative Analysis	5	Chem. 32—Organic Chemistry	3
Military Science (for Men)	1	Military Science (for Men)	1
Physical Education	1	Physical Education	1
<i>Select from the following prescribed courses to make a total of 14½-18½ hours for each semester. Each of these courses (except Hort. 1a-1b) is offered both semesters:</i>			
Accy. 1a—Principles of Accounting	3	Econ. 1 or 2—Princ. of Economics	5 or 3
Agr. Eng. 1—Intro. Agr. Engineering	3	Entom. 1a—Insects	3
Agron. 1—Farm Crops	4	Geol. 44—Agricultural Geology	3
Agron. 2—Soils	5	Hort. 1a—Intro. Pomology and Ornamental Gardening	3
An. Husb. 1—Livestock Judging	3	Hort. 1b—Intro. Vegetable Crops	2
An. Husb. 21—Principles of Feeding	3	Zool. 15—Zoology	4
Bact. 5a—Intro. Bacteriology	3		
Bot. 5—Bot. for Students in Agr.	3		
D.H. 24a—Dairy Production; or			
D.H. 24b—Dairy Manufactures	3		

Third Year

Agronomy 2, Soils, if not taken previously, should be scheduled either the first or second semester. Any remaining prescribed courses should be taken as early as possible. Select enough electives for each semester to make a total of 15-18 hours. Attention should be given to satisfying the requirements of Group 2 under electives, and it should be kept in mind that Group 1 requires the selection of a total of 21 hours of agricultural electives in addition to the prescribed agricultural courses listed above. This leaves 19-23 hours of open electives which may be taken in any college or school of the University. It is recommended that at the beginning of the third year the student, in consultation with his faculty adviser, lay out a detailed program of courses for the third and fourth years. Care should be taken to avoid too narrow specialization but at the same time to take related groups of courses designed to prepare the individual for the life and work which he expects to pursue.

Fourth Year

Schedule 15-18 hours of work each semester, following the lines indicated for the third year. It is important that each student consult his faculty adviser and plan his work for the year.

Curriculum in Dairy Technology

For the Degree of Bachelor of Science in Dairy Technology

The curriculum in dairy technology is planned for students interested in the business and technical aspects of dairy manufacturing. This curriculum allows ample opportunity for the student to elect courses in various phases of dairy manufactures and in the fields related to it. Thus a student may specialize in the manufacturing and marketing of dairy products or the bacteriological, chemical, or engineering aspects of the field.

Requirements

- 83-85 hours as indicated in the following sequence of courses.
 15 hours in Group 1 (listed below).
 8 hours in Group 2 (listed below).
 10 hours in Group 3 (listed below).
 12-14 hours open electives.
 130 hours required for graduation.

Electives

GROUP 1.—A minimum of 15 hours in courses offered by the College of Agriculture in addition to those prescribed. (Electives in this group are to be chosen from advanced courses under the guidance of an adviser.)

GROUP 2.—A minimum of 8 hours selected from English, foreign language, geography, history, landscape architecture, philosophy, political science, psychology, rhetoric, sociology, speech.

GROUP 3.—A minimum of 10 hours in addition to prescribed courses, to be selected from courses offered in accountancy, bacteriology, business organization and operation, chemistry, economics, mathematics, and physics. *Desirable courses:* Accountancy 1b, 2a, 2b; Bacteriology 5a, 5b, 8, 10; Business Law 2; B.O.O. 2, 7, 8; Chemistry 22, 50; Economics 3, 10, 43, 51, 61; Mathematics 6a, 8a, 8b; Physics 16, 44.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Chem. 1 or 2—Inorganic Chemistry	5 or 3	D.H. 11—General Dairy Bacteriology	2
D.H. 24a—Dairy Production	3	D.H. 12—General Dairy Bacteriology	3
D.H. 24b—Dairy Manufacturing	3	Chem. 5—Qualitative Analysis	5
Physical Education	1	Hygiene 2 or 5	2
Military Science (for Men)	1	Physical Education	1
Electives	0 or 3	Military Science (for Men)	1
<i>Total</i>	16-17	<i>Total</i>	17

Second Year

Chem. 33—Elem. Organic Chem.	5	Math. 4—Trigonometry	2
D.H. 1—Chemical Control Methods for Dairy Plants	3	D.H. 7—Creamery Buttermaking and Factory Management	3
D.H. 22—Cheese Manufacture	3	D.H. 8—Fluid Milk Plant Operations	3
Math. 3—Algebra	5	D.H. 14—Milk Condensing	3
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
		Electives	5
<i>Total</i>	18	<i>Total</i>	18

Third Year

Accy. 1a—Principles of Accounting	3	Econ. 1—Principles of Economics	5
D.H. 4—Ice Cream Manufacture	3	Phys. 7b—General Physics	4
D.H. 9—Dairy Products Judging	2	Phys. 8b—Physics Laboratory	1
Phys. 7a—General Physics	4	Electives	6
Phys. 8a—Physics Laboratory	1		
Electives	3		
<i>Total</i>	16	<i>Total</i>	16

Fourth Year

Electives	16	Electives	16
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Curriculum in Floriculture

For the Degree of Bachelor of Science in Floriculture

The purpose of this curriculum is to fit men and women for the profession of floriculture. The laboratory exercises in the technical subjects consist of practical work in the greenhouses and gardens and give the students a working knowledge of the best methods now

in use. Of the 130 semester hours required for graduation, 95-97 for women and 99-101 for men are prescribed as shown below. The remaining hours of credit necessary for graduation must include a minimum of 4 hours in addition to prescribed courses in English, foreign language, geography, history, landscape architecture, philosophy, political science, psychology, rhetoric, sociology, or speech. Students registered in floriculture are required to make at least one inspection trip before graduation. The trip costs about \$25.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 1 or 2—Inorganic Chemistry.....	5 or 3	Chem. 5—Qualitative Analysis.....	5
Hort. 5—Plant Propagation.....	3	Rhet. 2—Rhetoric and Composition...3	
Rhet. 1—Rhetoric and Composition.....	3	Entom. 1a-1b—Insects.....	5
Bot. 5—Bot. for Students in Agr.....	3	Physical Education.....	1
Hygiene 2 or 5.....	2	Military Science (for Men).....	1
Physical Education.....	1		
Military Science (for Men).....	1		
<i>Total</i>	<u>16-18</u>	<i>Total</i>	<u>15</u>

Second Year

Accy. 1a—Principles of Accounting.....	3	Accy. 1b—Accounting Procedure.....	3
Bot. 3—Plant Physiology.....	5	Agron. 2—Soils.....	5
Econ. 2—Principles of Economics.....	3	Bot. 6—Introd. Systematic Bot.....	3
Geol. 44—Agricultural Geology.....	3	Hort. 15a—Greenhouse Management...3	
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
Electives.....	0-3	Electives.....	0-3
<i>Total</i>	<u>16-19</u>	<i>Total</i>	<u>16-19</u>

Third Year

Bot. 7—Plant Pathology.....	3	Hort. 15c—Commercial Crops.....	3
Hort. 15b—Commercial Crops.....	3	Hort. 31—Garden Flowers.....	3
Hort. 43—Floricultural Physiology.....	3	Hort. 45—Plant Nutrition.....	3
L.A. 51—Trees and Shrubs.....	3	L.A. 52—Trees and Shrubs.....	3
Electives.....	3-6	Electives.....	3-6
<i>Total</i>	<u>15-18</u>	<i>Total</i>	<u>15-18</u>

Fourth Year

Hort. 32a—Floral Decoration.....	3	Hort. 30—Tender Bedding Plants.....	3
Electives.....	12-15	Hort. 32b—Floral Decoration.....	3
		L.A. 64—Appreciation of Landscape Architecture.....	3
		Electives.....	6-9
<i>Total</i>	<u>15-18</u>	<i>Total</i>	<u>15-18</u>

NOTE: The following courses are suggested as electives which may be taken during the third or fourth year: Agronomy 22; Botany 46; Business Law 2; B.O.O. 2, 7, 8; Chemistry 32; Entomology 20; Horticulture 7, 12, 55.

Pre-Forestry Curriculum

The purpose of the two-year pre-forestry curriculum is to prepare young men to enter a school of professional forestry with two years of advanced standing. The curriculum provides a course of study similar to that given during the first two years at a school of forestry. The course of study is of necessity modified somewhat to meet the different requirements of the various schools. Completion of the pre-forestry curriculum requires a minimum of 61 hours of work in addition to the University requirements in military science and physical education. Due to large increases in enrollment, many forestry schools have adopted rather high scholarship requirements. Students whose grades are below average in their pre-forestry work may be refused admittance to a forestry school.

The choice of electives will depend on the requirements of the particular school of forestry for which the student is preparing. Some forestry schools require a year of physics, and others do not; the same is true of zoology and other elective subjects. The branches of forestry in which a student is interested will also influence his choice of electives. A student expecting to stress the business and administrative aspects of the profession might well choose as electives other subjects than those indicated below. Any changes to meet the needs of individual students should be worked out in consultation with the Head of the Department of Forestry.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 1 or 2—Inorganic Chemistry ¹	5 or 3	Rhet. 2—Rhetoric and Composition.....	3
Rhet. 1—Rhetoric and Composition.....	3	Math. 4—Trigonometry.....	2
Math. 3 or 2—Algebra ¹	5 or 3	Geol. 44—Agricultural Geology.....	3
Bot. 5—Bot. for Students in Agr.....	3	Forestry 1—General Forestry.....	3
Hygiene 2 or 5.....	2	G.E.D. 1—Elements of Drawing.....	4
Military Science (for Men).....	1	Military Science (for Men).....	1
Physical Education.....	1	Physical Education.....	1
<i>Total</i>	<u>16-18</u>	<i>Total</i>	<u>17</u>

Second Year

C.E. 15—General Surveying.....	3	Agron. 2—Soils.....	5
Econ. 2—Elements of Economics.....	3	Military Science (for Men).....	1
Chem. 5—Qualitative Analysis.....	5	Physical Education.....	1
Military Science (for Men).....	1	Electives.....	11
Physical Education.....	1		
Electives.....	5		
<i>Total</i>	<u>18</u>	<i>Total</i>	<u>18</u>

Electives

Bot. 3—Plant Physiology.....	5
Phys. 7a and 8a—General Physics.....	5

Electives

Bot. 6—Systematic Botany.....	3
Phys. 7b and 8b—General Physics.....	5
Zool. 1 or 15—General Zoology.....	5 or 4
Pol. Sci. 1a—American Government.....	3
Chem. 32—Organic Chemistry.....	3
Geog. 14—Meteorology.....	3
Speech 1—Effective Speaking.....	3

Pre-Veterinary Curriculum

The purpose of this program is to prepare students for admission to the curriculum in veterinary medicine in the College of Veterinary Medicine of the University of Illinois. A minimum of 60 semester hours is required, including the subjects and semester hours indicated in the following table.

	HOURS
Chemistry (including organic and quantitative analysis).....	16
Biological Science (including botany and general zoology).....	8
Physics (including laboratory).....	8
Rhetoric.....	6
Dairy Husbandry.....	2
Group 1 electives: arts or fine arts, history, languages, literature, philosophy, psychology, religion, speech.....	8
Group 2 electives: agricultural economics, economics, geography, political science, sociology.....	8
Free electives.....	<u>4</u>
<i>Total</i>	<u>60</u>

¹ Students who have not had chemistry in high school register in Chem. 1 (five hours); those who have one unit of high school chemistry register in Chem. 2 (three hours). Students who have had 1½ units of high school algebra register in Math. 2 (three hours); those who have not had advanced algebra in high school register in Math. 3 (five hours). It is to the advantage of students planning to study forestry to take chemistry and advanced algebra in high school.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 1 or 2—Inorganic Chemistry.	5 or 3	Chem. 5—Qualitative Analysis.	5
Rhet. 1—Rhetoric and Composition.	3	Rhet. 2—Rhetoric and Composition.	3
Zool. 1—General Zoology.	5	Math. 4 or 4a—Trigonometry.	2 or 3
Military Science (for Men).	1	Hygiene 2 or 5.	2
Physical Education.	1	Military Science (for Men).	1
Elective from Group 1.	4	Physical Education.	1
		Elective from Group 1.	4
<i>Total</i>	17 or 19	<i>Total</i>	18 or 19

Second Year

Chem. 22—Quantitative Analysis.	5	Chem. 33—Organic Chemistry.	5
Phys. 7a and 8a—General Physics.	5	Phys. 7b and 8b—General Physics.	5
D.H. 24a—Dairy Production.	3	Bot. 5—Bot. for Students in Agr.	3
Military Science (for Men).	1	Military Science (for Men).	1
Physical Education.	1	Physical Education.	1
Elective from Group 2.	4	Elective from Group 2.	4
<i>Total</i>	19	<i>Total</i>	19

Curriculum in Vocational Agriculture

For the Degree of Bachelor of Science in Vocational Agriculture

The purpose of this curriculum is to train young men to teach agriculture in high schools having departments of vocational agriculture. In addition to the training outlined in this curriculum, the present Illinois State Plan for Vocational Education in Agriculture calls for a minimum of two years of practical experience on the farm after reaching the age of sixteen.

A minimum of 134 hours of credit, counting the first two years of work in military science and physical education, as outlined below, is required for graduation. While students are advised to take courses in the order indicated, they may, with the approval of their advisers, take courses at another time.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Agr. Econ. 1—Introd. Agr. Econ.	3	D.H. 24a—Dairy Production.	3
An. Husb. 1—Introd. to An. Husb.	3	Hort. 1b—Vegetable Crops.	2
Entom. 1a—Insects.	3	Chem. 1 or 2—Inorganic Chemistry.	5 or 3
Bot. 5—Bot. for Students in Agr.	3	Rhet. 2—Rhetoric and Composition.	3
Rhet. 1—Rhetoric and Composition.	3	Hygiene 2 or 5.	2
Military Science (for Men).	1	Military Science (for Men).	1
Physical Education.	1	Physical Education.	1
<i>Total</i>	17	<i>Total</i>	15-17

Second Year

Agron. 1—Farm Crops.	4	An. Husb. 21—Principles of Feeding.	3
Hort. 1a—Introductory Pomology, Ornamental Gardening.	3	Agr. Eng. 6—Tractors and Field Machinery.	3
Chem. 5—Qualitative Analysis.	5	Psych. 1—Introduction to Psychology.	4
Ed. 1—The American Public School.	2	Agr. Eng. 7—Farm Structures and Soil and Water Conservation.	3
Military Science (for Men).	1	Speech 1—Effective Speaking.	3
Physical Education.	1	Military Science (for Men).	1
		Physical Education.	1
<i>Total</i>	16	<i>Total</i>	18

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Agr. Econ. 20—Farm Management	3	Agr. Econ. 30—Marketing of Agricultural Products	3
D.H. 33—Dairy Production	2	An. Husb. 6—Livestock Management	3
Bact. 5a—Introductory Bacteriology	3	Agron. 2—Soils	5
Zool. 15—Zoology	4	Agr. Eng. 12—Farm Home Equipment and Rural Electrification	3
Geol. 44—Agricultural Geology	3	Ed. 6b—Princ. of Secondary Ed.	3
Ed. 25—Educational Psychology	3		
<i>Total</i>	18	<i>Total</i>	17

Fourth Year

An. Husb. 37—Poultry Management	3	Pol. Sci. 1a—American Government	3
Agronomy elective	3	Agr. Ed. 50—Practice Teaching in Agriculture	5
Humanities elective	2	Agr. Ed. 51—Programs and Procedures in Agricultural Education	5
Hist. 3b—History of the United States, 1828-1946	3	Electives ¹	3
Electives ¹	5	<i>Total</i>	16
<i>Total</i>	16		

Fifth Year

For the Degree of Master of Science in Vocational Agriculture

UNITS	UNITS
Agriculture courses with graduate credit	2
Ed. 125—Advanced Educational Psychology	1
Electives	1
<i>Total</i>	4
Agriculture courses with graduate credit	2
Ed. 101—Philosophy of Education; or Ed. 30—Hist. of American Ed.	1
Electives	1
<i>Total</i>	4

General Curriculum in Home Economics

For the Degree of Bachelor of Science in Home Economics

This four-year curriculum is provided for students in the College of Agriculture who desire training in home economics. The 120 semester hours required for graduation include prescribed subjects as listed below, of which at least 29 hours must be in home economics courses of the three groups specified for all students in this curriculum.

The first two years of this curriculum, which are shown in detail, allow some variations according to the purposes of individual students. The third and fourth years are largely determined by the choice of a field of concentration. Students who intend to enter the College of Education in their junior or senior year should refer to the requirements for the Bachelor of Science degree in home economics education (page 170). Those who wish to qualify for a baccalaureate degree in the College of Liberal Arts and Sciences should refer to the requirements of the general curriculum in that college (page 233). Students who hold scholarships in home economics must take each semester at least four hours in home economics or in courses prerequisite to those in home economics. At least five hours of advanced courses in one of the fields of concentration must be taken in residence at the University by any student transferring from another institution.

¹ Students who complete this curriculum will possess a teaching minor in the biological sciences. Other desirable teaching combinations with agriculture include industrial arts, physical education, physics, a double minor in the biological sciences and chemistry, a double minor in the biological sciences and general science, and a double minor in chemistry and general science.

Prescribed Courses

HOURS		HOURS	
Art 1a.....	2	Physical Education (4 semesters).....	0
Bacteriology 5a and/or 5b ¹	3 or 5	Physiology 1 or 1a ¹	3 or 5
Chemistry 1 (or 2), 5, 32, or 33.....	11-15	Psychology 1.....	4
Economics 2.....	3	Rhetoric 1 and 2.....	6
English Literature ²	6	Sociology 1.....	3
Home Economics:		Elective Social Studies ³	6
Group I—(see below).....	9	<i>Total, Prescribed Courses</i>	<u>80-82</u>
Group II—(see below).....	8	<i>Open Electives</i>	<u>38-40</u>
Group III—(see below).....	12	<i>Total Required for Graduation</i>	<u>120</u>
Hygiene 2.....	2		

GROUP I.—The following courses, totaling nine hours, are required of all students in the curriculum: Home Economics 1, 4, 7, 56.

GROUP II.—A minimum of eight hours chosen from the following courses is required: Home Economics 2, 3, 10, 19, 29a, 29b, 56b, 58, 59. Students concentrating in Household Management or the Child and the Family must select twelve hours from this group.

GROUP III.—A minimum of twelve hours from the following courses is required. Students specializing in one of the following fields of concentration should elect twelve hours from that field. Students meeting graduation requirements in general home economics may select courses totaling twelve hours from any of the following:

(1) *Foods and Nutrition*.—Twelve hours selected from Home Economics 5, 20, 33, 35, 39a, 39b, 41, 63, 90a, 90b. The following courses also are required: Chemistry 22, 33 or 34 (instead of 32), and 50; Bacteriology 5a and 5b; Physiology 1a.

(2) *Hospital Dietetics*.—Home Economics 5, 33, 41, 46, 47, 48 are required. The following courses also are required: Bacteriology 5a and 5b; Chemistry 22, 33 or 34, 50; Education 25; Physiology 1a.

(3) *Household Management*.—Six hours selected from Home Economics 14, 24, 28, 57a, 57b, 90a, 90b; and six hours selected from other advanced courses in home economics or from courses in economics.

(4) *Institution Management*.—Home Economics 5, 46, 47, 48, 63, Accountancy 1a and 1b or 12, Economics 43, and Education 25 are required. In order to meet the American Dietetic Association training course requirements the following courses must be included: Chemistry 22, 33 or 34, 50.

(5) *The Child and the Family*.—Six hours selected from Home Economics 40, 57a, 57b, 65, 66, 90a, 90b; and six hours selected from other advanced courses in home economics or from courses in sociology and psychology.

(6) *Textiles and Clothing*.—Twelve hours selected from Home Economics 30, 31, 42, 43a, 43b, 51, 55, 90a, 90b. Art 1b is also required.

(7) *Teacher Education*.—Students preparing to teach Home Economics in secondary schools should follow the curriculum in Home Economics Education (see page 157).

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Art 1a—Design.....	2	Chem. 5—Qualitative Analysis.....	5
Chem. 1 or 2—Inorganic Chemistry.....	5 or 3	Home Econ. 4—Introd. to Foods and Nutrition; or Hygiene 2.....	2
Home Econ. 1—Introd. to Home Econ. 1	1	Rhet. 2—Rhetoric and Composition... 3	3
Home Econ. 7—Textiles and Clothing. 3	3	Physical Education.....	1
Hygiene 2; or Home Econ. 4—Introd. to Foods and Nutrition.....	2	Electives ⁴	5
Rhet. 1—Rhetoric and Composition... 3	3		
Physical Education.....	1		
<i>Total</i>	<u>15-17</u>	<i>Total</i>	<u>16</u>

¹ Each student must take at least eight hours in physiology and bacteriology.

² Not required in curriculum in Vocational Home Economics Education.

³ Each student concentrating in household management, institution management, the child and the family, textiles and clothing, or in general home economics, must take at least six hours in economics, history, philosophy, political science, psychology, and sociology, in addition to the prescribed courses listed above.

⁴ Students who plan to take courses in home architecture, home furnishings, or costume design should include Art 1b.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 32, 33 or 34—Organic		Physiol. 1 or 1a—Mammalian	
Chemistry	3 or 5	Physiology	3 or 5
Psych. 1—Introduction to Psychology	4	Sociol. 1—Principles of Sociology	3
English Literature	3 or 4	English Literature	2 or 3
Econ. 2—Elements of Economics	3	Group II courses ¹	6 or 4
Physical Education	1	Physical Education	1
Electives	2 or 0		
<i>Total</i>	16-17	<i>Total</i>	16-17

Third and Fourth Years

In the third and fourth years each student will complete the prescribed courses in bacteriology, chemistry, and social studies, and will elect courses from Group II and Group III to complete the requirements in the chosen field of concentration.

Those who choose Foods and Nutrition or Hospital Dietetics should take Bacteriology 5a-5b, Chemistry 22, and Home Economics 59 in the first semester of their junior year.

Curriculum in Vocational Home Economics Education

For the Degree of Bachelor of Science in Home Economics Education

The courses outlined below total 128 to 135 hours. A minimum of 124 hours of credit, not counting the first two years of work in physical education, is required.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Home Econ. 1—Introd. to Home Econ. 1		Home Econ. 7—Textiles and Clothing	3
Home Econ. 4—Introd. to Foods and		Home Econ. 4—Introd. to Foods and	
Nutrition; or Hygiene 2	2	Nutrition; or Hygiene 2	2
Chem. 1 or 2—Inorganic Chemistry	5 or 3	Art 1b—Design	2
Art 1a—Design	2	D.G.S. 1b—Verbal Expression	4
D.G.S. 1a—Verbal Expression	4	or Rhet. 2—Rhet. and Composition	3
or Rhet. 1—Rhet. and Composition	3	Physical Education	1
Physical Education	1	Electives	5
Electives ²	2		
<i>Total</i>	15-17	<i>Total</i>	16-17

Second Year

Home Econ. 29a—Clothing	2	Home Econ. 3—Home Decoration	3
Home Econ. 29b—Clothing Lab.	2	Home Econ. 19—Costume Design	2
Home Econ. 2—Home Architecture	3	Physiol. 1 or 1a—Mammalian	
Chem. 32—Elem. Organic Chem.	3	Physiology ³	3 or 5
Ed. 1—The American Public School	2	Psych. 1—Introduction to Psychology	4
Speech 1 or 10 (if Rhet. 1-2 are taken) 3 or 2		Hist. 3b—History of the United States,	
or Elective	2	1828-1946; or Pol. Sci. 1a—American	
Physical Education	1	Government	3
Electives	2	Physical Education	1
<i>Total</i>	17-18	<i>Total</i>	16-18

¹ Students preparing for vocations in foods, hospital dietetics, household management, and teaching should include Home Econ. 58 in the second semester of the sophomore year.

² Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. Desirable teaching combinations with home economics include double minors in either art and English, biological science and general science, biological science and chemistry, chemistry and general science, English and physical education, or general science and physical education.

³ Each student must take a total of 8 hours in physiology and bacteriology.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Home Econ. 58—Foods.....	3	Home Econ. 59—Food Economics.....	3
Home Econ. 56—The Child and His Development.....	3	Home Econ. 5—Dietetics.....	3
Home Econ. 56b—Laboratory in Child Development.....	2	Home Econ. 10—Organization and Management of the Home.....	3
Econ. 2—Elements of Economics.....	3	Home Econ. 30—Clothing.....	3
Ed. 25—Educational Psychology.....	3	Home Econ. 40—Home Care of the Sick.....	1
Electives.....	2	Ed. 6b—Princ. of Secondary Ed.....	3
<i>Total</i>	16	<i>Total</i>	16

Fourth Year

Bact. 5a—Intro. Bacteriology ¹	3	Home Econ. 14—Home Management...3	
Bact. 5b—Intro. Bact. Lab. ¹	2	Home Econ. 11—Teaching of Home Economics.....	3
Hist. 3b—History of the United States, 1828-1946; or Pol. Sci. 1a—American Government.....	3	Ed. 10b—Technic of Teaching in Secondary Schools.....	3
Ed. 41—Princ. of Vocational Ed.....	3	Ed. Prac. 14—Practice Teaching of Home Economics.....	5
Electives.....	6	Electives.....	2
<i>Total</i>	17	<i>Total</i>	16

Fifth Year

For the Degree of Master of Science in Home Economics Education

I. Required Professional Courses:	
Ed. 125—Advanced Educational Psychology.....	1 unit
Ed. 30—Hist. of American Ed.; or Ed. 101—Philos. of Ed.....	1 unit
Ed. 116—Seminar in Home Economics Education.....	1 unit
Ed. 114—Current Problems and Trends in Home Economics Education...1 unit or Home Econ. 9—Home Economics Extension (Adult Education)... $\frac{1}{2}$ unit	
<i>Total</i>	3 $\frac{1}{2}$ or 4 units
II. A total of 2 or 2 $\frac{1}{2}$ units chosen from the following home economics courses:	
1. Home Management:	
Home Econ. 57a-57b—Problems in Home Management:	
Money Management.....	3 hours
Household Management.....	3 hours
Home Econ. 24—Farm Home Planning in Relation to Function.....	2 hours
Home Econ. 28—Organization and Management of the Home.....	2 hours
Home Econ. 106—Seminar in Household Management.....	1 unit
2. Foods and Nutrition:	
Home Econ. 20—Physical Growth and Nutrition.....	2 hours
Home Econ. 33—Diet in Disease.....	3 hours
Home Econ. 35—Problems in Foods.....	3 hours
Home Econ. 49—Problems in School Lunch and Industrial Feeding.....	1 unit
Home Econ. 63—Experimental Foods.....	3 hours
3. Textiles and Clothing:	
Home Econ. 31—Clothing.....	4 hours
Home Econ. 43a—Problems in Textiles and Clothing.....	3 hours
Home Econ. 43b—Problems in Textiles and Clothing.....	3 hours
4. Child Development and Family Relationships:	
Home Econ. 57a-57b—Problems in Home Management (Family Rela- tionships and Child Development).....	3 hours
Home Econ. 101—Problems in Family Living.....	1 unit
Home Econ. 106—Seminar in Household Management (Family Relationships).....	1 unit
III. Electives.....	2 units
<i>Total</i>	8 units

¹ Each student must take a total of 8 hours in physiology and bacteriology.

Undergraduate Minor in Home Economics

HOURS

Home Econ. 7—Selection and Care of Textiles and Clothing	3
Home Econ. 29a-29b—Clothing	4
Home Econ. 56—The Child and His Development	3
Home Econ. 61—Introduction to Foods	3
Home Econ. 80—Home Management	2
Home Econ. 3—Home Decoration	3
Home Econ. 38—Elementary Nutrition	2
<i>Total</i>	20

Special Programs of Study in Agriculture**Five-Year Program in Agriculture and Engineering**

A five-year plan by which a student may earn degrees in agriculture and agricultural engineering has been arranged. Interested students should call at Room 104 Mumford Hall for an outline of the program.

Six-Year Program in Agriculture and Law

A plan has been agreed upon between the College of Agriculture and the College of Law by which a student may earn the degree of Bachelor of Science in Agriculture and the degree of Bachelor of Laws in six years. In this case the student must plan carefully so as to include all prescribed courses in agriculture during the first three years, after which he transfers to the College of Law for the fourth year. He can thus receive the agricultural degree at the end of the fourth year and the law degree at the end of the sixth year. Interested students should call at Room 104 Mumford Hall for an outline of the plan.

Pre-Theological Program

For students interested in the rural ministry, there has been arranged a plan of pre-theological study in agriculture as recommended by representatives of several theological seminaries and several land-grant colleges of agriculture in the Middle West. Those who are interested should call at Room 104 Mumford Hall for an outline of this plan of study.

The College of Commerce and Business Administration

THROUGH KNOWLEDGE OF MODERN BUSINESS PRACTICES AND the fundamental principles on which economic systems operate, the College of Commerce and Business Administration seeks to develop in students the intellectual powers necessary for administrative careers. For this purpose it offers a unified program of basic studies for underclassmen and a variety of fields of concentration for upperclassmen. Though the factual contents of many of the courses are directly useful in specific vocations—accounting, banking, selling, teaching, etc.—students should expect to serve an apprenticeship in the fields they enter after graduation from this college, if they wish to prepare themselves for higher positions. While concentrating in a special field, they are encouraged to elect courses offered in other colleges and schools of the University and to secure as liberal an education as possible, to avoid the narrowing effects of early specialization.

The program of the first two years, the *Lower Division*, is organized about a nucleus of courses in accountancy and economics, mathematics and science, language and literature, rhetoric and speech. While it is designed primarily as preparation for the third and fourth years of the curriculum, it affords a well-balanced combination of studies to those who are in college for only two years of preparation for work in the business world. Students who have completed this two-year program with a satisfactory scholastic record are qualified for admission to the *Upper Division* of the College of Commerce and Business Administration or for admission to the College of Education, or the College of Law, or the School of Journalism. (Students transferring to other colleges after completing only the two-year program of the *Lower Division* receive their degrees not from the College of Commerce and Business Administration, but from the college to which they transfer, on completing the requirements of that college. For degrees from both the College of Commerce and Business Administration and the College of Law, see the field of Commerce and Law, page 163).

The program of the next two years, the *Upper Division*, provides nine fields of concentration, each student choosing the field he prefers: (1) accountancy, (2) banking and finance, (3) commerce and law, (4) commercial teaching, (5) economics, (6) industrial administration, (7) management, (8) marketing, (9) public affairs. These fields overlap to some extent in that they deal with the common problems of living and working in a business environment, and they are distinguished chiefly by their separate points of view and by the ultimate objectives of those who elect these fields. The program leads to the degree of Bachelor of Science in the field chosen.

A few deviations from some of these fields of concentration enable the student to prepare himself for other lines of endeavor. Typical of these are personnel management, foreign trade, insurance, real estate, commercial and trade secretaries, and the economic and business aspects of aviation. Special combinations of subjects best suited to preparation in these activities have been assembled. They are available on request at the office of the College.

To succeed in any field of this program, a student should be well prepared in the basic work of the Lower Division or have equivalent training elsewhere. To be admitted to the Upper Division, each student must have at least 60 hours of credit, including the courses prescribed in the Lower Division, with not more

than 15 hours of "D." Students transferring from other colleges and universities are given full opportunity to make up any Lower Division courses in which they may be deficient, without delay in their progress toward a degree.

Students in this college who intend to enter the Graduate School are advised to arrange their programs so as to include the courses that are prerequisite for graduate work and to acquire a reading knowledge of French and German. A course of study which is substantially equivalent to a fifth year of work in the departments of this college, and which leads to the degree of Master of Business Administration, is available in the Graduate School.

For *admission*, see page 99; for regulations concerning *unclassified students*, see page 107; for general University requirements for *graduation*, see page 114; for *prizes and awards*, see page 136; for *clubs and societies*, see page 128; for *fees*, see page 118; for *special conferences and short courses* sponsored by this college, see page 475.

Departments and Divisions

Instruction in this college is organized in two departments: (1) the Department of Business Organization and Operation, which is subdivided into the division of business organization and operation, the division of accountancy, and the division of business law; and (2) the Department of Economics.

The division of business organization and operation conducts courses in the organization and management of manufacturing industries, distributing agencies, and merchandising enterprises, the principles and methods of advertising, marketing, purchasing, and selling.

The division of accountancy conducts courses in general principles of accounting, auditing, cost accounting, income tax procedure, governmental accounting, budget control, and accounting systems.

The division of business law conducts courses dealing with phases of law closely allied to business, such as contracts, agency, and other subjects.

The Department of Economics offers courses in economic history and theory, domestic and foreign commerce, banking and finance, public utilities and transportation, personnel administration, insurance, and statistical methods. In this department a professorship in the economics of public utilities and transportation is maintained by an endowment from the late Honorable William B. McKinley, United States Senator from Illinois. This department cooperates with others in the Division of Social Sciences in the College of Liberal Arts and Sciences, and students in that college may make economics their major subject.

Many of the courses offered in the College of Commerce are open to students in other undergraduate colleges and schools of the University, and to graduate students.

For the *Bureau of Economic and Business Research*, which is administered as a department of this college, see page 489.

Requirements for Graduation

A candidate for the degree of Bachelor of Science in a field of the College of Commerce and Business Administration must (1) meet the general University requirements with respect to registration, residence, scholarship, and fees; (2) have a minimum of 130 semester hours of credit, including credit for the required work in rhetoric, hygiene, physical education, and military science, and including a minimum of 60 hours in courses given in this college (except that in the field of commerce and law this shall be 45 hours and in industrial administration it shall be 50 hours); and (3) complete the requirements of one of the fields of concentration described below, with an average grade of not less than "C" in the courses taken at the University of Illinois while registered in a field of concentration.

Program for the Lower Division¹

(Freshman and Sophomore Years)

First Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
Econ. 22—Economic History of U.S.	3		Econ. 27—Introduction to Business	3	
Accy. 1a or 1e—Princ. of Accounting	3 or 2		Accy. 1b—Accounting Procedure	3	
Rhet. 1—Rhetoric and Composition	3		Rhet. 2—Rhetoric and Composition	3	
Science and/or College Algebra ²	5-8		Science and/or College Algebra ²	3-5	
Military Science (for Men)	1		Hygiene 2 or 5	2	
Physical Education	1		Military Science (for Men)	1	
			Physical Education	1	
<i>Total</i>		16-18	<i>Total</i>		16-18

Second Year

Econ. 1—Principles of Economics	5		Econ. 70—Elementary Statistics	3	
Accy. 2a—Cost Accounting	3		Accy. 2b—Intermediate Accounting	3	
Language or Literature ³	4		Language or Literature ³	4	
Rhet. 10—Business Letter Writing ⁴	2		Rhet. 10—Business Letter Writing ⁴	2	
or Speech 1—Effective Speaking	3		or Speech 1—Effective Speaking	3	
Military Science (for Men)	1		Military Science (for Men)	1	
Physical Education	1		Physical Education	1	
			Elective	2-5	
<i>Total</i>		16-17	<i>Total</i>		16-18

Program for the Upper Division

(Fields of Concentration for the Junior and Senior Years)

(See Requirements for Graduation on preceding page)

Accountancy.—For those who are preparing to follow industrial or public accounting.

Primary List: At least 43 hours, including not less than 18 hours in accountancy and including the courses listed as required, must be selected from the following.

Required: Accountancy 3a, 3b, 5a, 5b, 20; Economics 3, 10; Business Law 1a, 1b; Rhetoric 22; B.O.O. 1, 2. *Elective:* Accountancy 4a, 4b, 13, 30; Economics 11, 36, 71; Business Law 10.

Secondary List: Fifteen hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Banking and Finance.—For those who are preparing to enter banking or finance.

Primary List: At least 21 hours including the courses listed as required must be selected from the following. *Required:* Economics 3, 10, 11; B.O.O. 1, 2. *Elective:* Economics 71; Business Law 1a, 1b, 10; Accountancy 4b, 30.

¹ This Lower Division program applies to all fields except commercial teaching. For the requirements in that field, see page 165.

² *Mathematics and Science.*—All first-year students must elect college algebra. They must elect sufficient courses in mathematics (including college algebra) or science to amount to 5 or more hours each semester, or a total of 10 hours for the year. These courses may be taken from the following subjects: astronomy, bacteriology, botany, chemistry, entomology, geography, geology, mathematics, physics, physiology, zoology.

³ *Language.*—Students must obtain credit in at least 8 hours of English literature, or obtain a reading knowledge of a modern foreign language (French, German, Italian, Spanish) equivalent to that resulting from four semesters of study of a foreign language when commenced in college. For the purpose of this requirement a candidate is assumed to have a reading knowledge of a modern foreign language if he has passed French 2b, German 5 or 6, Italian 2b, Spanish 2b, or a more advanced course in any of these languages, or if he has passed a proficiency examination equivalent to the final examination given in any of these courses. Students expecting later to elect *Government Foreign Service* as a field of concentration (see Public Affairs, page 164) or *Foreign Trade* as a field of concentration (see Marketing, page 164) must choose the foreign language option.

⁴ *Rhetoric and Speech.*—Students taking Rhet. 10 the first semester must take Speech 1 the second semester; those taking Speech 1 the first semester must take Rhet. 10 the second semester.

Secondary List: Fifteen hours of electives must be chosen from history, philosophy, political science, psychology, sociology.

Technical List: At least 15 hours must be selected from courses in either or both of the following two groups (A and B).

(A) BANKING.—Economics 5, 6, 8, 9; Mathematics 23; Agricultural Economics 15.

(B) FINANCE.—Economics 6, 36, 51, 55, 81, 92; Accountancy 3a; Mathematics 23.

Commerce and Law.—For those who wish to combine commercial and legal studies and obtain both the degrees of Bachelor of Science and Bachelor of Laws in six years (see also requirements for graduation from the College of Law, page 227). In their fourth years, students who have earned at least 100 credit hours in pre-law work will be regularly registered in the College of Law, but must file copies of their study-lists in the office of the Dean of the College of Commerce and Business Administration at the beginning of each semester. In this field, no credit is given for business law taken in the College of Commerce and Business Administration.

Primary List: A sufficient number of hours must be selected from the following courses, including Economics 3, to make a total of at least 45 hours for the three years of work in the College of Commerce. *Required:* Economics 3. *Elective:* Economics 10, 25, 42, 44, 51, 61, 65, 92; Accountancy 3a, 13, 20; B.O.O. 1, 2, 20.

Secondary List: Twelve hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Technical List: Thirty hours of law are required in the fourth year.

Commercial Teaching.—For complete program, see page 165.

Economics.—For those who desire a broad undergraduate preparation in economics. Students who contemplate graduate work in economics should elect this field of concentration.

Primary List: Thirty-six hours must be selected from at least four of the following groups (A-G), including the courses shown as required.

(A) ECONOMIC THEORY AND HISTORY.—*Required:* Economics 3, 61. *Elective:* Economics 19, 20, 24, 25, 44, 65.

(B) FINANCE AND BANKING.—*Required:* Economics 3, 10. *Elective:* Economics 5, 6, 8, 9, 11, 36; B.O.O. 2.

(C) UTILITIES AND TRANSPORTATION.—*Required:* Economics 92. *Elective:* Economics 81, 82, 83, 96.

(D) INSURANCE AND STATISTICS.—*Elective:* Economics 54, 55, 56, 71, 72.

(E) FOREIGN TRADE.—*Required:* Economics 29. *Elective:* Economics 30, 31; B.O.O. 2.

(F) LABOR.—*Required:* Economics 41. *Elective:* Economics 42, 43; B.O.O. 1.

(G) PUBLIC FINANCE.—*Required:* Economics 3, 51. *Elective:* Economics 52.

Secondary List: Fifteen hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Industrial Administration.—For those who desire to combine commerce with engineering or with other technical work.

Primary List: Required: B.O.O. 1, 2, 4, 14, 15; Business Law 1a, 1b; Economics 10, 41; Rhetoric 22.

Secondary List: Eight hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Technical List: At least eighteen hours of approved technical electives as shown below must be taken. At the time of declaring the field of concentration near the end of the sophomore year, a petition should be filed in the office of the College of Commerce and Business Administration, designating the objective which prompts selection of this field, and indicating the technical electives to be taken in satisfaction of this requirement. Approval of this petition is necessary for graduation in industrial administration. The technical electives follow:

Accountancy 4a, 30.
 Architecture 43, 44, 45, 46, 47, 48, 57, 58.
 Business Organization and Operation 7,
 8, 17, 18, 20, 22, 90a-90b, 91a-91b.
 Chemistry—All courses.
 Civil Engineering 1, 20, 22, 25, 30, 31,
 60, 62, 63, 64, 65, 66, 90, 91.
 Dairy Husbandry—All courses.
 Economics 43, 65, 90a-90b, 91a-91b, 92,
 93, 96.

Electrical Engineering—All courses.
 General Engineering Drawing—All
 courses.
 Geology 1, 1a, 2a, 20, 33, 39, 95, 96.
 Mechanical Engineering—All courses.
 Mining Engineering—All courses.
 Theoretical and Applied Mechanics—All
 courses.

Management.—For those who desire a broad undergraduate preparation in management. (For Personnel Management, see page 167.)

Primary List: At least 34 hours including the courses shown as required must be selected from the following. *Required:* B.O.O. 1, 2; Economics 3, 10; Business Law 1a, 1b. *Elective:* Accountancy 4a, 4b, 30; B.O.O. 3, 4, 7, 8, 14, 15, 20, 24; Economics 11, 30, 31, 41, 43, 51, 61, 92.

Secondary List: Fifteen hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Marketing.—For those who are preparing to enter some branch of distribution.

Primary List: At least 22 hours including the courses shown as required must be selected from the following. *Required:* B.O.O. 1, 2, 7; Economics 3, 10; Business Law 1a. *Elective:* B.O.O. 3, 8, 17, 20, 25, 30, 32; Economics 30, 43, 92; Business Law 1b.

Secondary List: Fifteen hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Technical List: At least 12 hours must be selected from the following groups (A-E), preferably in one or two groups only. No course may be counted as satisfying the requirements in both the primary and the technical lists.

(A) SELLING AND MERCHANDISING.—B.O.O. 3, 8, 17, 20, 22, 24; Speech 2.

(B) ADVERTISING.—B.O.O. 8, 18, 22, 26, 33, 34; Rhetoric 21, 22.

(C) FOREIGN TRADE.—Foreign language; Economics 8, 24, 29, 30, 31, 94; Political Science 6a.

(D) TRANSPORTATION.—Economics 92, 93, 96.

(E) AGRICULTURAL MARKETING.—Agricultural Economics 14, 30, 34, 36, 37.

Public Affairs.—For those who are preparing to enter some branch of public service.

Primary List: At least 18 hours including the courses shown as required must be selected from the following. *Required:* Economics 51, 65. *Elective:* Economics 3, 10, 29, 41, 52, 81, 92; B.O.O. 2.

Secondary List: Fifteen hours of electives must be chosen from courses in history, philosophy, political science, psychology, sociology.

Technical List: At least 15 hours must be selected from the courses listed under one of the following groups (A-C). Other courses necessary for graduation shall be chosen with consent of the adviser to this field of concentration. No course may be counted as satisfying the requirements in both the primary and the technical lists.

(A) GENERAL SERVICE.—Courses must be chosen from economics, accountancy, or business organization and operation, to prepare the student for the type of work which he plans to enter, such as trade and civic secretarial service, management of a public industry, management of a governmental unit, or service in the tax, banking, labor, insurance, or other governmental departments.

(B) GOVERNMENT FOREIGN SERVICE.—Foreign language; Economics 6, 8, 24, 31; Political Science 6a, 6b, 7, 8; B.O.O. 2, 7, 8; History 29, 32b.

(C) SOCIAL SERVICE.—Economics 42, 43, 55; Psychology 1; Political Science 12, 13; Sociology 1, 2, 3, 4, 8, 9.

Curriculum Preparatory to Commercial Teaching

For the Degree of Bachelor of Science in Commercial Teaching¹

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
D.G.S. 1a—Verbal Expression ²	4	D.G.S. 1b—Verbal Expression ²	4
B.O.O. 12a—Typewriting ³	2	B.O.O. 12b—Typewriting ³	2
B.O.O. 13a—Shorthand ³	2	B.O.O. 13b—Shorthand ³	2
Accy. 1a—Principles of Accounting	3	Hygiene	2
Math. 2 or 3—Algebra; <i>or</i> B.O.O. 5— Business Computations ⁴	3	Accy. 1b—Accounting Procedure	3
Military Science (for Men)	1	Math. 2, 3, or 4, <i>or</i> approved elective in natural science	3
Physical Education	1	Military Science (for Men)	1
		Physical Education	1
<i>* Total</i>	15-16	<i>Total</i>	17-18

Second Year

B.O.O. 12c—Typewriting	2	B.O.O. 45—Office Organization and Management	3
B.O.O. 13c—Shorthand	2	Accy. 2b—Intermediate Accounting	3
Accy. 2a—Elem. Cost Accounting	3	Rhet. 10—Business Letter Writing	2
Econ. 1—Principles of Economics	5	Psych. 1—Introduction to Psychology	4
Ed. 1—The American Public School	2	Electives	3
Military Science (for Men)	1	Military Science (for Men)	1
Physical Education	1	Physical Education	1
<i>Total</i>	15-16	<i>Total</i>	16-17

Third and Fourth Years

	HOURS
I. American Literature or approved electives in other Humanities	4
II. Education (prescribed):	
Ed. 25—Educational Psychology	3
Ed. 10b—Technic of Teaching in the Secondary School	3
Ed. 6b—Principles of Secondary Education	3
Ed. Prac. 24—Stenography and Typewriting; <i>or</i> Ed. Prac. 26—Bookkeep- ing; <i>or</i> Ed. Prac. 27—Economics; <i>or</i> Ed. Prac. 29—Geography	5
<i>Total, Education</i>	14
III. Commerce (prescribed):	
Bus. Law 1a-1b	6
B.O.O. 2—Marketing	3
B.O.O. 7—Salesmanship	2
Econ. 26—Economic Resources	3
<i>Total, Prescribed in Commerce</i>	14
IV. Commerce (electives)	5
V. Hist. 3b and Pol. Sci. 1a (prescribed)	6
VI. Approved elective courses to complete teaching minors, to add new teaching minors, or for other approved courses consistent with the objectives of the program	20-24
<i>Total, Third and Fourth Years</i>	63-67
<i>Total for the Four-Year Curriculum</i>	130

¹ Each student is required to serve, prior to graduation from this curriculum, an approved internship of at least 300 hours in an office or business.

² A student may offer Rhet. 1 and 2 (6 hours) and Speech 1 (3 hours) in lieu of D.G.S. 1a and 1b (8 hours).

³ Students who have had training in shorthand and typewriting may take proficiency examinations in these subjects for credit. Shorthand and typewriting are recommended for commercial teachers, but with the permission of the Dean of the college in which the student is registered other courses in the College of Commerce may be substituted.

⁴ Unless the student intends to acquire a teaching minor in mathematics, he should choose Business Computations (B.O.O. 5) in preparation for teaching business arithmetic in high school.

Illinois Certification Requirements

A student who has followed the above program through the first four years will have met the Illinois Certification requirements, as indicated in the following tabulation:

	<i>University Requirements</i>	<i>State Requirements</i>
I. General Education	42 hours	35 hours
II. Commerce major (prepares for teaching shorthand, typewriting, bookkeeping, business law, distribution, general business training, commercial arithmetic, salesmanship, and office practice)	51-54 hours	32 hours
III. Teaching minor (not required for commercial teaching in junior colleges)	One	One
(Students preparing to teach commercial work in high schools should acquire a minor selected (with approval) from the following list: mathematics, English, non-historical social studies, geography, music, home economics, industrial arts, physical education.)		

Fifth Year

For the Degree of Master of Science in Commercial Teaching

- I. *Economics*.—A sufficient number of hours in approved advanced undergraduate and graduate courses in Economics must be taken to bring the total credit hours in this subject to not less than 17 for the five years.
- II. *Business Organization and Operation*.—A sufficient number of hours in approved advanced undergraduate and graduate courses in Business Organization and Operation must be taken to bring the total credit hours in this group of subjects to not less than 17 for the five years, including Business Law and excluding B.O.O. 5.
- III. *Accountancy*.—A sufficient number of hours in approved advanced undergraduate and graduate courses in Accountancy must be taken to bring the total credit hours in this subject to not less than 17 for the five years, excluding Accy. S15.
- IV. *Education*.—Ed. 101 or Ed. 30, and Ed. 125.
- V. *Commerce*.—Sufficient work must be taken in the fifth year in courses recognized for graduate credit to bring the total hours in commerce courses to not less than 60 for the five years.
- VI. *Electives*.—Nine hours of approved advanced undergraduate and graduate courses having general educational value, and of courses which bear directly on subjects taught in high schools.
- VII. *Summary*.—The requirements of I-V, above, can be satisfied with a minimum of 23 hours of credit; with the 9 hours of electives (VI), this makes a total of 32 hours in the fifth year, or 162 hours for the five-year program.

The maximum *required* credit hours for electives during the third, fourth, and fifth years in Commerce fields are as follows: Business Organization and Operation (including Business Law), 6 hours; Economics, 9 hours; Accountancy, 5 hours.

Undergraduate Commerce Minors for Non-Commerce Students

I. Shorthand and Typewriting:	HOURS
<i>Required:</i>	
B.O.O. 12a-c—Typewriting	6
B.O.O. 13a-c—Shorthand	6
Rhet. 10—Business Letter Writing	2
B.O.O. 45—Office Organization and Management	3
<i>Total</i>	17
II. Bookkeeping:	
<i>Required:</i> Accountancy 1e, or 1a and 1b, 2a, and 2b	11-12
<i>Elective:</i> Accountancy 3a; Business Law 1a, 1b; B.O.O. 2, 5	4
<i>Minimum Total</i>	16
III. General Commerce Minor:	
<i>Required:</i>	
Accountancy 1a, 1b	6
Business Law 1a, 1b	6
B.O.O. 5	3
Economic or Commercial Geography	5
<i>Total</i>	20

Program in Personnel Management

For students who wish to study the problems which arise out of the relationships between employer and employee, or who wish to prepare themselves for affiliation with personnel departments in industry, commerce, or public or private institutions, a series of integrated courses has been arranged as shown below.

Lower Division

The requirements for the first two years are the same as for all other students in this College (page 162).

Upper Division

Primary List: Required: B.O.O. 1; Business Law 1a or 2; Economics 41, 43; Psychology 10.

Secondary List: Required: Division of General Studies 7a or Psychology 1; Political Science 1a, 1b; Sociology 1.

Technical List: At least 18 hours must be chosen from one of the following groups, including the courses indicated as required.

(A) INDUSTRIAL.—*Required:* B.O.O. 14; Economics 54. *Elective:* B.O.O. 2, 4, 15; Economics 3, 10, 42, 71; Education 53, 55; History 3a, 3b; Mechanical Engineering 87; Psychology 23, 34, 43.

(B) MERCHANDISING.—*Required:* B.O.O. 2; Economics 54. *Elective* B.O.O. 3, 7, 8, 17, 20, 30; Economics 10, 65, 71; Education 55; History 3a, 3b; Psychology 23, 34, 43.

(C) ADMINISTRATION.—*Required:* Economics 51; Political Science 12a. *Elective:* B.O.O. 2; Economics 3, 40, 44, 65, 71; Education 55; History 3a, 3b; Political Science 4, 11, 12b; Psychology 23, 34, 43; Sociology 18, 19.

Economic and Business Aspects of Aviation

Three courses have been designed dealing with the economic and business aspects of aviation, namely: Economic Problems of Commercial Air Transport, Airport Management, and Airline Management. These three courses are not the only ones offered in the College of Commerce for those who wish to prepare themselves adequately for responsible positions in this new and important phase of business. Other courses offered in the College which deal with problems and principles of management of any business would naturally form the core of the subject matter for a course of study in preparation for positions of responsibility in any one of the several business phases of aviation.

As a background for the courses dealing specifically with aviation, the student would have available general courses in business law, business English, labor problems, accountancy, banking, statistics, economic principles, and others.

The University of Illinois owns its own airport, approximately 800 acres in size, near the campus. Transcontinental airline companies have applied for landing privileges at the airport as one of their regular stops in commercial service and have indicated a desire for some cooperative arrangement whereby students can work part time while pursuing their college courses. Such cooperation might in some cases take the form of alternate semesters in practical application and University study.

The College of Education

THE COLLEGE OF EDUCATION IS CONCERNED WITH LEARNING as a process, the principles and methods of teaching, and the organization of schools as agencies of culture. The courses of study, which are centered on the development of the individual as a social unit, fall into groups dealing with the philosophy, principles, and history of education, the psychology and technology of teaching, the management of school systems, the methods of extension and research, the planning of programs for group instruction and individual activities, and the development of attitudes and habits necessary for success in complex environments. These groups have in common the aim of anticipating the needs of students as explorers and cultivators of the fields of learning in which they will become teachers.

The courses of study are supplemented by practice in teaching under special supervisors in school systems cooperating with the College of Education. The University High School, which serves as a laboratory for this college, affords opportunities for experimentation under controlled conditions. The Bureau of Educational Research is operated as a department of this college (page 490).

Candidates for baccalaureate degrees in the College of Education take certain required courses and elect other courses in this college, and prepare themselves further for their chosen fields by concentrating in restricted groups of subjects in other colleges and schools of the University. For those who wish to concentrate in the fields of agricultural education, home economics education, or industrial education, specialized curricula are provided in this college, each leading to the degree of Bachelor of Science. In the fields of other teaching subjects, sequences of courses comparable to these curricula are arranged for individual students by advisers.

Except for the curriculum in industrial education which begins with the freshman year, the two years of study required for admission to the College of Education may be done in any college approved by the University. Juniors entering from the College of Liberal Arts and Sciences should have completed the prescribed subjects and group requirements of the general curriculum or the first two years of work in the Division of General Studies. A junior entering from any other college of the University should have completed the first two years of a regular curriculum, and anyone transferring from another institution must have acceptable credit for an equivalent amount of work in that institution.

All the introductory courses and most of the advanced courses offered in the College of Education are open to students enrolled in other colleges and schools of the University. Candidates for degrees in the other colleges and schools, while studying there the subjects they intend to teach, may fulfill the requirements for teachers' certificates by electing courses in education.

For *admission*, see pages 99 and 108; for regulations concerning *unclassified students*, see page 106; for general University requirements for *graduation*, see page 114; for *fees*, see page 118; for *prizes and awards*, see page 136; for *clubs and societies*, see page 128; for *special conferences and short courses*, see page 475.

Students in the College of Education who are preparing for graduate work should arrange their undergraduate programs to meet the requirements for admission to the Graduate School (see page 211). Those who desire positions as school librarians may obtain professional training in the Library School (see page 266). Special programs leading to the degrees of Master of Education and Doctor of Education are described on page 214.

Requirements for Graduation

Each candidate for a baccalaureate degree in the College of Education must meet the general University requirements with respect to registration, residence, fees, hygiene, military science, physical education, and rhetoric, and must secure credit, with a satisfactory scholastic average, in approved courses totaling at least 120 semester hours, including the credit accepted for admission to this college, but not counting the first two years of the required work in military science and physical education.

A. Prescribed Subjects:

Twenty hours in education, including the following courses: The American Public School, 2 hours; Education Psychology, 3 hours; Technic of Teaching in the Secondary School *or* Technic of Teaching in the Elementary School, 3 hours; a teachers' course in the subject of specialization, 2 hours; Principles of Secondary Education *or* Principles of Elementary Education, 3 hours; and Educational Practice, 5 hours. (A 3.5 average is prerequisite to Educational Practice.)

B. Subjects of Specialization:

Students must specialize in three subjects selected from the following list. Each student must complete at least 20 hours of approved courses in his first subject of specialization (except that in Agricultural Education, 47 hours, Home Economics Education, 36 hours, and Industrial Education, 33 hours must be completed). In the other subjects of specialization the student must complete at least 16 hours of approved courses. In computing the hours in the subjects of specialization, courses taken in other colleges prior to admission may be counted.

Art

Biology.—(A well-balanced program selected from Zoology, Physiology, Entomology, Botany, Bacteriology. For a first subject of specialization, 25-32 hours are required; and for a second subject of specialization, 18-22 hours are required.)

Chemistry

Civics.—(Includes Political Science and Sociology with a minimum of 8 hours in either subject.)

Commercial Subjects.—(Includes Accountancy, Business Organization and Operation, Business Law, Business Letter Writing.)

Economics

English.—(Includes courses in English Literature, American Literature, and Rhetoric.)

French

General Science.—(From 32 to 35 hours of beginning sciences for a first subject of specialization; from 20 to 25 hours for a second subject. The total should include at least one year of work in the physical sciences and one year in the biological sciences.)

Geography.—(Includes Geology.)

German

History

Home Economics

Industrial Education.—(Includes Industrial Arts.)

Journalism.—(As a second or third subject of specialization.)

Latin

Mathematics

Music

Physics.—(Includes courses in Theoretical and Applied Mechanics.)

Physiology.—(Includes Hygiene 10.)

Physical Education for Men

Physical Education for Women

Spanish

Speech.—(Minimum of sixteen hours in speech; the remainder may be English Literature and American Literature.)

NOTE: All students are urged to consult the Secretary of the Appointments Committee concerning the combinations of subjects most frequently requested by the high schools of the state and the standard of preparation usually demanded.

C. Electives:

The remainder of the curriculum may be elected from courses offered by other colleges and schools in the University.

Curriculum in Agricultural Education

For the Degree of Bachelor of Science in Agricultural Education

This four-year curriculum, totaling 130 semester hours, is designed to meet the requirements for teaching agriculture under the State Board for Vocational Education. The first two years of work may be taken in the College of Agriculture (see page 145) or in any other college approved by the University. The third and fourth years may be taken in the College of Education by students who meet the requirements for admission to this college.

Summary

	HOURS	TOTAL
I. Prescribed Courses in Agriculture:		
Agricultural Economics 1, 20, and 30.....	9	
Agricultural Engineering—nine hours selected from courses 2, 3, 4, 5, and 21 ¹	9	
Agronomy 1 and 2, and three hours selected from courses 7, 8, 10, 11, 13, 22, 33, and 34.....	12	
Animal Husbandry 1, ² 6, 21, and 37.....	13	
Dairy Husbandry 24a and 33.....	5	
Horticulture 1a and 1b.....	4	52
II. Prescribed Courses in Natural Science:		
Bacteriology 5a.....	3	
Botany 5.....	3	
Chemistry 1 or 2, and 5.....	8 or 10	
Entomology 1.....	3	
Geology 44.....	3	
Psychology 1.....	4	
Zoology 14.....	3	27 or 29
III. Prescribed Courses in Education:		
Agricultural Education 50 and 51.....	10	
Education 1, 6, and 25.....	8	18
IV. Prescribed Miscellaneous Courses:		
Economics 2.....	3	
Hygiene 2 or 5.....	2	
Military Science.....	4	
Physical Education.....	2	
Rhetoric 1 and 2.....	6	
Speech 1.....	3	
Political Science 1a.....	3	
History 3b.....	3	
Humanities.....	2	28
V. Electives.....		
		5 or 3
<i>Total Required for Graduation.....</i>		130

Curriculum in Art Education

(See page 202)

Curriculum in Home Economics Education

For the Degree of Bachelor of Science in Home Economics Education

This four-year curriculum totaling 120 semester hours, is designed to meet the requirements for certification of teachers of home economics by the State Superintendent of Public Instruction. The first two years of work in this curriculum may be taken in the College of Agriculture (see page 155), or in the College of Liberal Arts and Sciences (see page 233), or in any other college approved by the University. The third and fourth years may be taken in the College of Education by students who meet the requirements for admission to this college.

¹ Students who have had an acceptable shop course in high school should omit Agr. Eng. 21.

² Students who have had livestock judging in high school will not be required to take An. Husb. 1, but they are required to take a total of 13 hours in animal husbandry.

Summary

Those who wish to meet the requirements of the State Board for Vocational Education should see the curriculum in vocational home economics education on page 157.

	HOURS
Art 1a, 1b	4
Bacteriology 5a and/or 5b ¹	3-5
Chemistry 1 or 2, 5, 32	13-11
Economics 2	3
Education:	
<i>Vocational:</i> Ed. 1, 6b, 10b, 25, 41; Ed. Prac. 14; Home Econ. 11	22
<i>Non-Vocational:</i> Ed. 1, 6b, 10b, 25; Ed. Prac. 14; Home Econ. 11	19
History 3a or 3b	3
Home Economics:	
<i>Vocational:</i> Home Econ. 1, 2, 3, 4, 5, 7, 10, 14, 19, 29a-29b, 30, 40, 56, 56b, 58, 59	42
<i>Non-Vocational:</i> Home Econ. 1, 2 or 3, 4, 7, 10, 29a-29b, 56, 58, 59, and a minimum of seven hours from 5, 14, 19, 30, 56b, 65	32-41
Hygiene 2	2
Literature	4
Physical Education (4 semesters)	0
Physiology 1 or 1a ¹	3-5
Political Science 1a or 1b	3
Psychology 1	4
Rhetoric 1, 2 or Division of General Studies 1a, 1b	6
Sociology 1	3
Speech 1 or Division of General Studies 1a, 1b	3
<i>Total Required for Graduation</i>	<u>120</u>

Curriculum in Industrial Education

For the Degree of Bachelor of Science in Industrial Education

This four-year curriculum, totaling 120 semester hours, is offered entirely in the College of Education, which admits freshmen for this purpose. Students completing this curriculum qualify for certification by the State Superintendent of Public Instruction and in most cases by the State Board for Vocational Education. Modifications of the work shown in the following outline may be made to meet special needs, particularly for teachers already in service. Minor teaching subjects recommended are: chemistry, mathematics, physics, social studies, or a combination of mathematics and physics.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Indus. Ed. 3—The General Shop	4	Indus. Ed. 1—Woodworking	4
D.G.S. 1a—Verbal Expression	4	D.G.S. 1b—Verbal Expression	4
Math. 3—Algebra ²	5	Chem. 1 or 2—Inorganic Chemistry	5 or 3
or Elective	3	G.E.D. 1—Elements of Drawing	4
Hygiene	2	Physical Education	1
Physical Education	1	Military Science (for Men)	1
Military Science (for Men)	1		
<i>Total</i>	<u>15-17</u>	<i>Total</i>	<u>17-19</u>

Second Year

Indus. Ed. 4—Advanced General Shop	4	Indus. Ed. 2—Advanced Wood Shop	4
Pol. Sci. 1a—American Government	3	Hist. 3b—History of the United States, 1828-1946	3
G.E.D. 2—Descriptive Geometry	4	Engl. 12—American Literature	2
Math. 4—Trigonometry	2	or Academic Elective	2 or 3
Ed. 1—The American Public School	2	Psych. 1—Introduction to Psychology	4
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
		Electives	2 or 3
<i>Total</i>	<u>17</u>	<i>Total</i>	<u>17-19</u>

¹ Each student must take at least eight hours in physiology and bacteriology.

² Required only of those who enter with one unit of high school algebra.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Agr. Eng. 3—Gas Engines and Tractors; or Shop Elective.....	3	Agr. Eng. 28—Adv. Gas Engines and Tractors; or M.E. 87—Machine Tool Lab.....	3
Arch. 43—Materials and Methods of Construction; or Elective.....	3	Arch. 44—Materials and Methods of Construction; or Elective.....	3
Phys. 7a and 8a—General Physics.....	5	Ed. 6b—Princ. of Secondary Ed.....	3
Indus. Ed. 53—Prob. of Indus. Ed.....	3	Phys. 7b and 8b—General Physics.....	5
Ed. 25—Educational Psychology.....	3	Econ. 1—Principles of Economics.....	3
Physical Education for Men.....	1	Physical Education for Men.....	1
<i>Total</i>	18	<i>Total</i>	18

Fourth Year

M.E. 88—Machine Tool Laboratory; or Shop Elective.....	3	Indus. Ed. 57—Methods of Shop Instruction.....	3
Indus. Ed. 62—History and Organiza- tion of Industrial Arts.....	3	Ed. Prac. 16—Supervised Teaching.....	5
Engl. 13—American Literature.....	2	Ed. 10b—Technic of Teaching in the Secondary School.....	3
Econ. 41—Labor Problems; or Eng. 39—Industrial Relations.....	3	Physical Education for Men.....	1
Ed. 41—Princ. of Voc. Ed.....	3	Electives.....	4
Physical Education for Men.....	1		
<i>Total</i>	15	<i>Total</i>	16

Curriculum in Music Education

(See page 206)

Curriculum in Physical Education for Men

(See page 271)

Curriculum in Physical Education for Women

(See page 275)

Certification of Teachers

The University's Committee on Appointment of Teachers, in response to requests from school authorities, recommends qualified graduates of the University for positions as teachers and supervisors in public schools, colleges, and technical schools. Applicants should consult the secretary of this committee in 200 Gregory Hall.

Each applicant for a position in the schools of Illinois, on completing his work in the University, should have a transcript of his record sent by the Recorder at Urbana to the State Superintendent of Public Instruction at Springfield. When he has obtained a position he should apply for a certificate through the office of the superintendent of schools in the county in which he is to teach. The requirements now in effect for the kinds of certificates most frequently needed by graduates of the University are as follows:

A limited high school certificate, valid for four years for teaching in grades seven to twelve of the common schools, may be issued to prospective teachers who have graduated with a bachelor's degree from a recognized college or who present certified evidence, accompanied by faculty recommendation, of having completed the requirements below. This certificate is renewable in periods of four years upon successful teaching and professional growth satisfactory to the county superintendent of schools.

	HOURS
I. General Education:	
Oral and Written Expression.....	8
Natural Science.....	6
(Includes biology, botany, chemistry, general science, geography, geology, mathematics, physics, physiology, and zoology, or their equivalents in integrated courses. It is suggested that at least one laboratory course be included.)	
Social Science.....	6
(A course in the history of the United States and the American Government is required. Includes economics, general social science, geography, history, political science, and sociology, or their equivalents in integrated courses.)	
Humanities.....	6
(Includes art, languages, literature, music, philosophy, and psychology, or their equivalents in integrated courses.)	
Health and Physical Education.....	2 to 4
(Includes hygiene, health education, physical education, safety education, first aid, and recreation.)	
Additional work in any of the above fields.....	6
<i>Total, General Education.....</i>	<u>35</u>
II. Professional Education:	
Adolescent Growth and Development or Educational Psychology.....	2 or 3
Principles of Education or Philosophy of Education (including the study of professional ethics).....	2 or 3
Student Teaching (high school level).....	5
Materials and Methods in the Secondary School, or a course in methods of teaching a particular secondary school subject.....	2 or 3
American Public Education.....	2 or 3
Electives in Professional Education.....	2 or 3
<i>Total, Professional Education.....</i>	<u>16</u>
III. Major (one) ¹	32
IV. Minor (one) ¹	16
Three minors, two of which are in related fields, will be accepted in lieu of one minor and one major.	
V. Electives.....	<u>21</u>
<i>Total.....</i>	<u>120</u>

A life high school certificate, valid for teaching and supervising in grades seven to twelve of the common schools, may be granted to those fulfilling the following requirements: a master's degree conferred by a recognized college or university, credit for 22 semester hours in education, and four years of successful teaching experience, two of which must have been in the State of Illinois.

Statements of the requirements for other types of certificates may be obtained from the State Superintendent of Public Instruction.

The University High School

The purposes of the University High School are to offer instruction of a superior quality to pupils of the high school grades; to afford opportunities for observation and practice to University students who expect to teach; to provide a laboratory for the College of Education; to assist the teachers of the public schools of Illinois in the solution of their educational problems.

In order to insure the realization of these purposes, the University's officers of administration carefully select the teachers in the University High School; provide for the supervision of classroom activities; permit classes of only moderate size; limit the total enrollment, including the sub-freshman class, to two hundred fifty pupils; and require students in attendance to maintain high standards of scholarship.

¹The major and minor should be in separate areas or subjects selected from the following fields: agriculture, art, commerce, English, foreign languages, geography, home economics, industrial arts, library science, mathematics, music, physical education, psychology, science, social studies, and speech. Majors and minors approved for certification are not necessarily identical with institutional majors and minors.

The University High School is accredited by the North Central Association of Colleges and Secondary Schools and by the State Department of Public Instruction.

Buildings and Equipment.—The University High School is located at the corner of Mathews and Springfield Avenues in Urbana, on the campus of the University of Illinois. Near the high school is the gymnasium, in which the physical education classes meet and in which intramural and interscholastic games take place. The gymnasium is also a center for the social life of the school.

In the high school building are nine laboratories, supplied with ample modern equipment to serve the special needs of the departments of science, industrial arts, home economics, art, and commerce.

The library contains approximately 7,000 volumes of reference and recreational reading books carefully selected for high school pupils. In addition, there are in the library valuable picture and pamphlet collections. Thirty periodicals and a number of newspapers provide current reading materials. The University Library, of which the High School Library is a branch, supplements these facilities.

Admission Requirements.—The Principal of the University High School will consider applications for admission in the order in which he receives them until he completes a registration of two hundred fifty pupils. Pupils are admitted to the University High School on the following plans:

1. Graduation from eighth grade. No examinations are required.
2. Transfer from another high school. Pupils transferring from other high schools will be admitted upon evidence of honorable release. They will be allowed full credit for all completed courses which are the equivalents of courses taught in this high school.
3. Sub-Freshmen: Pupils who have completed the first six grades or the equivalent make up the personnel of this class. These pupils complete in one year the essential features of the seventh and eighth grades. Elementary school records, scores on achievement and intelligence tests, and a health examination are the bases for the selection of pupils for this group.

Fees.—The tuition fee is \$25 a semester. A fee of \$1 for the use and laundering of towels must be paid at the beginning of each year by all pupils registering for classes in physical education. No charge is made for the use of lockers, laboratory or gymnasium equipment, or for the services rendered by the University of Illinois Health Station.

There is no tuition fee for the summer session. A charge of \$5 is assessed each student who registers in typewriting in the summer session. A small locker and towel fee will be charged each student who uses one of the University swimming pools.

Summer Courses.—Pupils are eligible to attend classes in the University High School summer courses if they have been graduated from the eighth grade; or if they have been regularly registered pupils in good standing in another high school during the school year; or if they show evidence through written examinations of their ability to do satisfactory work. Students interested in attending the University High School summer session are asked to write to the Principal for a special summer announcement of courses which will be ready after May 1.

The College of Engineering

TO PREPARE MEN FOR PROFESSIONAL WORK IN ENGINEERING and for responsible positions of a technical and semi-technical character in industry, commerce, and government, the College of Engineering provides training in the mathematical and physical sciences and their applications to the design, construction, and operation of industrial plants and public and private works of all kinds. The curricula in this college, though widely varied and specialized, are built on a general foundation of scientific facts and theories applicable to many different fields. Work in the classrooms, laboratories, shops, and drafting rooms is correlated by practical problems which the students solve by methods similar to those of practicing engineers.

In addition to the fundamental and technological courses in each curriculum, some cultural courses are required in the humanities, such as history, economics, rhetoric and speech, and others are elective, so that each student may broaden his program. Thus, training for the practice of engineering as a profession is supplemented by an understanding of human relationships, an appreciation of economic factors in industrial and public works enterprises, and an insight into regional and national problems of production and distribution of goods.

While each student pursues a curriculum of his own choice according to the field of his particular interest, all the students take certain courses in common. Basic courses in mathematics, chemistry, physics, rhetoric, and drawing are required in the first two years. Although the curricula are progressively specialized in the third and fourth years, each student is required to take some courses outside his main field.

Besides courses in the history and economics of industry, transportation, and public and private engineering works, in industrial relations, and in business law — which are essential to the engineer — numerous courses in accountancy, business organization and operation, liberal arts and sciences, theory and appreciation of architecture, art, and music, and the history, principles, and methods of education, are available as non-technical electives to be counted toward graduation.

The Engineering Library, on the first and second floors of Engineering Hall, contains the reference books, periodicals, catalogs, and technical publications which the students need constantly, and also provides for general reading and private research.

Most of the departments in this college offer courses for graduate students as well as for undergraduates. Some of the undergraduate courses may be taken for credit in the Graduate School (page 211).

For *admission*, see page 99; for regulations concerning *unclassified students*, see page 107; for a list of the *buildings* used by this college, see page 92; for *collections* related to it, see page 97; for *clubs and societies* auxiliary to its curricula, see page 128; for *fees*, see page 118; for *prizes and awards*, see page 136; for general University requirements for *graduation*, see page 114; for *professional degrees in engineering*, see page 259; for *special conferences and short courses*, see page 475; for the *Engineering Experiment Station*, see page 483.

Curricula

The four-year curricula for students of engineering, described and outlined on the following pages, are:

Aeronautical engineering, administered by the Department of Aeronautical Engineering.
Agricultural engineering, administered by the College of Engineering with the College of Agriculture cooperating.

- Ceramic engineering*, administered by the Department of Ceramic Engineering.
Chemical engineering, administered by the College of Liberal Arts and Sciences.
Civil engineering, administered by the Department of Civil Engineering.
Electrical engineering, administered by the Department of Electrical Engineering.
Engineering physics, administered by the Department of Physics.
General engineering, administered by the College of Engineering.
Mechanical engineering, administered by the Department of Mechanical Engineering.
Metallurgical engineering and *mining engineering*, administered by the Department of Mining and Metallurgical Engineering.
Public health engineering, administered by the Department of Civil Engineering with the College of Medicine cooperating.
Sanitary engineering, administered by the Department of Civil Engineering.

Each student entering the College of Engineering declares his choice of a curriculum. Except where stated in the outline of a curriculum, all first-year students follow the Common Program for Freshmen shown on page 181.

At the beginning of any semester of the first two years, any student is free to change from one curriculum to another without loss of much, if any, credit for the work he has done. Students who are not far advanced in this college may transfer to other colleges without much loss of time in their progress toward degrees.

Special Curricula.—Students of high scholastic achievement, with exceptional aptitudes and interests in special fields of engineering science and its application, may be permitted to vary the course content of the standard curriculum of the department in which they are registered, with the purpose of emphasizing some phases which are not included in the standard curriculum or which can not be encompassed by the usual procedure of course substitution and selection of electives. These unwritten curricula, however, include all the fundamental courses of the standard curricula, the variations being made mainly in the so-called "applicatory" portions of the standard curricula of the college. The program of studies of each student permitted to take such a special curriculum must be approved by a committee of the college, of which the associate dean is chairman, in consultation with the head of the department in which the student is registered and with a professor of the college particularly interested in the field which the student intends to emphasize. This professor automatically becomes the student's adviser in charge of registration and other matters pertaining to the approved program.

Degrees

Students in the College of Engineering who meet the University's general requirements with respect to registration, residence, and fees, and who maintain satisfactory scholastic records in this college, are awarded degrees appropriate to their curricula. Each curriculum requires a minimum of 136 semester hours of credit, not counting the required work in military science and physical education.

Each curriculum leads to the degree of Bachelor of Science and may ordinarily be completed in four years. A graduate of one curriculum ordinarily can qualify for another baccalaureate degree by doing a fifth year of work, consisting of 30-36 semester hours, acceptable to the faculty of this college, providing plans have been made looking toward such an arrangement at the beginning of his junior year.

A graduate of the College of Liberal Arts and Sciences, or any other college of equal standing, who has adequate training in mathematics, physics, and mechanics to enable him to begin the junior year of a curriculum in the College of Engineering, can usually qualify for the degree of Bachelor of Science from this college by two years of work.

Special curricula leading to the degree of Bachelor of Naval Science are provided for those students enrolled in the N.R.O.T.C. program as engineers.

Special Requirements

Foreign Language.—In any curriculum requiring French or German, a student who has been admitted to the University with credit for one or more years of secondary school work in either or both of these languages may count each unit of his entrance credit as equivalent to one semester of university work in excusing him from the required language. Only whole units may be so counted. In the place of the language requirement thus fulfilled, the student must take additional electives approved by the faculty of this college.

Inspection Trips.—Seniors in the College of Engineering are required to make a trip for inspection of industrial establishments and engineering enterprises, in the fields of their major interests. The students who are about to be graduated, and other students who obtain permission of the general committee in charge of this trip, travel in groups, under the supervision of faculty members. The trip usually occupies from three to four days and involves an expense of approximately \$20 to each student.

Thesis.—A senior of high standing in any curriculum, with the approval of the department concerned, may substitute for one or more technical courses an investigation of a special subject and write a thesis on his results.

Electives and Options

Non-technical electives for students in the College of Engineering include all courses offered in the College of Liberal Arts and Sciences and in the College of Commerce, the general courses in the College of Education, courses numbered 1 to 14 in the School of Music, Art 11 and 12, Landscape Architecture 11, and the six courses in Engineering numbered 10, 20, 39, 40, 41, and 92. Field survey courses may be used in place of the non-technical and approved electives in any curriculum. Students electing the third and fourth years of military science and those taking naval science courses may count the credit they receive in place of approved and non-technical electives to an amount equal to the total of these electives stated in each curriculum.

Technical electives include all courses in the College of Engineering not required in the student's curriculum, excepting General Engineering Drawing 1, 2, 4, 6, 7, and 8, and Engineering 10, 20, 39, 40, 41, and 92.

Approved electives include all technical and non-technical electives as defined above and other courses designated as approved electives in the outlines of curricula.

Technical options are restricted to courses of a technical character as listed under this classification by each department.

Departments and Equipment

The College of Engineering includes, besides the departments named in the following paragraphs, the Department of General Engineering Drawing, with offices and drafting rooms in the Transportation Building, in which courses for students in all curricula are conducted. For convenience, these paragraphs also mention the work in chemical engineering, which is administered by the College of Liberal Arts and Sciences.

Aeronautical Engineering.—The curriculum in aeronautical engineering is offered primarily to train students in the fundamental principles of airframe and aircraft power plant design and construction. However, the courses included in the required portion of the curriculum are intended to prepare students for any of the several technical divisions of the aircraft industry, and to provide sound training in engineering fundamentals which can be applied to practice in allied engineering fields. Provisions for elective courses enable the student to select courses of study in the fields of airplane design, aircraft power plant design, airplane production and maintenance engineering, and airline engineering. Specialization is not encouraged in the undergraduate program but graduate study and research may be pursued in aerodynamics, aircraft structures, and specialized phases of the divisions previously listed.

Aeronautical engineering laboratory facilities will include an aerodynamics laboratory equipped for wind tunnel and visual flow experiments; an aircraft physical testing laboratory for static and dynamic testing of aircraft parts and assemblies; an aircraft power plant laboratory equipped for instruction and research in reciprocating engines, gas turbines, and jet propulsion; other specialized laboratories for work with aircraft instruments, aircraft hydraulic and electric systems, cabin atmospheric control, and general accessories.

The University Airport, with three concrete runways each 5,300 feet long and 150 feet wide, one turf runway 4,000 feet long and 150 feet wide, and 12,000 feet of concrete taxiway 50 feet wide, provides one of the most modern university laboratories of this type in the country. Contemplated construction at the airport includes buildings for education and research, airport administration, and hangars for storage and maintenance of private, commercial, and military flight equipment. In addition to the facilities for technical work in aeronautical engineering, the airport provides an excellent laboratory

for education and research in many fields connected with air transportation. Private, government sponsored civilian, and military flight training programs may be conducted at the airport thus making it possible for students in any division of the University to receive this type of instruction if they so desire. Commercial activities at the airport will give students an opportunity to secure additional practical information in many phases of air transportation.

Agricultural Engineering.—The curriculum in agricultural engineering, with an option in machinery and power, and another option in construction and drainage, includes fundamental courses in the College of Engineering and in the College of Agriculture. For a description of this department see page 146.

Ceramic Engineering.—The courses in the Department of Ceramic Engineering deal with the general scientific principles underlying a wide variety of industries in which the raw materials are largely non-metallic minerals, generally silicates. The ceramic industries include the manufacture of brick, tile, and other structural clay products; pottery articles of all types; fire brick and other refractories; glass; vitreous enamels; abrasives; cements, and other products.

Training in ceramic engineering prepares a man for positions of responsibility in the investigation of the physical and chemical properties of raw materials and ceramic products; in the technical control and supervision of processing and manufacturing operations; in the design and erection of kilns, dryers, and other plant equipment; in research and development of new processes and products; and in engineering service in connection with the sale and uses of ceramic materials, products, and processing equipment. Some opportunity for specialization in a particular field of ceramics is provided in elective courses in the curriculum.

The Ceramics Building provides well-equipped laboratories for student instruction and for research, classrooms, offices, library, and museum displays. The adjoining Kiln Laboratory is equipped with a variety of kilns and furnaces for ceramic firing operations as well as machinery for the grinding of materials and for the production of structural clay products.

Chemical Engineering.—The courses in chemical engineering, which are conducted by the Department of Chemistry in the College of Liberal Arts and Sciences, prepare students to evaluate results obtained in the laboratory and to translate them, through a series of developmental stages, into commercial large-scale processes; to improve existing plants; to develop new commercial products; to design new equipment; and to operate and supervise plants in which chemical processes take place. The curriculum offers a thorough training in the fundamental sciences of chemistry, mathematics, and physics, and their application to industry in a wide variety of fields.

The chemical engineering laboratories are in the William Albert Noyes Laboratory of Chemistry and in several smaller buildings constructed for special investigations. The equipment in these laboratories is extensive, and in addition other equipment of the Department of Chemistry is available for use of students in the curriculum in chemical engineering.

Civil Engineering.—The curriculum in civil engineering offers a systematic training in the principles underlying the design and construction of bridges, buildings, dams, retaining walls, and other structures; highways; water supply and sewage disposal systems; hydraulic engineering works, etc. Opportunity is offered in the senior year for a certain amount of specialization in some of the more important branches of civil engineering by the aircraft structures, hydraulic, structural, and transportation options.

Engineering Hall provides ample space for the departmental offices, classrooms, and the senior and junior drafting rooms. An individual desk, available at all times, is provided for each student. In the corridors of this building there is a comprehensive exhibit of large pictures illustrating outstanding civil engineering works.

The Surveying Building contains recitation and drafting rooms and instrument lockers. It is located close to the surveying practice fields.

The Arthur Newell Talbot Laboratory houses laboratories of the Departments of Civil Engineering and Theoretical and Applied Mechanics. The concrete laboratory is provided with the facilities necessary for the study of the proportioning and mixing of concrete and of its physical properties. The highway laboratories are equipped for tests on bituminous and non-bituminous highway materials. The structural laboratory has testing machines varying in capacity from thirty thousand pounds to three million

pounds and all of the necessary instruments for making a complete study of the behavior of structural materials under stress. The subgrade soils laboratory has apparatus for making the routine physical tests as outlined by the U. S. Bureau of Public Roads. In all of these laboratories provision is made for research and graduate work as well as for the undergraduate work.

The Sanitary Engineering Laboratory is equipped to conduct tests in the field of sanitary engineering, including water supply, distribution, and purification; sewerage and sewage treatment; and stream pollution. The University Water Works, the local works of the Illinois Water Service Co., and the sewage treatment works of the Urbana-Champaign Sanitary District provide opportunities for practice and study.

Electrical Engineering.—The first two years of the curriculum in electrical engineering are substantially the same as in other engineering curricula. Instruction is offered in the principles of mathematics and physical science and in engineering drawing and shop. The work in the field of electrical engineering is introduced in the second year by courses in illuminating engineering and secondary power distribution and in an introduction to electrodynamics. In the first semester of the third year a course is offered in circuit analysis accompanied by laboratory work which emphasizes principles.

Beginning with the second semester of the third year the courses in electrical engineering are arranged in three options covering the fields of communication and electronics, illumination, and power. In each option technical courses, accompanied by laboratory exercises, covering the generation, transmission, distribution, radiation, measurement, and utilization of electrical energy in all frequency ranges provide a broad general training supplemented by other courses which emphasize the fields of the options.

The present laboratories are well equipped with modern apparatus for the experimental solution of problems in all fields of electrical engineering. Additional facilities will become available with the completion of a new Electrical Engineering Building, now under construction, which will provide both classrooms and laboratories.

In all laboratories provision is made for research and graduate work as well as for the undergraduate work.

The Electrical Engineering Annex contains a laboratory for the study of high voltage phenomena, the illumination laboratory, and the photometric laboratory. The illumination and photometric laboratories contain exceptionally complete equipment for the demonstration of illumination principles. A part of this equipment is the complete equipment for colorimetry, making these laboratories outstanding in this field.

For students who show exceptional ability and interest and who present an integrated program of study, opportunities to do individual work, particularly of an investigational nature, are provided in both the third and fourth years. Although the options specify the requirements for a degree these students may pursue a program, if approved, fitted to their particular needs.

Mechanical Engineering.—The courses in the Department of Mechanical Engineering present the theory and practice of the generation and transmission of power, and of the design, construction, operation, and testing of machinery of all kinds. In the laboratories emphasis is given to the engineering and economic principles of machine operation, performance, and construction, and to problems of shop management.

The Mechanical Engineering Laboratory is equipped with machines and testing instruments for instruction in steam engineering, gas power engineering, refrigeration, heating, ventilating, and air conditioning.

The Shop Laboratories are provided with machinery and apparatus to illustrate the process of the manufacture of machinery. These laboratories include the Pattern Laboratory, the Foundry Laboratory, the Heat Treatment Laboratory, the Welding Laboratory, and the Machine Tool Laboratory.

Mechanics, Theoretical and Applied.—The courses in theoretical and applied mechanics are designed to meet the needs of students of engineering and of other colleges in which a knowledge of the laws of mechanics is important.

The Arthur Newell Talbot Laboratory houses the laboratories of the Departments of Theoretical and Applied Mechanics and Civil Engineering. Provision is made in all laboratories for undergraduate, graduate, and research work. In the materials laboratory the student makes all of the usual and many special tests of the strength and other properties of materials. The hydraulics and fluid mechanics laboratory has facilities for the study of the flow of water and other fluids under a wide range of pressures and volumes. The fatigue of metals laboratory contains many machines of various types for testing materials under repeated loading and under conditions of high

and low temperatures. A number of small laboratories are arranged for and equipped with the apparatus, including constant temperature and constant humidity controls, needed to make special studies of plastics, vibrations, and photo-elasticity. The concrete research laboratory has facilities for testing cement and aggregates and for making, curing, and testing concrete and reinforced concrete. The large structural and reinforced concrete laboratory is equipped with testing machines varying from thirty thousand to three million pounds and with all the necessary instruments for making complete studies of the behavior of materials, machines, and structures under stress.

The Car Wheel and Brake Shoe Laboratory, a well-equipped laboratory housed in a separate building, is available for carrying on research and advanced instruction on car wheels and brake shoes.

Mining and Metallurgical Engineering.—The Department of Mining and Metallurgical Engineering offers two curricula, as follows:

Metallurgical Engineering.—Metallurgy may be divided into three main divisions—chemical, mechanical, and physical. Chemical metallurgy includes the metallurgical processes involving chemical change and embraces methods of production and refining of metals from their ores. Mechanical metallurgy includes all the processes of working and shaping metals and alloys—processes which do not involve chemical changes but adapt metals as to size and form, such as rolling, forging, drawing, spinning, casting, etc. Physical metallurgy deals with the nature, structure, and physical and mechanical properties of metals and alloys. It includes metallography, testing of metals and alloys, heat treatment of metals and alloys and the physical changes produced thereby. The curriculum in metallurgical engineering has been designed to include the engineering fundamentals of these three main divisions, but emphasis is placed upon physical metallurgy. Specialized courses are provided for ferrous and non-ferrous process metallurgy, metallurgy of deep drawing and pressing, physical metallurgy, ferrous and non-ferrous metallography, physics of metals, electrometallurgy, heat treatment, fuels and furnaces, and alloy steels.

Mining Engineering.—The curriculum in mining engineering is designed for student instruction in the fundamental engineering problems dealing with the extraction of coal and minerals from the earth, and the preliminary preparation of these substances for use in our modern-day civilization. To the preliminary courses in mathematics, physics, chemistry, general engineering drawing, and mechanics, common to all curricula in engineering, the department adds specialized courses in mine surveying, mining methods, prospecting, mine examination, mine ventilation, coal preparation, mineral dressing, mine administration, and design of mine plants. Interwoven with the departmental program is a series of required courses which provides a broad engineering background for the student. The inclusion of elective courses in the curriculum offers flexibility in caring for the needs of the individual students.

Physics.—The Department of Physics offers a curriculum in engineering physics, designed to give students the broad and thorough training in fundamental physics and mathematics which is demanded by the increasing complexity of modern engineering practice. The work of the first two years is much like that in the other engineering curricula; in the last two years advanced courses in physics, mathematics, and chemistry are emphasized, but there is a liberal allowance of electives which the student may use to study the field of engineering in which he is especially interested. The details of technical applications are left to be learned in connection with a particular job; or, if the electives are properly selected, the engineering physics curriculum may be made a basis for graduate work in some particular field of engineering or in physics.

The Physics Laboratory has complete facilities for instruction and investigation in physics, and is especially well equipped for investigations in spectroscopy, high vacua, acoustics, magnetism, magnetic and electrical measurements, electronics, optics, and nuclear physics. Gas, direct and alternating current at several voltages, distilled water, compressed air, and liquid air are freely available. There are two well-equipped workshops, one for the mechanics of the department and one for instructors and advanced students. Nearly all research equipment of a specialized nature is constructed here. A glass blower is in charge of a glass-blowing shop where a large variety of glass equipment is made. An excellent working library of periodicals and books of special use in connection with the courses in physics is maintained in the Physics Laboratory.

A large cyclotron which yields 10 m.e.v. deuterons is housed in the Nuclear Radia-

tions Laboratory and, with other experimental apparatus available there, is used by graduate students and faculty for experimental work in nuclear physics.

The betatron, developed at the University of Illinois since 1940, is housed in the Abbott Power Plant and is used by faculty and graduate students in studies of nuclear phenomena produced by 20 m.e.v. x-rays and electrons.

Public Health Engineering.—The curriculum in public health engineering is offered in the College of Engineering and the College of Medicine, as shown on page 193, to supply the need for trained engineers in public health agencies.

Railway Engineering Options.—To prepare students for service in the technical departments of railways, options are offered in railway civil engineering and railway mechanical engineering, both of which are substantially the same as the civil and mechanical engineering curricula to the end of the second year. The option in railway civil engineering is prepared for those who plan to enter the engineering department of steam and electric railways, while the option in railway mechanical engineering is designed for those who wish to enter the motive-power department of steam railways. The special subjects in railway civil engineering concern the location, design, construction, and maintenance of track and equipment, and the design of railway structures. The courses in railway mechanical engineering add to the fundamentals of the general mechanical engineering curriculum special courses on the design of locomotives and cars, the resistance of trains, the performance and tests of locomotives, and tests of railway equipment. The University owns and operates, jointly with the Illinois Central Railroad, a railway test car designed for experimental work on steam roads. It is equipped for making train resistance and locomotive performance tests. Three steam roads (the Illinois Central, the Cleveland, Cincinnati, Chicago, & St. Louis, and the Wabash) and one electric inter-urban road (the Illinois Terminal Railroad) enter Champaign and Urbana. These roads afford opportunities for practical tests and field work.

Sanitary Engineering.—The curriculum in sanitary engineering parallels closely that in civil engineering, putting greater emphasis on the engineering problems involved in the control of the environment to protect and improve health and comfort. The curriculum is administered by the Department of Civil Engineering and leads to the degree of Bachelor of Science in Sanitary Engineering.

Common Program for Freshmen

Freshmen in the College of Engineering take this program unless otherwise specified in the curricula outlined on following pages.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 2 or 3—Inorganic Chemistry . . .	3 or 4	Chem. 4—Metallic Elements	4
G.E.D. 1 or 4—Elements of Drawing . . .	4	G.E.D. 2—Descriptive Geometry	4
Math. 2—Advanced Algebra	3	Math. 6a—Analytic Geometry	4
Math. 4 or 5—Trigonometry	2	Rhet. 2—Rhetoric and Composition . . .	3
Rhet. 1—Rhetoric and Composition . . .	3	Hygiene	2
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
<i>Total</i>	17 or 18	<i>Total</i>	19

Curriculum in Aeronautical Engineering

For the Degree of Bachelor of Science in Aeronautical Engineering

First Year

Common Program for Freshmen (see above).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
G.E.D. 3—Aircraft Drafting and Lofting.....	2	Math. 9—Integral Calculus.....	3
Math. 7—Differential Calculus.....	5	M.E. 82—Machine Tool Laboratory.....	1
M.E. 81—Pattern, Foundry, and Welding Laboratory.....	2	Phys. 1b—General Physics.....	4
Phys. 1a—General Physics.....	4	Phys. 3b—Physics Laboratory.....	1
Phys. 3a—Physics Laboratory.....	1	Speech 1—Effective Speaking.....	3
Non-technical Elective.....	2	T.A.M. 1—Analyt. Mech. (Statics).....	2
Physical Education.....	1	T.A.M. 2—Analyt. Mech. (Dynamics).....	3
Military Science (for Men).....	1	Physical Education.....	1
		Military Science (for Men).....	1
<i>Total</i>	18	<i>Total</i>	19

Third Year

Aero.E. 1—Aerodynamics.....	3	Aero.E. 2—Aircraft Materials and Processes.....	3
Econ. 2—Elements of Economics; <i>or</i> Eng. 10—Engineering Economics.....	3	Aero.E. 22—Aircraft Structures.....	3
Math. 16—Differential Equations.....	3	E.E. 4a—D.C. and A.C. Circuits and Machines.....	2
Rhet. 22—Technical Report Writing.....	2	E.E. 4b—D.C. and A.C. Circuits and Machines Lab.....	1
T.A.M. 3—Resistance of Materials.....	3	M.E. 13—Thermodynamics.....	3
T.A.M. 5—Fluid Mechanics.....	3	M.E. 32—Kinematics and Dynamics of Machinery.....	3
T.A.M. 63—Res. of Materials Lab.....	1	Approved Elective.....	3
<i>Total</i>	18	<i>Total</i>	18

Fourth Year

Aero.E. 23—Aircraft Structures.....	3	Aero.E. 44—Airplane Design.....	3
Aero.E. 33—Aircraft Detail Design.....	2	Aero.E. 62—Aerodynamics Lab.....	2
Aero.E. 43—Airplane Design.....	3	Aero.E. 64—Aircraft Structures Lab.....	1
Aero.E. 99—Inspection Trip.....	0	Aero.E. 66—Aircraft Engine Lab.....	2
E.E. 19a—Electrical Equipment for Aircraft and Airports.....	3	Eng. 92—Engineering Law.....	3
M.E. 9—Internal Combustion Engines.....	3	Approved Elective.....	3
Technical Option ¹	3	Technical Option ¹	3
<i>Total</i>	17	<i>Total</i>	17

Curriculum in Agricultural Engineering

For the Degree of Bachelor of Science in Agricultural Engineering

First Year

Common Program for Freshmen (page 181).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Agr.E. 6—Tractors and Field Machinery.....	3	Agr.E. 7—Farm Structures and Soil and Water Conservation.....	3
Bot. 5—Botany.....	3	Agron. 1—Farm Crops.....	4
Math. 7—Differential Calculus.....	5	Math. 9—Integral Calculus.....	3
Phys. 1a—General Physics.....	4	Phys. 1b—General Physics.....	4
Phys. 3a—Physics Laboratory.....	1	Phys. 3b—Physics Laboratory.....	1
Physical Education.....	1	T.A.M. 1—Analyt. Mech. (Statics).....	2
Military Science (for Men).....	1	Physical Education.....	1
		Military Science (for Men).....	1
<i>Total</i>	18	<i>Total</i>	19

¹ Technical Options: Intended to provide specialized optional sequences in one of several fields in Aeronautical Engineering.

Third Year

MACHINERY AND POWER OPTION

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Econ. 2—Elements of Economics	3	Agr. Econ. 20—Farm Management	3
Geol. 44—Agricultural Geology	3	Agron. 2—Soils	5
M.E. 31—Mechanics of Machinery	5	M.E. 10—Thermodynamics	3
T.A.M. 2—Analyt. Mech. (Dynamics)	3	M.E. 40—Mech. Eng. Design	3
T.A.M. 3—Resistance of Materials	3	M.E. 85—Pattern and Foundry Lab.	3
T.A.M. 63—Res. of Materials Lab.	1		
<i>Total</i>	18	<i>Total</i>	17

CONSTRUCTION AND DRAINAGE OPTION

C.E. 15—General Surveying	3	Agr. Econ. 20—Farm Management	3
C.E. 35—Plain Concrete	2	Agr.E. 12—Farm Utilities	3
Econ. 2—Elements of Economics	3	Agron. 2—Soils	5
Geol. 44—Agricultural Geology	3	C.E. 61—Structural Stresses	4
T.A.M. 2—Analyt. Mech. (Dynamics)	3	T.A.M. 4—Hydraulics	2
T.A.M. 3—Resistance of Materials	3	T.A.M. 64—Hydraulics Laboratory	1
T.A.M. 63—Res. of Materials Lab.	1		
<i>Total</i>	18	<i>Total</i>	18

Fourth Year

MACHINERY AND POWER OPTION

Agr.E. 43—Farm Power	3	Agr.E. 44—Design of Agricultural Machinery	3
Agr.E. 99—Inspection Trip	0	Agr.E. 51—Special Problems	3
E.E. 11a—D.C. and A.C. Circuits	3	E.E. 12a—D.C. and A.C. Apparatus	3
E.E. 11b—D.C. and A.C. Laboratory	1	E.E. 12b—D.C. and A.C. Laboratory	1
M.E. 41—Mech. Eng. Design	4	M.E. 89—Heat Treatment of Metals	3
M.E. 87—Machine Tool Lab.	3	Approved Elective	5
Approved Elective	3		
<i>Total</i>	17	<i>Total</i>	18

CONSTRUCTION AND DRAINAGE OPTION

Agr.E. 42—Hydraulics of Soil and Water Conservation	3	Agr.E. 51—Special Problems	3
Agr.E. 45—Advanced Farm Structures	3	C.E. 64—Structural Design	5
Agr.E. 99—Inspection Trip	0	C.E. 90—Contracts and Specifications	2
Arch. 43—Materials and Methods of Construction; or C.E. 51—Drainage and Flood Control	3	Approved Elective	7
C.E. 62—Structural Analysis	3		
C.E. 63—Elem. Structural Design	2		
E.E. 4a—D.C. and A.C. Circuits and Machines	2		
E.E. 4b—D.C. and A.C. Circuits and Machines Lab.	1		
<i>Total</i>	17	<i>Total</i>	17

Curriculum in Ceramic Engineering

For the Degree of Bachelor of Science in Ceramic Engineering

First Year

Common Program for Freshmen (page 181), except that Chem. 5 and Math. 10a-10b are substituted for Chem. 4 and Math. 2, 4, and 6a.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Cer.E. 31—Intro. to Ceramic Eng.....	3	Cer.E. 32—Ceramic Processes and Equipment	3
Chem. 23a—Quantitative Analysis.....	5	Geol. 20—General Mineralogy.....	3
Math. 8a—Calculus.....	3	Math. 8b—Calculus.....	3
Phys. 1a—General Physics.....	4	Phys. 1b—General Physics.....	4
Phys. 3a—Physics Laboratory.....	1	Phys. 3b—Physics Laboratory.....	1
Physical Education.....	1	T.A.M. 1—Analyt. Mech. (Statics).....	2
Military Science (for Men).....	1	Physical Education.....	1
		Military Science (for Men).....	1
<i>Total</i>	18	<i>Total</i>	18

Third Year

Cer.E. 33—Ceramic Technology.....	5	Cer.E. 34—Ceramic Technology.....	5
Cer.E. 35—Principles of Drying.....	3	Cer.E. 36—Kilns, Furnaces, and Firing Operations.....	3
Chem. 48a—Elem. Phys. Chem.....	3	Cer.E. 37—Pyrometry.....	2
T.A.M. 3—Resistance of Materials.....	3	Phys. 16—Heat.....	3
T.A.M. 63—Res. of Materials Lab.....	1	Technical Elective.....	2 or 3
Approved Elective.....	3	Approved Elective.....	3
<i>Total</i>	18	<i>Total</i>	18 or 19

Fourth Year

Cer.E. 38—Dryer and Furnace Design.....	2	Cer.E. 39—Ceramic Eng. Design.....	3
Cer.E. 40—Ceramic Bodies and Glazes.....	5	Cer.E. 41—Refractories.....	2
E.E. 4a—D.C. and A.C. Circuits and Machines.....	2	E.E. 5a—Application of Electrical Equipment.....	2
E.E. 4b—D.C. and A.C. Circuits and Machines Lab.....	1	E.E. 5b—Electrical Equipment Lab.....	1
Technical Elective.....	5	Technical Elective.....	5 or 4
Approved Elective.....	3	Approved Elective.....	3
Inspection Trip.....	0		
<i>Total</i>	18	<i>Total</i>	16 or 15

Curriculum in Chemical Engineering

For the Degree of Bachelor of Science in Chemical Engineering

This curriculum is administered by the College of Liberal Arts and Sciences.
See page 238.

Curriculum in Civil Engineering¹

For the Degree of Bachelor of Science in Civil Engineering

First Year

Common Program for Freshmen (page 181).

C.E. 1, 2, and one hour of C.E. 3 are required courses which will be taught only at the summer surveying camp following the freshman year.

¹ For students graduating in 1948 and thereafter. Students graduating in 1946 and 1947 should follow the curriculum described in the *Annual Register* for 1945-1946.

CIVIL ENGR

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
C.E. 3a—Route Surveying	3	C.E. 35—Plain Concrete	2
C.E. 60—Bridge and Bldg. Constr.	3	C.E. 36—Construction Materials	1
Math. 7—Differential Calculus	5	Geol. 43—Engineering Geology ¹	3
Phys. 1a—General Physics	4	Math. 9—Integral Calculus	3
Phys. 3a—Physics Laboratory	1	Phys. 1b—General Physics	4
Physical Education	1	Phys. 3b—Physics Laboratory	1
Military Science (for Men)	1	T.A.M. 1—Analytical Mech. (Statics)	2
		Physical Education	1
		Military Science (for Men)	1
<i>Total</i>	<u>18</u>	<i>Total</i>	<u>18</u>

NOTE: Special third and fourth year curricula are available so that transfer students who have credit in all of the subjects included in the first and second year curricula except C.E. 1, 2, 60 and T.A.M. 1 can complete the requirements for the bachelor's degree in two years if they present an equivalent amount of appropriate credit.

Third Year

C.E. 20—Highways	3	C.E. 62—Structural Analysis	3
C.E. 30—Highway Materials Lab.	1	C.E. 63—Elem. Structural Design	2
C.E. 61—Structural Stresses	4	M.E. 1—Steam, Air, & Gas Machinery	3
E.E. 4a-4b—D.C. and A.C. Circuits and Machines, with Laboratory; <i>or</i> Approved Elective	3	T.A.M. 5—Mechanics of Fluids	3
T.A.M. 2—Analyt. Mech. (Dynamics)	3	T.A.M. 65—Fluid Mechanics Lab.	1
T.A.M. 3—Resistance of Materials	3	Approved Elective	3 or 2
T.A.M. 63—Res. of Mat. Lab.	1	Non-technical Elective	3
<i>Total</i>	<u>18</u>	<i>Total</i>	<u>18 or 17</u>

NOTE: The first three years are the same for all options and the Sanitary Engineering curriculum except as noted below for the sixth semester. These substitutions should be made by the students concerned.

Replace Approved Elective with Aero.E. 1 in the Aircraft Structures Option, C.E. 90 in the Transportation Option, and Chem. 22 (part) in the Sanitary Engineering curriculum.

Replace Non-technical Elective with Aero.E. 3 in the Aircraft Structures Option and Chem. 22 (part) in the Sanitary Engineering curriculum.

Fourth Year

GENERAL OPTION

C.E. 40—Water Supply	4	C.E. 41—Sewerage	3
C.E. 64—Structural Design	5	C.E. 66—Earth & Masonry Structures	3
C.E. 90—Contracts & Specifications	2	C.E. 94—Professional Practice	0
C.E. 93—Professional Practice	0	Technical Elective	5
C.E. 99—Inspection Trip	0	Approved Elective	3
Technical Elective	3		
<i>Total</i>	<u>14</u>	<i>Total</i>	<u>14</u>

AIRCRAFT STRUCTURES OPTION

C.E. 48—Water Supply & Sewerage	4	C.E. 87—Adv. Airplane Structures	3
C.E. 64—Structural Design	5	C.E. 88—Static Testing	2
C.E. 66—Earth & Masonry Structures	3	C.E. 90—Contracts & Specifications	2
C.E. 86—Adv. Airplane Structures	3	C.E. 94—Professional Practice	0
C.E. 93—Professional Practice	0	Electrical Controls	3
C.E. 99—Inspection Trip	0	Approved Elective	3
<i>Total</i>	<u>15</u>	<i>Total</i>	<u>13</u>

¹ Eight hours of credit in foreign language (French, German, or Spanish) may be substituted for Geol. 43, 3 hours, and approved and non-technical electives, 5 hours.

HYDRAULIC OPTION

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
C.E. 48—Water Supply & Sewerage . . .	4	C.E. 51—Drainage & Flood Control . . .	3
C.E. 50—Hydrology . . .	3	C.E. 52—Water Resources, Planning and Development . . .	3
C.E. 64—Structural Design . . .	5	C.E. 55—Water Power . . .	3
C.E. 90—Contracts & Specifications . . .	2	C.E. 66—Earth & Masonry Structures . .	3
C.E. 93—Professional Practice . . .	0	C.E. 94—Professional Practice . . .	0
C.E. 99—Inspection Trip . . .	0	Approved Elective . . .	2
<i>Total</i> . . .	14	<i>Total</i> . . .	14

For curriculum in Sanitary Engineering see page 194.

STRUCTURAL OPTION

C.E. 64—Structural Design . . .	5	C.E. 48—Water Supply & Sewerage . . .	4
C.E. 66—Earth & Masonry Structures . .	3	C.E. 65—Structural Design . . .	4
C.E. 67—Statically Indet. Struct. . . .	3	C.E. 68—Statically Indet. Struct. . . .	3
C.E. 93—Professional Practice . . .	0	C.E. 90—Contracts & Specifications . .	2
C.E. 99—Inspection Trip . . .	0	C.E. 91—Estimates and Costs . . .	2
Approved Elective . . .	3	C.E. 94—Professional Practice . . .	0
<i>Total</i> . . .	14	<i>Total</i> . . .	15

TRANSPORTATION OPTION

C.E. 64—Structural Design . . .	5	C.E. 24—Airport Design . . .	3
C.E. 66—Earth & Masonry Structures . .	3	C.E. 48—Water Supply & Sewerage . . .	4
C.E. 93—Professional Practice . . .	0	C.E. 94—Professional Practice . . .	0
C.E. 99—Inspection Trip . . .	0	Electives . . .	8
Electives . . .	6		
<i>Total</i> . . .	14	<i>Total</i> . . .	15

NOTE: All students registered in the Transportation Option must take at least eight hours in the transportation group of electives below.

It is recommended that students interested in airway transportation take B.O.O. 50 and C.E. 6; those interested in highway or railway transportation take C.E. 22 and C.E. 27.

It is recommended that students interested in airway transportation take Geog. 14, Econ. 92 or 95, and approved electives 2 hours; those interested in highway transportation take C.E. 23, 29, and approved electives 3 hours; and those interested in railway transportation take C.E. 25, 26, and 29.

Curriculum in Electrical Engineering¹

For the Degree of Bachelor of Science in Electrical Engineering

First Year

Common Program for Freshmen (page 181).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
E.E. 20a—Illum. Eng. and Secondary Power Distribution . . .	3	E.E. 21—Introd. to Electrodynamics . . .	2
Math. 7—Calculus . . .	5	Math. 9—Calculus . . .	3
M.E. 87—Mach. Tool Lab.; <i>or</i> Speech 1—Effective Speaking ² . . .	3	Speech 1—Effective Speaking; ² <i>or</i> M.E. 87—Mach. Tool Lab. . .	3
Phys. 1a—General Physics . . .	4	Phys. 1b—General Physics . . .	4
Phys. 3a—Physics Lab. . .	1	Phys. 3b—Physics Lab. . .	1
Physical Education . . .	1	T.A.M. 1—Analyt. Mech. (Statics) . . .	2
Military Science (for Men) . . .	1	T.A.M. 2—Analyt. Mech. (Dynamics) . .	3
		Physical Education . . .	1
		Military Science (for Men) . . .	1
<i>Total</i> . . .	18	<i>Total</i> . . .	20

¹ For students graduating in 1948 and thereafter. Students graduating in 1946 and 1947 should follow the curriculum described in the *Annual Register* for 1945-1946.

² Students intending to select the option in Illumination take Speech 1 the first semester and Physiology 5 the second semester.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
E.E. 30a—Introd. to Circuit Analysis	4	For this and succeeding semesters, courses are arranged in options in the general fields of Communication and Electronics, Illumination, and Power.	
E.E. 30b—Circuit Lab.	2		
Math. 19—Diff. Equations and Orthogonal Functions	3		
M.E. 10—Thermodynamics	3		
T.A.M. 3—Resistance of Materials	3		
T.A.M. 63—Res. of Mat. Lab.	1		
Non-technical Elective ¹	3		
<i>Total</i>	19		

COMMUNICATION AND ELECTRONICS OPTION

Third Year

SECOND SEMESTER		HOURS	
E.E. 32a—Electrical Machinery	4	E.E. 48a—Communication Networks and Lines	3
E.E. 32b—Electrical Machinery Lab.	2	E.E. 48b—Communication Lab.	1
E.E. 40a—Electronics	3	Non-technical Elective ²	3
E.E. 40b—Electronics Lab.	1	<i>Total</i>	17

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
E.E. 31b—Measurements of Elec. Eng.	3	E.E. 52a—Seminar	1
E.E. 51a—Seminar	1	E.E. 63a—Communication Eng. II	3
E.E. 61a—Communication Eng. I	3	E.E. 63b—Communication Eng. Lab.	1
E.E. 61b—Communication Eng. Lab.	1	E.E. 64c—Communication Design	3
E.E. 62a—Electronics	3	Approved Elective	4
E.E. 62b—Electronics Lab.	1	Non-technical Elective ²	3
E.E. 69a—Economic Design of Elec. Systems	3		
E.E. 99—Inspection Trip	0		
Non-technical Elective ²	3		
<i>Total</i>	18	<i>Total</i>	15

ILLUMINATION OPTION

Third Year

SECOND SEMESTER		HOURS	
E.E. 32a—Electrical Machinery	4	Physics 17 or E.E. 39a—Illumination Engineering Design	4
E.E. 32b—Electrical Machinery Lab.	2	Art 12—Survey of Art History	3
Psych. 2—General Psychology	4	<i>Total</i>	17

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
B.O.O. 7—Salesmanship	2	B.O.O. 17—Problems in Sales Adm.	2
E.E. 51a—Seminar	1	E.E. 31b—Measurements in Elec. Eng.	3
E.E. 57a—Princ. of Illum. Eng.	4	E.E. 52a—Seminar	1
E.E. 57b—Illum. Design Lab.	1	E.E. 58a—Illum. Design and Economics	4
E.E. 60a—Electronics	4	E.E. 58b—Illum. Design Lab.	1
E.E. 60b—Electronics Lab.	1	E.E. 59a—Illumination Sources	3
E.E. 99—Inspection Trip	0	Non-technical Elective ²	3
Non-technical Elective ²	3	<i>Total</i>	17
<i>Total</i>	16		

¹ Students intending to select the option in Illumination take Art 11.² From courses approved by Department.

POWER OPTION

Third Year

SECOND SEMESTER

E.E. 31b—Elec. Eng. Measurements... 3	M.E. 3—Power Plant Engineering... 3
E.E. 35a—Alternating Current Apparatus... 4	M.E. 61—Mech. Eng. Laboratory... 2
E.E. 35b—Alternating Current Apparatus Lab... 2	Non-technical Elective ¹ ... 3
	<i>Total</i> 17

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
E.E. 50a—Alternating Current Apparatus... 3		E.E. 52a—Seminar... 1	
E.E. 50b—Alternating Current Lab... 2		E.E. 53a—Direct Current Apparatus... 3	
E.E. 51a—Seminar... 1		E.E. 53b—Direct Current Dynamo Lab... 2	
E.E. 55c—Electrical Design... 3		E.E. 69a—Economic Design of Elec. Systems... 3	
E.E. 60a—Electronics... 4		Approved Elective... 4	
E.E. 60b—Electronics Lab... 1		Non-technical Elective ¹ ... 3	
E.E. 99—Inspection Trip... 0			
Non-technical Elective ¹ ... 3			
<i>Total</i> 17		<i>Total</i> 16	

Curriculum in Engineering Physics

For the Degree of Bachelor of Science in Engineering Physics

The purpose of this curriculum is to prepare students for investigations in engineering problems calling for a knowledge of physics and mathematics or chemistry, and for positions in certain industries which prefer men with a thorough education in basic science.

Students in the Engineering Physics curriculum, when registering for advanced undergraduate courses in physics at any stage in that curriculum, must have a grade average of at least 3.5 in all subjects, exclusive of the basic courses in military training and physical education, and a combined grade average of at least 3.5 in all subjects in mathematics and physics taken prior to such registration. Transfer students must have a corresponding record in the institution from which they transfer, and must maintain such status at the University of Illinois.

First Year

Common Program for Freshmen (page 181), except that substitution of Chem. 6 for Chem. 4 is advised.

Second Year²

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
German or Approved Elective... 4		German or Approved Elective... 4	
Math. 7—Differential Calculus... 5		Math. 9—Integral Calculus... 3	
Phys. 1a—General Physics... 4		Phys. 1b—General Physics... 4	
Phys. 3a—Physics Laboratory... 1		Phys. 3b—Physics Laboratory... 1	
Physical Education... 1		T.A.M. 1—Analytical Mech. (Statics)... 2	
Military Science (for Men)... 1		Physical Education... 1	
Approved Elective... 3		Military Science (for Men)... 1	
		Approved Elective... 3	
<i>Total</i> 19		<i>Total</i> 19	

¹ From courses approved by Department.

² The election of Chem. 10, 24, and 34 is advised. Students wishing to emphasize chemistry may substitute chemistry electives for E.E. 30a-30b. Students wishing to emphasize electrical engineering should elect E.E. 48a-48b, 61a-61b, and 63a-63b in their senior year. Students wishing to emphasize geophysics should elect most or all of the technical options in geology. Five hours must be approved non-technical courses.

Third Year¹

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
E.E. 30a—Intro. to Circuit Analysis	4		Phys. 46a—Vacuum Tubes ⁴	3	
E.E. 30b—Circuit Lab.	2		Phys. 60—Heat ⁵	3	
German <i>or</i> Approved Elective	4		German <i>or</i> Approved Elective	4	
Math. 18—Advanced Calculus ²	3		Math. 19—Advanced Calculus ²	3	
Phys. 20a—Theoretical Mechanics	3		Phys. 20b—Theoretical Mechanics	3	
Phys. 40a—Elec. and Magnetism ³	3		Phys. 40b—Elec. and Magnetism ³	3	
<i>Total</i>	19		<i>Total</i>	19	

Fourth Year¹

Chem. 40—Physical Chemistry	3		Phys. 71b—Light	2	
Phys. 71a—Light	2		Phys. 72b—Light Laboratory	2	
Phys. 72a—Light Laboratory	2		Phys. 199—Colloquium	0	
Phys. 46b—Vacuum Tubes ⁴	3		Approved Elective ⁷	3	
Phys. 80—Atomic Physics; <i>or</i> Approved Elective	3		Technical Option ⁶	8	
Phys. 199—Colloquium	0				
Technical Option ⁶	3				
<i>Total</i>	16		<i>Total</i>	15	

Curriculum in General Engineering

For the Degree of Bachelor of Science in General Engineering

This curriculum is intended for students who do not wish to pursue the more specialized engineering curricula, but who wish to secure a sound education in engineering principles and their application. Fifteen hours work in economics, business law, etc., are required, and twelve hours of free electives are allowed. The mechanical engineering design sequence of courses, namely, M.E. 31, 40, and 41, plus two hours of approved electives will be accepted in place of C.E. 61, 62, 63, and 64 in the junior and senior years. The degree of Bachelor of Science in General Engineering is awarded on completion of the curriculum.

First Year

Common Program for Freshmen (page 181).

Second Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
Econ. 2—Elements of Economics	3		Geol. 43—Engineering Geology	3	
Math. 7—Differential Calculus	5		Math. 9—Integral Calculus	3	
M.E. 85—Pattern and Foundry Lab.;			C.E. 15—General Surveying; <i>or</i> M.E.		
<i>or</i> C.E. 15—General Surveying	3		85—Pattern and Foundry Lab.	3	
Phys. 1a—General Physics	4		Phys. 1b—General Physics	4	
Phys. 3a—Physics Laboratory	1		Phys. 3b—Physics Laboratory	1	
Physical Education	1		T.A.M. 1—Analytical Mech. (Statics)	2	
Military Science (for Men)	1		Physical Education	1	
			Military Science (for Men)	1	
<i>Total</i>	18		<i>Total</i>	18	

¹ The election of Chem. 10, 24, and 34 is advised. Students wishing to emphasize chemistry may substitute chemistry electives for E.E. 30a-30b. Students wishing to emphasize electrical engineering should elect E.E. 48a-48b, 61a-61b, and 63a-63b in their senior year. Students wishing to emphasize geophysics should elect most or all of the technical options in geology. Five hours must be approved non-technical courses.

² Math. 16a-16b or Math. 71a-71b may be substituted for Math. 18 and 19.

³ Physics 44 and 30 may be substituted for Physics 40a-40b.

⁴ Students who wish to take E.E. 63a-63b should register for E.E. 48a-48b concurrently with Physics 46a; E.E. 61a-61b may be taken concurrently with Physics 46b. This allows E.E. 63a-63b to be taken in the second semester of the senior year.

⁵ M.E. 10 or 13 may be substituted for Physics 60.

⁶ Technical Options: Chem. 10, 24, 34, 36, 37, 41, 42, 43, 44; E.E. 32a-32b, 48a-48b, 61a-61b, 62a-62b, 63a-63b; Geol. 2a, 38, 43, 61; Math. 21, 22, 52, 53, 70, 71, 72; M.E. 35, 36, 87; any courses in physics or astronomy; T.A.M. 2, 3, 63.

⁷ Physics 81 is recommended.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Econ. 35—Corporation Finance.....	3	C.E. 61—Structural Stresses.....	4
E.E. 11a—D.C. and A.C. Circuits.....	3	E.E. 12a—D.C. and A.C. Apparatus...3	
E.E. 11b—D.C. and A.C. Laboratory...1		E.E. 12b—D.C. and A.C. Laboratory...1	
M.E. 87—Machine Tool Laboratory...3		M.E. 10—Thermodynamics.....	3
T.A.M. 2—Analyt. Mech. (Dynamics)...3		T.A.M. 4—Hydraulics.....	2
T.A.M. 3—Resistance of Materials...3		T.A.M. 64—Hydraulics Laboratory...1	
T.A.M. 63—Res. of Materials Lab.....1		Approved Elective ¹	4
<i>Total</i>	17	<i>Total</i>	18

Fourth Year

C.E. 62—Structural Analysis.....	3	C.E. 64—Structural Design.....	5
C.E. 63—Structural Design.....	2	Econ. 3—Money, Credit, Banking...3	
C.E. 99—Inspection Trip.....	0	Eng. 92—Engineering Law.....	3
Econ. 41—Labor Problems; <i>or</i>		M.E. 64—Mechanical Engineering	
Eng. 39—Industrial Relations.....	3	Laboratory.....	3
M.E. 3—Power Plant Engineering.....	3	Approved Elective ¹	4
Met.E. 30—Engineering Metallurgy...3			
Approved Elective ¹	4		
<i>Total</i>	18	<i>Total</i>	18

Curriculum in Mechanical Engineering

For the Degree of Bachelor of Science in Mechanical Engineering

First Year

Common Program for Freshmen (page 181).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Approved Elective ²	3	Approved Elective ²	4
Math. 7—Differential Calculus.....	5	Math. 9—Integral Calculus.....	3
M.E. 85—Pattern and Foundry Lab.;		M.E. 87—Machine Tool Lab.; <i>or</i> M.E.	
<i>or</i> M.E. 87—Machine Tool Lab.....	3	85—Pattern and Foundry Lab.....	3
Phys. 1a—General Physics.....	4	Phys. 1b—General Physics.....	4
Phys. 3a—Physics Laboratory.....	1	Phys. 3b—Physics Laboratory.....	1
Physical Education.....	1	T.A.M. 1—Analytical Mech. (Statics)...2	
Military Science (for Men).....	1	Physical Education.....	1
		Military Science (for Men).....	1
<i>Total</i>	18	<i>Total</i>	19

Third Year

M.E. 13—Thermodynamics.....	3	M.E. 6—Power Plant Equipment.....	4
M.E. 31—Mechanics of Machinery...5		M.E. 14—Thermodynamics.....	3
T.A.M. 2—Analyt. Mech. (Dynamics)...3		M.E. 40—Mech. Engineering Design...3	
T.A.M. 63—Res. of Materials Lab...1		M.E. 88—Machine Tool Laboratory...3	
Non-technical Elective ²	3	Non-technical Elective ²	2
<i>Total</i>	18	<i>Total</i>	18

¹ Eight hours or more in a foreign language (French, German, or Spanish) may be substituted for an equal number of hours of approved electives.

² Special attention is called to Engineering 10, 20, 39, 40, 41, and 92.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
E.E. 11a—D.C. and A.C. Circuits	3	E.E. 12a—D.C. and A.C. Apparatus . . .	3
E.E. 11b—D.C. and A.C. Laboratory . . .	1	E.E. 12b—D.C. and A.C. Laboratory . . .	1
M.E. 41—Mech. Eng. Design	4	M.E. 28—Heating, Ventilating, and Air Conditioning	4
M.E. 65—Mech. Eng. Lab.	3	M.E. 52—Power Plant Design	3
M.E. 89—Heat Treatment of Metals; or Non-technical Elective ¹	3	M.E. 89—Heat Treatment of Metals; or Non-technical Elective ¹	3
M.E. 99—Inspection Trip	0	Technical Option	3
Technical Option	3	<i>Total</i>	17
<i>Total</i>	17		

**OPTIONS FOR THE CURRICULUM IN
MECHANICAL ENGINEERING**

NOTE: Curriculum options are groups of related courses which can be logically taken together and thus emphasize certain subdivisions, or fields, of mechanical engineering.

PETROLEUM PRODUCTION ENGINEERING

Substitute in Mechanical Engineering curriculum as follows:

Second Year

Geol. 43 for Approved Elective	3	Geol. 2a for Approved Elective	4
--	---	--	---

Third Year

C.E. 15 for Non-technical Elective	3
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Fourth Year

M.E. 35, T.A.M. 4 and 64, and Geol. 61a for M.E. 41 and Technical Option	9	M.E. 36, Geol. 60b and 61b for M.E. 28 and 52 and Technical Option	8
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RAILWAY MECHANICAL ENGINEERING

Substitute in Mechanical Engineering curriculum as follows:

Fourth Year

M.E. 5 for Technical Option	3	M.E. 8 for Technical Option	3
		M.E. 54 for M.E. 52	3

TECHNICAL OPTIONS FOR THE CURRICULUM IN MECHANICAL ENGINEERING**Fourth Year**

C.E. 89—Structural Engineering	3	T.A.M. 4 and 64—Hydraulics	3
M.E. 5—Locomotives	3	T.A.M. 41—Advanced Mechanics	3
M.E. 7—Int. Combustion Engines	3	T.A.M. 42—Engineering Materials	3
M.E. 8—Railway Operation	3	T.A.M. 43—Hydraulics Laboratory	3
M.E. 15—Engineering Thermody- namics	3	T.A.M. 44—Testing Materials	3
M.E. 17—Refrigeration Engineering	3	T.A.M. 47—Engineering Analysis	3
M.E. 35—Petroleum Production Eng.	3	T.A.M. 48—Engineering Analysis	3
M.E. 36—Petroleum Production Eng.	3	T.A.M. 49—Advanced Dynamics and Vibrations	3
M.E. 54—Locomotive and Car Design	3	T.A.M. 50—Advanced Dynamics and Vibrations	3
M.E. 57—Industrial Quality Control	3		
M.E. 84—Welding Engineering	3		

Curriculum in Metallurgical Engineering

For the Degree of Bachelor of Science in Metallurgical Engineering

This curriculum is intended for the training of industrial metallurgists and those who wish to engage in advanced study and research, either in operational processes or in various problems involving physical and chemical phases of metallurgy.

¹ Special attention is called to Engineering 10, 20, 39, 40, 41, and 92.

First Year

Common Program for Freshmen (page 181), except that Chem. 5, G.E.D. 6 are substituted for Chem. 4, and G.E.D. 1.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 23a—Quantitative Analysis.....	5	Math. 9—Calculus.....	3
Math. 7—Calculus.....	5	Phys. 1b—General Physics.....	4
Phys. 1a—General Physics.....	4	Phys. 3b—Physics Lab.....	1
Phys. 3a—Physics Lab.....	1	Met.E. 1—Intro. to Metallurgy.....	3
Military Science (for Men).....	1	T.A.M. 1—Analyt. Mech. (Statics).....	2
Physical Education.....	1	Military Science (for Men).....	1
		Physical Education.....	1
		Approved Elective ¹	3
<i>Total</i>	17	<i>Total</i>	18

Third Year

Chem. 48a—Physical Chemistry.....	3	Chem. 48b—Physical Chemistry.....	3
Met.E. 10—Princ. of Phys. Metallurgy.....	4	Met.E. 13—Metallography and Heat Treatment of Iron and Steel.....	3
Met.E. 11—Met. of Iron and Steel.....	3	Met.E. 14—Ferrous Met. Lab.....	2
Met.E. 12—Met. Calculations.....	2	Met.E. 16—Non-ferrous Prod. Met.....	3
Cer.E. 37—Pyrometry.....	2	T.A.M. 3—Resistance of Materials.....	3
Approved Elective ¹	3	T.A.M. 63—Res. of Materials Lab.....	1
		Approved Elective ¹	3
<i>Total</i>	17	<i>Total</i>	18

Fourth Year

E.E. 4a—D.C. and A.C. Circuits and Machines.....	2	E.E. 5a—Applications of Elec. Equip...2	
E.E. 4b—A.C. and D.C. Circuits and Machines Lab.....	1	E.E. 5b—Applications of Elec. Equip. Lab.....	1
Met.E. 20—Non-ferrous Metallography.....	3	Met.E. 23—Met. of Deep Drawing and Pressing.....	3
Met.E. 21—Non-ferrous Met. Lab.....	2	Met.E. 24—Alloy Steels.....	3
Met.E. 22—Electrometallurgy.....	3	Met.E. 26—Adv. Phys. Met. Lab.....	3
Met.E. 90—Seminar.....	1	Met.E. 91—Seminar.....	1
T.A.M. 44—Adv. Lab. in Testing Materials.....	3	Approved Elective ¹	6
Met.E. 99—Inspection Trip.....	0		
Approved Elective ¹	3		
<i>Total</i>	18	<i>Total</i>	19

Curriculum in Mining Engineering

For the Degree of Bachelor of Science in Mining Engineering

First Year

Common Program for Freshmen (page 181).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Geol. 43—Engineering Geology.....	3	Geol. 20—General Mineralogy.....	3
Math. 7—Calculus.....	5	Math. 9—Calculus.....	3
Min.E. 1—Elements of Mining.....	4	Min.E. 2—Mining Methods.....	4
Phys. 1a—General Physics.....	4	Phys. 1b—General Physics.....	4
Phys. 3a—Physics Laboratory.....	1	Phys. 3b—Physics Laboratory.....	1
Physical Education.....	1	T.A.M. 1—Analyt. Mech. (Statics).....	2
Military Science (for Men).....	1	Physical Education.....	1
		Military Science (for Men).....	1
<i>Total</i>	19	<i>Total</i>	19

¹ Eight hours of foreign language (French, Spanish, German or Russian) may be substituted for 8 hours of approved elective.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
C.E. 15—General Surveying.....	3	Econ. 41—Introd. to Labor Problems; or Econ. 43—Personnel Adm.;	
Econ. 2—Elements of Econ.; or Advanced Military.....	3	or Advanced Military.....	3
Min.E. 10—Haulage, Hoisting, and Pumping.....	4	Geology Elective.....	2 or 3
T.A.M. 2—Analyt. Mech. (Dynamics)...	3	M.E. 62—Mech. Eng. Lab.....	3
T.A.M. 4—Hydraulics.....	2	Min.E. 11—Mine Ventilation.....	2
T.A.M. 64—Hydraulics Lab.....	1	Min.E. 12—Mine Surveying.....	2
		T.A.M. 3—Resistance of Materials.....	3
		T.A.M. 63—Res. of Materials Lab.....	1
<i>Total</i>	16	<i>Total</i>	16 or 17

SUMMER

<i>First Week</i>	<i>Second and Third Weeks</i>
Min.E. 61—First Aid and Mine Rescue... 1	Min.E. 62—Summer Mine Surveying... 2

Fourth Year

C.E. 89—Structural Engineering; or M.E. 87—Machine Tool Lab.....	3	E.E. 12a—D.C. and A.C. Apparatus... 3	
E.E. 11a—D.C. and A.C. Circuits.....	3	E.E. 12b—D.C. and A.C. Lab.....	1
E.E. 11b—D.C. and A.C. Lab.....	1	Met.E. 30—Engineering Metallurgy... 3	
Min.E. 20—Mine Administration.....	3	Min.E. 23—Examination and Valuation.....	2
Min.E. 21—Mineral Dressing.....	3	Min.E. 24—Mining Design.....	3
Min.E. 22—Fuels.....	3	Min.E. 25—Coal Preparation.....	2
Min.E. 99—Inspection Trip.....	0	Approved Elective.....	3 or 4
Approved Elective.....	3		
<i>Total</i>	19	<i>Total</i>	17 or 18

Curriculum in Public Health Engineering

For the Degree of Bachelor of Science in Public Health Engineering

First Four Years

The first four years are the same as the Sanitary Option in Civil Engineering or the Sanitary Engineering curriculum. Students who have received the bachelor's degree in sanitary engineering or its equivalent at a recognized college of engineering are admitted to the fifth year in this curriculum providing they have had the necessary prerequisites for the particular courses required at the University of Illinois. The work for the first semester of the fifth year is offered at Urbana, and the second half of the year is offered at the College of Medicine in Chicago.

Fifth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 47—Physical Chemistry.....	4	C.E. 190—Public Health Engineering... 3	
Chem. 86a—Chem. of Water Treatment... 3		P.H. 1—Bact. and Protozoology..... 6	
C.E. 45—Public Health Engineering... 3		P.H. 4—Preventive Medicine..... 2	
Zool. 1—General Zoology.....	4	P.H. 12—Industrial Hygiene..... 1	
Approved Electives (D.H. 10, Entom. 2, Math. 22, M.E. 25).....	5	P.H. 50—Public Health..... 1	
		P.H. 73—Advanced Public Health... 2	
		Pharmacology or Approved Elective... 3	
<i>Total</i>	19	<i>Total</i>	18

Curriculum in Sanitary Engineering

For the Degree of Bachelor of Science in Sanitary Engineering

First Three Years

The first three years are the same as the curriculum in Civil Engineering except that the substitutions shown on page 185 should be made in the sixth semester.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Bact. 5a—Introd. Bacteriology	3	Chem. 33—Elem. Organic Chemistry . . .	5
C.E. 40—Water Supply	4	C.E. 41—Sewerage	3
C.E. 45—Public Health Engineering . . .	3	C.E. 44—Water & Sewage Treatment . .	3
C.E. 64—Structural Design	5	C.E. 66—Earth & Masonry Structures . .	3
C.E. 93—Professional Practice	0	C.E. 94—Professional Practice	0
C.E. 99—Inspection Trip	0		
<i>Total</i>	15	<i>Total</i>	14

The College of Fine and Applied Arts

ART, ARCHITECTURE, LANDSCAPE ARCHITECTURE, AND MUSIC are taught in the College of Fine and Applied Arts. The professional curricula in all these subjects admit freshmen and consist of four years of study, with options that allow specialization for various purposes. In each curriculum the students are required to take certain basic and cultural courses in literature, language, and other subjects essential to a liberal education, and are permitted to elect additional courses according to individual interests.

For students enrolled in other colleges and schools at Urbana, the College of Fine and Applied Arts offers introductory courses designed to increase aesthetic appreciation and to portray the role of the arts in civilization.

For *admission*, see page 99; for general University requirements for *graduation*, see page 114; for regulations concerning *unclassified students*, see page 106; for *museums and collections*, see page 96; for *clubs and societies* auxiliary to the curricula, see page 129; for *prizes and awards*, see page 136; for *fees*, see page 118; for the *Bureau of Community Planning*, see page 489; for *special conferences and short courses*, see page 476.

Lorado Taft Lectureship

Alumni and friends of the University in 1930 endowed the Lorado Taft Lectureship in Art, for the maintenance of an annual series of lectures by one or more persons eminent in some field of art. From 1930 to the time of his death in 1936, invitations to give certain of these lectures were extended to Professor Taft, who thus continued to serve the University as Non-Resident Professor of Art. Lecturers prominent in the field of art appear in this series each year.

Carnegie Visiting Professorship

In 1939 the Carnegie Corporation established a Visiting Professorship in Art at the University of Illinois, for the support of a prominent artist who will reside on the campus, practice his art, and deliver lectures. There was no appointment for 1946-1947.

Requirements for Graduation

Students who meet the general University requirements with respect to registration, residence, scholarship, fees, hygiene, military science, physical education, and rhetoric, and who maintain a satisfactory record, receive degrees appropriate to the curricula completed.

Architecture.—The curriculum in architecture, with two options, requires 142 semester hours for graduation. The degree of Bachelor of Science in Architecture is awarded on completion of the *general option*, and the degree of Bachelor of Science in Architectural Engineering on completion of the *construction option*.

Art.—Graduation from the curriculum in art requires 130 semester hours. This curriculum has three options: *painting*, *commercial design*, and *industrial design*. The degree of Bachelor of Fine Arts is awarded in the option completed. A curriculum leading to the degree of Bachelor of Fine Arts in Art Education is offered for students preparing to teach art. Graduation requires 130 semester hours in addition to physical education and military science.

Landscape Architecture.—The curricula in landscape architecture and landscape operation require 130 semester hours for graduation. The degree of Bachelor of Fine Arts in Landscape Architecture is conferred on students completing the former curriculum, and the degree of Bachelor of Science in Landscape Operation is conferred on those completing the latter.

Music.—The curriculum in music, with instrumental, voice, or theory major, leads to the degree of Bachelor of Music. This curriculum requires 130 semester hours for graduation, with piano as a major or minor subject. The curriculum in music education leads to the degree of Bachelor of Science in Music Education and requires 130 semester hours in addition to physical education and military science.

Honors at Graduation

The honors awarded at graduation to superior students are designated on the diploma as Honors, High Honors, and Highest Honors. To be considered for honors, a student must have been in residence at the University for at least four semesters, or must have earned in residence a minimum of sixty-five hours credit. For the degree with Honors, the student must have a scholastic average of 4.0; for the degree with High Honors, a scholastic average of 4.25 (for transfer students no more than six hours of "D" in transferred credit); for the degree with Highest Honors, a scholastic average of 4.50 (for transfer students no hours of "D" in transferred credit).

Electives

The electives provided in any curriculum of this college may consist of any courses given in the University and not required in the curriculum, not paralleling the subject matter of required courses, and not open to freshmen. The following, which are open to freshmen, are also acceptable as electives: History 1a, 1b, 2a, 2b, Library Science 12, Mathematics 2, 3, 4, 5, 6, Botany 1a, 1b, Geography 1, Geology 1, Zoology 1.

Requirements in Foreign Language

In curricula where a foreign language is required, a student who has completed one or more high school units of a foreign language beyond the language entrance requirement may be excused from the curricular requirement to the extent that each high school unit is considered the equivalent of four semester hours' credit. Additional elective credit must be supplied for the credit requirement from which the student is excused.

Inspection Trips

Inspection trips are required in the senior year of the curricula in architecture and landscape architecture. The time required is three or four days and the places visited are usually in Chicago. The trips are taken during term time under the supervision of University authorities. Students in certain art classes also make trips to industrial and art centers. (Not required in 1946-1947.)

Departments and Curricula

The College of Fine and Applied Arts consists of the Department of Art, the Department of Architecture, the Department of Landscape Architecture, the School of Music, and the Bureau of Community Planning. The undergraduate curricula, which are described in the following paragraphs, are outlined on subsequent pages.

All departments in the College of Fine and Applied Arts reserve the right to retain, exhibit, and reproduce the work submitted by students for credit in any course.

Architecture.—Since the practice of architecture is so diversified that no one can encompass it in all its details, some degree of specialization is necessary. In order to train future architects two options are offered, the *general option* and the *construction option*. A general understanding of the profession of architecture from the standpoint of design, safety, and economy, and of the architect's duties, is emphasized in both options. The first year of work is identical in both; a field of specialization is selected in the second year.

The *general option* places the major emphasis on architectural design and includes a substantial program in architectural construction. While the aesthetic is emphasized, basic preparation in liberal and scientific fields is required. The aim is to train the student for efficient service as a draftsman or designer in an architectural organization and to provide him with the necessary foundation for future independent practice.

The *construction option* (architectural engineering) offers a major study in building design, a thorough training in all forms of building construction, and emphasizes the structural and mechanical aspects of architecture. As the curriculum includes two years of architectural design, freehand drawing, and the history of architecture, the student who is primarily interested in construction can acquire a considerable knowledge of the artistic and utilitarian phases of planning. This option affords a relatively wide range of elective courses in the social sciences, business, engineering, language, and literature. It also provides sufficient training for independent practice as an architectural engineer. Graduate courses leading to the degree of Master of Science in Architecture or Architectural Engineering are offered under the regulations of the Graduate School.

The Department of Architecture is located in the Building for Architecture and Kindred Subjects, where ample offices, studios, and drafting rooms are provided. The Ricker Library, occupying the second floor of the north wing of this building, includes 19,757 volumes on architecture and the allied arts, together with 18,321 lantern slides, 21,646 mounted photographs and drawings, 11,120 clippings, and 1,269 pamphlets.

Art.—The curriculum in art permits a student to attain a proficiency in art and to secure a liberal education. The first year of the curriculum is basic and cultural, and at the beginning of the second year the student chooses his field of specialization in one of the following options:

The *option in painting* forms a preparation for the following fields of applied art and for related fields: landscape painting, portraiture, illustration, mural decoration.

The *option in industrial design* trains designers for machine industries. This option aims to give the student a firm grasp of the principles of design, to develop in him speed and resourcefulness in expression, and to train him to adapt his knowledge and creative abilities to the conditions under which the designer must work in industry. Students interested in *interior decoration* may secure basic training in the industrial design option.

The *option in commercial design* trains artists in the application of aesthetic principles in the fields of advertising, printing, merchandising, and salesmanship.

The *curriculum in art education* offers specialization in teaching methods, materials, and processes and conforms to the regulations set down by the office of the State Superintendent of Public Instruction. This curriculum, while particularly designed for those students who are primarily interested in the teaching of art, affords preparation for the fields of art supervision and applied design.

The Department of Art has a series of well-equipped and ideally lighted studios and modeling rooms in the Building for Architecture and Kindred Subjects. Additional studios are also maintained in Lincoln Hall, David Kinley Hall, Engineering Hall, and the Civil Engineering Surveying Building.

This department has well-selected collections of models, casts, bronzes, paintings, etchings, and prints, and adequate collections of lantern slides and photographs of famous works of art. The Hall of Casts in the Architecture Building, well stocked with plaster replicas of many of the great works of sculptural art (including many of the masterpieces of Lorado Taft), makes an excellent place for sketching. Professional models are employed as subjects for the classes in drawing, painting, and modeling from life. Art students share in the use of the Ricker Library, which includes the literature of art as well as of architecture.

Courses in the history of art, drawing, crafts, and design are open to students from other colleges of the University.

Graduate courses leading to the degree of Master of Fine Arts in Art Education are offered under the regulations of the Graduate School.

Landscape Architecture.—The instructional work in landscape architecture consists of a four-year curriculum leading to the degree of Bachelor of Fine Arts in Landscape Architecture, and is designed to prepare the student for professional practice by providing a carefully balanced program of technical courses and of basic courses in the humanities. A four-year curriculum in landscape operation, leading to the degree of Bachelor of Science in Landscape Operation, is offered for students preparing to enter the contracting and maintenance branches of landscape architecture. Courses in the appreciation of landscape architecture and planning are offered for students in other colleges of the University.

Graduate courses leading to the degree of Master of Fine Arts in Landscape Architecture or Master of Science in City Planning are offered under the regulations of the Graduate School.

The Department of Landscape Architecture occupies quarters in Mumford Hall. The equipment includes drafting rooms, a seminar room, a well-equipped room for making landscape models, and an excellent library. The collections of trees, shrubs, and other plants growing on the campus and about residences in the community, as well as a fine herbarium, furnish materials for the study of plants and of planting design.

Music.—The School of Music offers a curriculum in music, with three options as shown on the following pages, leading to the degree of Bachelor of Music, and a curriculum in music education, leading to the degree of Bachelor of Science in Music Education. A student enrolled in any music curriculum pursues throughout the four years of his course (except the third and fourth years of the curriculum in music

education) a major applied subject (piano, voice, etc.) in which two 30-minute lessons a week are taken, and a *minor* in which one 30-minute lesson a week is taken for three years. Public performance is a definite part of the training in applied music, and all students, when sufficiently advanced, are required to participate in the student programs.

Courses in the history, theory, and appreciation of music are open to all qualified students in the University.

Graduate courses leading to the degree of Master of Music or the degree of Master of Science in Music Education are offered under the regulations of the Graduate School.

The University Chorus, the University Orchestra, the University Men's Glee Club, and the University Women's Glee Club, are open to qualified persons from any college. The University Chorus meets once a week for rehearsal and gives two concerts during the year. Members of the faculty, students, and singers of the community are admitted by examination or conference with the director. The University Orchestra and the Glee Clubs meet for rehearsal twice each week and present concerts throughout the year.

The School of Music occupies the Tina Weedon Smith Memorial Hall, which has soundproof studios, extensive equipment of musical instruments, and auditorium designed for public recitals and concerts, a large lecture room, classrooms, and a library.

Vesper organ recitals on Sundays and concerts and recitals by members of the faculty and students in radio and other public programs are sponsored by the School of Music.

Curriculum in Architecture

NOTE: The first year is common to both options of the curriculum in architecture.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Arch. 31—Architectural Design.....	3	Arch. 32—Architectural Design.....	3
Art 21a—Freehand Drawing.....	2	Art 21b—Freehand Drawing.....	2
G.E.D. 7—Architectural Projections... 2		G.E.D. 8—Architectural Projections... 2	
Rhet. 1—Rhetoric and Composition... 3		Rhet. 2—Rhetoric and Composition... 3	
Math. 2—College Algebra.....	3	Math. 6a—Analytic Geometry.....	4
Math. 4—Trigonometry.....	2	Hygiene 2 or 5.....	2
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
<i>Total</i>	<u>17</u>	<i>Total</i>	<u>18</u>

GENERAL OPTION

For the Degree of Bachelor of Science in Architecture

This curriculum, which requires 142 semester hours for graduation, emphasizes architectural design in the training of students for service as draftsmen and designers in architectural organizations and for independent practice. (Those who are especially interested in architectural engineering are referred to the construction option outlined on the following page.)

First Year

Common Program for Freshmen (see above).

Second Year

Arch. 13—History of Architecture.....	2	Arch. 14—History of Architecture.....	2
Arch. 33—Architectural Design.....	3	Arch. 34—Architectural Design.....	3
Arch. 43—Technology of Materials.....	3	Arch. 44—Technology of Materials.....	3
Art 22a—Freehand Drawing.....	2	Art 22b—Freehand Drawing.....	2
Phys. 7a—General Physics.....	4	Phys. 7b—General Physics.....	4
Phys. 8a—Physics Lab.....	1	Phys. 8b—Physics Lab.....	1
T.A.M. 17—Elements of Mechanics.....	3	T.A.M. 18—Strength of Materials.....	3
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
<i>Total</i>	<u>20</u>	<i>Total</i>	<u>20</u>

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Arch. 15—History of Architecture	2	Arch. 16—History of Architecture	2
Arch. 35—Architectural Design	5	Arch. 36—Architectural Design	5
Arch. 45—Structural Elements	3	Arch. 46—Theory of Structural Design	3
Arch. 65—Theory of Architecture	1	Arch. 66—Theory of Architecture	1
E.E. 90—Building Lighting	1	Arch. 55—Building Sanitation	1
Art 23a—Freehand Drawing	2	Art 23b—Freehand Drawing	2
French ¹	4	French ¹	4
<i>Total</i>	18	<i>Total</i>	18

Fourth Year

Arch. 17—History of Architecture	2	Arch. 18—History of Architecture	2
Arch. 37—Architectural Design	7	Arch. 38—Architectural Design	7
Arch. 68—Specifications	3	Arch. 60—Concrete	2
Arch. 99—Inspection Trip	0	Art 50—Modeling	2
Art 24a—Freehand Drawing	2	Art 24b—Freehand Drawing	2
M.E. 25—Heating and Ventilating	2		
<i>Total</i>	16	<i>Total</i>	15

CONSTRUCTION OPTION

For the Degree of Bachelor of Science in Architectural Engineering

First Year

Common Program for Freshmen (page 198).

Second Year

Arch. 13—History of Architecture	2	Arch. 14—History of Architecture	2
Arch. 33—Architectural Design	3	Arch. 34—Architectural Design	3
Art 22a—Freehand Drawing	2	Art 22b—Freehand Drawing	2
Math. 7—Differential Calculus	5	Math. 9—Integral Calculus	3
Phys. 7a—General Physics	4	Phys. 7b—General Physics	4
Phys. 8a—Physics Lab.	1	Phys. 8b—Physics Lab.	1
Physical Education	1	T.A.M. 1—Analytical Mech. (Statics)	2
Military Science (for Men)	1	Physical Education	1
		Military Science (for Men)	1
<i>Total</i>	19	<i>Total</i>	19

Third Year

Arch. 15—History of Architecture	2	Arch. 16—History of Architecture	2
Arch. 43—Technology of Materials	3	Arch. 44—Technology of Materials	3
Arch. 45—Structural Elements	3	Arch. 46—Theory of Structural Design	3
T.A.M. 3—Resistance of Materials	3	T.A.M. 2—Analyt. Mech. (Dynamics)	3
T.A.M. 63—Res. of Materials Lab.	1	Language or Elective	4
Language or Elective	4	Electives	3
E.E. 14—Wiring and Illumination	3		
<i>Total</i>	19	<i>Total</i>	18

Fourth Year

Arch. 47—Theory of Structures	5	Arch. 48—Advanced Structures	5
Arch. 57—Reinforced Concrete Theory	3	Arch. 58—Reinforced Concrete Design	3
Arch. 83—Office Practice	2	Arch. 56—Building Sanitation	2
Arch. 99—Inspection Trip	0	Arch. 68—Specifications	3
M.E. 23—Mech. Equip. of Bldgs.	4	Electives	2
M.E. 21—M.E. Laboratory	1		
<i>Total</i>	15	<i>Total</i>	15

¹ See requirements in foreign language, page 196.

Curriculum in Art

NOTE: The first year is common to all options of the curriculum in art.

First Year			
FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Art 25—Art Form.....	5	Art 26—Art Form.....	5
Arch. 71—Elements of Drawing.....	3	Arch. 72—Elements of Drawing.....	3
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
Language.....	4	Language.....	4
Hygiene 2 or 5.....	2	Physical Education.....	1
Physical Education.....	1	Military Science (for Men).....	1
Military Science (for Men).....	1		
<i>Total</i>	18-19	<i>Total</i>	16-17

OPTION IN PAINTING

For the Degree of Bachelor of Fine Arts in Painting

First Year

Common Program for Freshmen (see above).

Second Year

Art 11—Survey of Art History.....	3	Art 12—Survey of Art History.....	3
Art 27—Life Drawing.....	5	Art 28—Life Drawing.....	5
Art 32a—Elements of Composition.....	2	Art 32b—Elements of Composition.....	2
Art 41a—Still Life.....	2	Art 41b—Still Life.....	2
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
Electives.....	3	Electives.....	3
<i>Total</i>	16-17	<i>Total</i>	16-17

Third Year

Art History (Advanced).....	3	Art 30—Life Drawing and Portrait.....	5
Art 29—Life Drawing and Portrait.....	5	Art 33b—Intermediate Composition.....	3
Art 33a—Intermediate Composition.....	3	Art 37b—Illustration.....	2
Art 37a—Illustration.....	2	English or American Literature.....	3
English or American Literature.....	3	Electives.....	3
<i>Total</i>	16	<i>Total</i>	16

Fourth Year

Art History (Advanced).....	3	Art 34b—Advanced Composition.....	4
Art 34a—Advanced Composition.....	4	Art 48—Life Painting.....	4
Art 47—Life Painting.....	4	Art Elective.....	2
Art Elective.....	2	Electives.....	4-6
Electives.....	4-6		
<i>Total</i>	14-16	<i>Total</i>	14-16

OPTION IN COMMERCIAL DESIGN

For the Degree of Bachelor of Fine Arts in Commercial Design

First Year

Common Program for Freshmen (see above).

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Art 11—Survey of Art History.....	3	Art 12—Survey of Art History.....	3
Art 27—Life Drawing.....	5	Art 28—Life Drawing.....	5
Art 32a—Elements of Composition.....	2	Art 32b—Elements of Composition.....	2
Art 41a—Still Life.....	2	Art 41b—Still Life.....	2
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
Electives.....	3	Electives.....	3
<i>Total</i>	<u>16-17</u>	<i>Total</i>	<u>16-17</u>

Third Year

Art 29a—Figure Drawing.....	3	Art History (Advanced).....	3
Art 61—Patterns and Lettering.....	3	Art 30a—Figure Drawing.....	3
Art 65—Commercial Design.....	3	Art 62—Patterns and Lettering.....	3
Journ. 33—Advertising Layout.....	3	Art 66—Commercial Design.....	3
Electives.....	3	Electives.....	3
<i>Total</i>	<u>15</u>	<i>Total</i>	<u>15</u>

Fourth Year

Art. 19a—Hist. of Art in Industry.....	2	Art 19b—Hist. of Art in Industry.....	2
Art 67—Adv. Commercial Design.....	5	Art 68—Adv. Commercial Design.....	5
B.O.O. 10—Newspaper Advertising.....	3	B.O.O. 18—Advertising Campaigns.....	3
Electives.....	5-7	Electives.....	5-7
<i>Total</i>	<u>15-17</u>	<i>Total</i>	<u>15-17</u>

OPTION IN INDUSTRIAL DESIGN

For the Degree of Bachelor of Fine Arts in Industrial Design

First Year

Common Program for Freshmen (page 200).

Second Year

Art 11—Survey of Art History.....	3	Art 12—Survey of Art History.....	3
Art 4a—Interior Design.....	2	Art 4b—Interior Design.....	2
Art 27a—Life Drawing.....	2	Art 28a—Life Drawing.....	2
Art 32a—Elements of Composition.....	2	Art 32b—Elements of Composition.....	2
Art 41a—Still Life.....	2	Art 41b—Still Life.....	2
Art 51a—Advanced Modeling.....	2	Art 51b—Advanced Modeling.....	2
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
Electives.....	2	Electives.....	2
<i>Total</i>	<u>16-17</u>	<i>Total</i>	<u>16-17</u>

Third Year

Art History (Advanced).....	3	Art 62—Patterns and Lettering.....	3
Art 61—Patterns and Lettering.....	3	Art 72—Materials and Technics.....	2
Art 71—Materials and Technics.....	2	Art 76—Industrial Design.....	3
Art 75—Industrial Design.....	3	M.E. 85—Pattern and Foundry Lab.....	3
G.E.D. 4—Mechanical Drawing.....	4	or Home Econ. 19—Costume De-	
or Home Econ. 7—Selection and		sign.....	2
Care of Textiles.....	3	Electives.....	3-4
<i>Total</i>	<u>14-15</u>	<i>Total</i>	<u>14-15</u>

Fourth Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
Art 19a—Hist. of Art in Industry.....	2		Art 19b—Hist. of Art in Industry.....	2	
Art 77—Advanced Industrial Design....	5		Art 78—Advanced Industrial Design....	5	
Econ. 2—Elements of Economics.....	3		B.O.O. 2—Marketing.....	3	
M.E. 87—Machine Tool Lab.....	3		M.E. 88—Machine Tool Lab.; or		
or Arch. 75—Frame Construction....	2		Home Econ. 3—Home Decoration....	3	
Electives.....	2-3		Electives.....	3	
<i>Total</i>		14-15	<i>Total</i>		16

Curriculum in Art Education

For the Degree of Bachelor of Fine Arts in Art Education

The courses outlined below total 134 to 138 hours. A minimum of 130 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
Art 25—Art Form.....	5		Art 26—Art Form.....	5	
Arch. 71—Elements of Drawing.....	3		Arch. 72—Elements of Drawing.....	3	
Rhet. 1—Rhetoric and Composition....	3		Rhet. 2—Rhetoric and Composition....	3	
Language.....	4		Language.....	4	
Military Science (for Men).....	1		Military Science (for Men).....	1	
Physical Education.....	1		Physical Education.....	1	
			Hygiene 2 or 5.....	2	
<i>Total</i>		16-17	<i>Total</i>		18-19

Second Year

Art 27—Life Drawing.....	5		Art 28a—Life Drawing.....	2	
Art 32a—Elementary Composition....	2		Art 32b—Elementary Composition....	2	
Ed. 1—The American Public School....	2		Art 41a—Still Life.....	2	
Natural Science ¹	3		Natural Science ¹	3	
Physical Education.....	1		Psych. 1—Introduction to Psychology..	4	
Military Science (for Men).....	1		Physical Education.....	1	
Electives ²	4		Military Science (for Men).....	1	
			Electives.....	3	
<i>Total</i>		17-18	<i>Total</i>		17-18

Third Year

Art 11—Survey of Art History.....	3		Art 12—Survey of Art History.....	3	
Art 10a—Art Education Methods.....	2		Art 10b—Art Education Methods.....	2	
Pol. Sci. 1a—American Government....	2		Art 37a—Illustration.....	2	
Ed. 25—Educational Psychology.....	3		Hist. 3b—History of the United States,		
Speech 1—Effective Speaking.....	3		1828-1946.....	3	
Electives.....	3		Ed. 6b—Princ. of Secondary Ed.....	3	
			Electives.....	4	
<i>Total</i>		17	<i>Total</i>		17

Fourth Year

Art 15—History of Art and Culture—			Art 18—History of Art and Culture—		
Italian Renaissance.....	2		Modern Period.....	2	
Art 61—Patterns and Lettering.....	3		Art 70b—Advanced Craft Materials		
Ed. 10b—Technic of Teaching in the			and Technics.....	4	
Secondary School.....	3		Art 2a—Water Color.....	2	
Ed. Prac. 9—Practice Teaching of Art.	5		Electives.....	8	
Electives.....	3				
<i>Total</i>		16	<i>Total</i>		16

¹ Botany, zoology, chemistry, physics, geology, geography, biology, general science, mathematics (excluding arithmetic), and physiology, or their equivalents in integrated courses.

² Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. Desirable teaching combinations with art include English, French, industrial arts, Latin, and music.

Fifth Year*For the Degree of Master of Fine Arts in Art Education*

Advanced Art History, 3 hours; <i>or</i> Art 101—Art History.....	1 unit
Art 62—Patterns and Lettering.....	3 hours
Art 75—Industrial Design; <i>or</i> Art 29a—Figure Drawing and Sketch; <i>or</i> Art 34a—Advanced Composition.....	3-4 hours
Ed. 68—Curriculum Problems and Trends in Art Education..	4 hours
Ed. 101—Philos. of Ed.; <i>or</i> Ed. 30—Hist. of American Ed....	1 unit
Ed. 125—Advanced Educational Psychology.....	1 unit
Electives.....	2 units
<i>Total</i>	8 units

Undergraduate Minor in Art Education

HOURS

Art 10b—Art Education Methods.....	2
Art 11-12—Survey of Art History.....	6
Art 25a—Drawing and Design.....	2
Art 25b—Figure Drawing and Clay Modeling.....	2
Art 27a—Life Drawing.....	2
Art 32a—Elementary Composition.....	2
Art 70a—Craft Materials and Technics.....	2
<i>Total</i>	18

Curriculum in Landscape Architecture*For the Degree of Bachelor of Fine Arts in Landscape Architecture***First Year**

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Art 21a—Freehand Drawing.....	2	Art 21b—Freehand Drawing.....	2
G.E.D. 7—Architectural Projections.....	2	G.E.D. 8—Architectural Projections.....	2
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
L.A. 11—History of Land. Arch.....	3	Bot. 5—General Botany.....	3
L.A. 30a—Elements of Land. Arch.....	3	L.A. 30b—Elements of Land. Arch.....	3
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
		Hygiene 2 or 5.....	2
<i>Total</i>	14-15	<i>Total</i>	16-17

Second Year

Arch. 11—History of Architecture.....	3	Arch. 12—History of Architecture.....	3
Arch. 75—Frame Construction.....	2	Arch. 76—Masonry Construction.....	2
Art 22a—Freehand Drawing.....	2	Art 22b—Freehand Drawing.....	2
C.E. 17—Surveying.....	3	C.E. 18—Surveying.....	3
L.A. 31—Landscape Design.....	3	L.A. 32—Landscape Design.....	3
Speech 1—Effective Speaking.....	3	L.A. 74—Regional Planning.....	3
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
<i>Total</i>	17-18	<i>Total</i>	17-18

Third Year

L.A. 33—Landscape Design.....	4	L.A. 34—Landscape Design.....	4
L.A. 43—Landscape Construction.....	3	L.A. 44—Landscape Construction.....	3
L.A. 51—Trees and Shrubs.....	3	L.A. 52—Trees and Shrubs.....	3
English or American Literature.....	3	Hort. 31—Garden Flowers.....	3
Electives.....	3-5	English or American Literature.....	3
<i>Total</i>	16-17	<i>Total</i>	15-16

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
L.A. 35—Landscape Design.....	5	L.A. 36—Landscape Design.....	5
L.A. 53—Planting Design.....	4	L.A. 46—Office Practice.....	2
L.A. 55—Care of Plant Materials.....	2	L.A. 54—Planting Design.....	4
L.A. 71—Planning of Towns and Cities.....	2	L.A. 72—Planning of Towns and Cities.....	2
Electives.....	2-4	Electives.....	0-3
<i>Total</i>	15-17	<i>Total</i>	13-16

Curriculum in Landscape Operation

For the Degree of Bachelor of Science in Landscape Operation

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
L.A. 30a—Elements of Land. Arch.....	3	L.A. 30b—Elements of Land. Arch.....	3
Art 21a—Freehand Drawing.....	2	Art 21b—Freehand Drawing.....	2
G.E.D. 7—Architectural Projections.....	2	G.E.D. 8—Architectural Projections.....	2
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
L.A. 11—History of Land. Arch.....	3	Bot. 5—General Botany.....	3
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
		Hygiene 2 or 5.....	2
<i>Total</i>	15	<i>Total</i>	17

Second Year

L.A. 31—Landscape Design.....	3	L.A. 32—Landscape Design.....	3
Arch. 75—Frame Construction.....	2	Arch. 76—Masonry Construction.....	2
C.E. 17—Surveying.....	3	C.E. 18—Surveying.....	3
Speech 1—Effective Speaking.....	3	L.A. 74—Regional Planning.....	3
Accy. 1a—Principles of Accounting.....	3	Accy. 1b—Accounting Procedure.....	3
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
<i>Total</i>	16	<i>Total</i>	16

Third Year

L.A. 43—Landscape Construction.....	3	L.A. 44—Landscape Construction.....	3
L.A. 51—Trees and Shrubs.....	3	L.A. 52—Trees and Shrubs.....	3
Entom. 1a—Insects.....	3	Hort. 31—Garden Flowers.....	3
Rhet. 10—Business Letter Writing.....	2	B.O.O. 7—Salesmanship.....	2
B.O.O. 10—Advertising.....	3	Electives.....	5
Electives.....	3		
<i>Total</i>	17	<i>Total</i>	16

Fourth Year

L.A. 37—Design.....	3	L.A. 38—Design.....	3
L.A. 53—Planting Design.....	4	L.A. 46—Office Practice.....	2
L.A. 55—Care of Plants.....	2	L.A. 48—Adv. Construction.....	3
L.A. 71—City Planning.....	2	L.A. 54—Planting Design.....	4
Electives.....	6	L.A. 72—City Planning.....	2
		Electives.....	2
<i>Total</i>	17	<i>Total</i>	16

Curriculum in Music

INSTRUMENTAL MAJOR

(Piano, Violin, Violoncello, Organ, or Band and Orchestral Instruments)

For the Degree of Bachelor of Music

NOTE: A student enrolled in this curriculum takes two applied subjects, one a major (34 to 40 hours credit), and the other a minor (12 hours credit).

In the Band and Orchestral Instruments Major (34 hours major credit), the credit in Major Applied Music in the second, third, and fourth years is 4 hours each semester, including work on supplementary band and orchestral instruments and conducting. Only 8 hours are required in the minor subject.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Major Applied Music Subject	4	Major Applied Music Subject	4
Minor Applied Music Subject	2	Minor Applied Music Subject	2
Music 3a—Theory of Music	3	Music 3b—Theory of Music	3
Music 3c—Ear Training and Sight Singing	1	Music 3d—Ear Training and Sight Singing	1
Music 18a—Orientation	1	Music 18b—Orientation	1
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
		Hygiene 2 or 5	2
<i>Total</i>	<u>15-16</u>	<i>Total</i>	<u>17-18</u>

Second Year

Major Applied Music Subject	4-5	Major Applied Music Subject	4-5
Minor Applied Music Subject	2	Minor Applied Music Subject	2
Music 1a—History of Music	2	Music 1b—History of Music	2
Music 4a—Theory of Music	3	Music 4b—Theory of Music	3
Music 4c—Ear Training and Sight Singing	1	Music 4d—Ear Training and Sight Singing	1
French, German, or Italian	4	French, German, or Italian	4
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
<i>Total</i>	<u>17-19</u>	<i>Total</i>	<u>17-19</u>

Third Year

Major Applied Music Subject	4-5	Major Applied Music Subject	4-5
Minor Applied Music Subject	2	Minor Applied Music Subject	2
Music 5a—Advanced Harmony	2	Music 5b—Advanced Harmony	2
Music 9—Analysis, Musical Form	2	Music 10—Analysis, Musical Form	2
Music 30a—Ensemble	1/2	Music 30b—Ensemble	1/2
Electives	5-6	Electives	5-6
<i>Total</i>	<u>15 1/2-16 1/2</u>	<i>Total</i>	<u>15 1/2-16 1/2</u>

Fourth Year

Major Applied Music Subject	4-5	Major Applied Music Subject	4-5
Music 6a—Free Counterpoint ¹	2	Music 6b—Free Counterpoint ¹	2
Music 31a—Ensemble	1/2	Music 31b—Ensemble	1/2
Music 32—Adv. History of Music	2	Music 33—Adv. History of Music	2
Electives	2-6	Electives	6
<i>Total</i>	<u>10 1/2-16 1/2</u>	<i>Total</i>	<u>14 1/2-15 1/2</u>

¹ Music 19a and 20a (Double Counterpoint, Canon, and Fugue) are required of Organ Majors, instead of Music 6a and 6b. In the Band and Orchestral Instruments Major, Music 15 and 16 (Instrumentation), 2 hours each semester, are required instead of Music 6a and 6b.

VOICE MAJOR

For the Degree of Bachelor of Music

First and Second Years

The first two years of work are the same as for the Instrumental Major, except that the credit in the Major Applied Music in the *Second Year* is four hours each semester instead of five hours. The Major Applied Music subject throughout the course includes classes in Singing Diction as well as private lessons in Voice. At least eight hours each of Italian, French, and German are required for the Voice Major.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Music 54a—Voice.....	3	Music 54b—Voice.....	3
Music 54c—Singing Diction.....	1	Music 54d—Singing Diction.....	1
Minor Applied Music Subject.....	2	Minor Applied Music Subject.....	2
Music 5a—Advanced Harmony.....	2	Music 5b—Advanced Harmony.....	2
Music 30a—Ensemble.....	½	Music 30b—Ensemble.....	½
Music 9—Analysis, Musical Form.....	2	Music 10—Analysis, Musical Form.....	2
Language.....	4	Language.....	4
<i>Total</i>	13½–14½	<i>Total</i>	13½–14½

Fourth Year

Music 55a—Voice.....	3	Music 55b—Voice.....	3
Music 55c—Singing Diction.....	1	Music 55d—Singing Diction.....	1
Music 32—Adv. History of Music.....	2	Music 33—Adv. History of Music.....	2
Music 28a—Music Dramas of Wagner.....	2	Music 28b—Music Dramas of Wagner.....	2
Music 31a—Ensemble.....	½	Music 31b—Ensemble.....	½
Electives.....	7–8	Electives.....	4–8
<i>Total</i>	15½–16½	<i>Total</i>	12½–16½

THEORY MAJOR

For the Degree of Bachelor of Music

A student may take a major in Theory of Music only on recommendation of the Director. The complete theory course offered in the Instrumental Major must be completed with Music 3a-b and Music 4a-b taken concurrently in the freshman year. In addition, the courses in Composition (Music 11a-b and 12a-b) and Instrumentation (Music 15 and 16) must be taken in the third and fourth years. A recital of original composition is required.

The student will continue the study of applied music throughout three years of his course of study. Whether or not piano is the major instrument, the student should acquire a thorough practical knowledge of the pianoforte. He will find it advantageous to spend, if possible, at least one semester each in the study of three orchestral instruments, to include one instrument in each section of the orchestra, i. e., string, woodwind, and brass.

Curriculum in Music Education

For the Degree of Bachelor of Science in Music Education

The minimum requirements for teaching music in the primary and secondary schools are (1) that the teacher be sufficiently proficient on the piano to play accompaniments of music education materials and to play at sight such materials as hymns, community songs, and folk songs, and (2) that he have a sufficient knowledge of voice to sing with a pleasant tone quality, to sing at sight, and to be able to impart the principles of voice production. Students who can not meet these requirements must take additional work in the branches of applied music in which they are deficient.

The courses outlined below total 136 to 140 hours. A minimum of 130 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

PIANO OR VOICE MAJOR

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Major Applied Music Subject	4	Major Applied Music Subject	4
Minor Applied Music Subject	2	Minor Applied Music Subject	2
Music 18a—Orientation	0	Music 18b—Orientation	0
Music 3a—Theory, Harmony	3	Music 3b—Theory, Harmony	3
Music 3c—Ear Training and Sight Singing	1	Music 3d—Ear Training and Sight Singing	1
D.G.S. 1a—Verbal Expression ¹	4	D.G.S. 1b—Verbal Expression ¹	4
Military Science (for Men)	1	Hygiene 2 or 5	2
Physical Education	1	Military Science (for Men)	1
		Physical Education	1
<i>Total</i>	<u>15-16</u>	<i>Total</i>	<u>17-18</u>

Second Year

Major Applied Music Subject	4	Major Applied Music Subject ²	4
Minor Applied Music Subject	2	Minor Applied Music Subject ²	2
Music 1a—History of Music	2	Music 1b—History of Music	2
Music 4a—Theory, Harmony	3	Music 4b—Theory, Harmony	3
Music 4c—Ear Training and Sight Singing	1	Music 4d—Ear Training and Sight Singing	1
Physics of Sound	2	Psych. 1—Introduction to Psychology	4
Ed. 1—The American Public School	2	Military Science (for Men)	1
Military Science (for Men)	1	Physical Education	1
Physical Education	1		
<i>Total</i>	<u>17-18</u>	<i>Total</i>	<u>17-18</u>

Third Year

Music 25—Elementary and Junior High School Music	2	Music 26—Senior High School Choral Music	2
Music 68a—String Instruments	2	Music 68b—String Instruments	2
Music 98a—Wind Instruments	2	Music 98b—Wind Instruments	2
Music 30a—Ensemble	½	Music 30b—Ensemble	½
Pol. Sci. 1a—American Government	3	Ed. 6b—Princ. of Secondary Ed.	3
Ed. 25—Educational Psychology	3	Hist. 3b—History of the United States, 1828-1946	3
Electives ³	5	Electives ³	5
<i>Total</i>	<u>17½</u>	<i>Total</i>	<u>17½</u>

Fourth Year

Music 95c—Conducting	2	Music 27—Instrumental School Music	2
Music 13—Appreciation of Music	2	Music 14a—Appreciation of Music	2
Music 98c—Wind Instruments	2	Music 98d or 98e—Wind Instruments	2
Music 15—Instrumentation	2	Music 16—Instrumentation	2
Music 31a—Ensemble	½	Music 31b—Ensemble	½
Ed. Prac. 20a—Prac. Teach. of Music	2	Ed. Prac. 20b—Prac. Teach. of Music	3
Ed. 10b—Technic of Teaching in the Secondary School	3	Electives ³	6
Electives ³	4		
<i>Total</i>	<u>17½</u>	<i>Total</i>	<u>17½</u>

¹ Rhet. 1-2 and Speech 10 or 1 may be taken instead of D.G.S. 1a-1b.² A test is given in this subject. If the student has not attained adequate proficiency, he will be required to take from 2 to 4 hours of work in excess of the 130 hours required for graduation.³ A minimum of 16 hours for a second teaching subject is required. Desirable teaching combinations with music include art, English, French, German, Latin, physical education, and Spanish.

WIND INSTRUMENT MAJOR

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Music 92a—Band and Orchestral Instruments.....	2	Music 92b—Band and Orchestral Instruments.....	2
Music 42a—Piano.....	2	Music 42b—Piano.....	2
Music 98a—Wind Instruments.....	2	Music 98b—Wind Instruments.....	2
Music 18a—Orientation.....	0	Music 18b—Orientation.....	0
Music 3a—Theory, Harmony.....	3	Music 3b—Theory, Harmony.....	3
Music 3c—Ear Training and Sight Singing.....	1	Music 3d—Ear Training and Sight Singing.....	1
D.G.S. 1a—Verbal Expression ¹	4	D.G.S. 1b—Verbal Expression ¹	4
Military Science (for Men).....	1	Hygiene 2 or 5.....	2
Physical Education.....	1	Military Science (for Men).....	1
		Physical Education.....	1
<i>Total</i>	<u>15-16</u>	<i>Total</i>	<u>17-18</u>

Second Year

Music 93a—Band and Orchestral Instruments.....	2	Music 93b—Band and Orchestral Instruments.....	2
Music 43a—Piano.....	2	Music 43b—Piano ²	2
Music 98c—Wind Instruments.....	2	Music 98d—Wind Instruments.....	2
Music 1a—History of Music.....	2	Music 1b—History of Music.....	2
Music 4a—Theory, Harmony.....	3	Music 4b—Theory, Harmony.....	3
Music 4c—Ear Training and Sight Singing.....	1	Music 4d—Ear Training and Sight Singing.....	1
Physics of Sound.....	2	Psych. 1—Introduction to Psychology.....	4
Ed. 1—The American Public School.....	2	Military Science (for Men).....	1
Military Science (for Men).....	1	Physical Education.....	1
Physical Education.....	1		
<i>Total</i>	<u>17-18</u>	<i>Total</i>	<u>17-18</u>

Third Year

Music 52a—Voice.....	2	Music 52b—Voice ²	2
Music 25—Elementary and Junior High School Music.....	2	Music 26—Senior High School Choral Music.....	2
Music 68a—String Instruments.....	2	Music 68b—String Instruments.....	2
Music 30a—Ensemble.....	½	Music 30b—Ensemble.....	½
Pol. Sci. 1a—American Government.....	3	Ed. 6b—Princ. of Secondary Ed.....	3
Ed. 25—Educational Psychology.....	3	Hist. 3b—History of the United States, 1828-1946.....	3
Electives ³	5	Electives ³	5
<i>Total</i>	<u>17½</u>	<i>Total</i>	<u>17½</u>

Fourth Year

Music 95c—Conducting.....	2	Music 27—Instrumental School Music.....	2
Music 13—Appreciation of Music.....	2	Music 14a—Appreciation of Music.....	2
Music 15—Instrumentation.....	2	Music 16—Instrumentation.....	2
Music 31a—Ensemble.....	½	Music 31b—Ensemble.....	½
Ed. Prac. 20a—Prac. Teach. of Music.....	2	Ed. Prac. 20b—Prac. Teach. of Music.....	3
Ed. 10b—Technic of Teaching in the Secondary School.....	3	Electives ³	8
Electives ³	6		
<i>Total</i>	<u>17½</u>	<i>Total</i>	<u>17½</u>

¹ Rhet. 1-2 and Speech 10 or 1 may be taken instead of D.G.S. 1a-1b.² A test is given in this subject. If the student has not attained adequate proficiency, he will be required to take from 2 to 4 hours of work in excess of the 130 hours required for graduation.³ A minimum of 16 hours for a second teaching subject is required. Desirable teaching combinations with music include art, English, French, German, Latin, physical education, and Spanish.

STRING INSTRUMENT MAJOR

First Year

FIRST SEMESTER		SECOND SEMESTER	
	HOURS		HOURS
Music 62a—Violin	4	Music 62b—Violin	4
Music 42a—Piano	2	Music 42b—Piano	2
Music 18a—Orientation	0	Music 18b—Orientation	0
Music 3a—Theory, Harmony	3	Music 3b—Theory, Harmony	3
Music 3c—Ear Training and Sight Singing	4	Music 3d—Ear Training and Sight Singing	4
D.G.S. 1a—Verbal Expression ¹	4	D.G.S. 1b—Verbal Expression ¹	4
Military Science (for Men)	1	Hygiene 2 or 5	2
Physical Education	1	Military Science (for Men)	1
		Physical Education	1
<i>Total</i>	15-16	<i>Total</i>	17-18

Second Year

Music 63a—Violin	4	Music 63b—Violin	4
Music 43a—Piano	2	Music 43b—Piano ²	2
Music 1a—History of Music	2	Music 1b—History of Music	2
Music 4a—Theory, Harmony	3	Music 4b—Theory, Harmony	3
Music 4c—Ear Training and Sight Singing	4	Music 4d—Ear Training and Sight Singing	4
Physics of Sound	2	Psych. 1—Introduction to Psychology	4
Ed. 1—The American Public School	2	Military Science (for Men)	1
Military Science (for Men)	1	Physical Education	1
Physical Education	1		
<i>Total</i>	17-18	<i>Total</i>	17-18

Third Year

Music 52a—Voice	2	Music 52b—Voice ²	2
Music 25—Elementary and Junior High School Music	2	Music 26—Senior High School Choral Music	2
Music 98a—Wind Instruments	2	Music 98b—Wind Instruments	2
Music 30a—Ensemble	½	Music 30b—Ensemble	½
Pol. Sci. 1a—American Government	3	Ed. 6b—Princ. of Secondary Ed.	3
Ed. 25—Educational Psychology	3	Hist. 3b—History of the United States, 1828-1946	3
Electives ³	5	Electives ³	5
<i>Total</i>	17½	<i>Total</i>	17½

Fourth Year

Music 95c—Conducting	2	Music 68a or 68b—String Instruments	2
Music 13—Appreciation of Music	2	Music 27—Instrumental School Music	2
Music 98c—Wind Instruments	2	Music 14a—Appreciation of Music	2
Music 15—Instrumentation	2	Music 98d or 98e—Wind Instruments	2
Music 31a—Ensemble	½	Music 16—Instrumentation	2
Ed. Prac. 20a—Prac. Teach. of Music	2	Music 31b—Ensemble	½
Ed. 10b—Technic of Teaching in the Secondary School	3	Ed. Prac. 20b—Prac. Teach. of Music	3
Electives ³	4	Electives ³	4
<i>Total</i>	17½	<i>Total</i>	17½

¹ Rhet. 1-2 and Speech 10 or 1 may be taken instead of D.G.S. 1a-1b.

² A test is given in this subject. If the student has not attained adequate proficiency, he will be required to take from 2 to 4 hours of work in excess of the 130 hours required for graduation.

³ A minimum of 16 hours for a second teaching subject is required. Desirable teaching combinations with music include art, English, French, German, Latin, physical education, and Spanish.

Fifth Year

For the Degree of Master of Science in Music Education

	UNITS		UNITS
Ed. 125—Advanced Educational Psychology.....	1	Ed. 101—Philosophy of Education; <i>or</i>	
Applied Music Major ¹	1	Ed. 30—Hist. of American Ed.....	1
Electives.....	2	Music 130—Administration and	
		Supervision of Music Education.....	1
		Applied Music Major ¹	1
		Electives.....	1
<i>Total</i>	4	<i>Total</i>	4

Undergraduate Minors in Music

INSTRUMENTAL MINOR		HOURS
Music 68a-68b—String Instruments.....		4
Music 98a-98e—Wind Instruments ²		4
Music 95c—Conducting.....		2
Music 13 <i>or</i> 14a—Appreciation of Music.....		2
Music 42—Piano; <i>or</i> Music 62—Violin; <i>or</i> Music 92—Band and		
Orchestral Instruments (to be chosen with consent of adviser)...		4
Music 27—Instrumental School Music.....		2
<i>Total</i>		18
VOCAL MINOR		
Music 3c and 3d—Ear Training and Sight Singing.....		2
Music 13 <i>or</i> 14a—Appreciation of Music.....		2
Music 30a-30b—Vocal Section.....		1
Music 95c—Conducting.....		2
Music 42—Piano.....		4
Music 52—Voice.....		4
Music 25—Elementary and Junior High School Music; <i>or</i> Music		
26—Senior High School Choral Music.....		2
<i>Total</i>		17

THE UNIVERSITY BANDS

The University Bands normally comprise three organizations: the Concert Band, the First Regimental Band, and the Second Regimental Band. Places in these organizations are determined by competitive examination. Service in the bands takes the place of the required military courses. Members of the Concert Band who have satisfied the University military requirements are eligible to receive scholarships amounting to the tuition fees required from students residing in Illinois.

The bands furnish the music for military ceremonies, parades, convocations, athletic events, Commencement, and other occasions. The First and Second Regimental Bands serve to train members for the Concert Band, which is composed of selected musicians whose main purpose is to study the higher forms of music. In addition to concerts on the campus, numerous concerts have been given in midwestern cities.

The University owns a varied and complete equipment of band instruments and a very extensive collection of band music, including the John Philip Sousa Memorial Library, which is undoubtedly the greatest collection of music for the modern symphonic band in this country and one of the largest and finest libraries of band music in the world.

Further information may be obtained by addressing the Director of University Bands, Band Building, Urbana, Illinois.

¹ Chosen from courses for advanced undergraduates and graduates.

² Students are required to take two of these courses.

The Graduate School

FACILITIES FOR ADVANCED STUDY AND FOR RESEARCH IN VARIOUS lines were offered by the University as early as 1872, and organized instruction under the name of the Graduate School was first undertaken in 1892. In 1906 the Graduate School was organized as a separate faculty. By action of the Trustees of the University, the teaching faculty of the Graduate School includes all members of the University faculty who give instruction in approved graduate courses. The affairs of the school are in charge of its executive faculty.

Executive Faculty

ROBERT DANIEL CARMICHAEL, Ph.D., Professor of Mathematics and Dean of the Graduate School
HORACE MONTGOMERY GRAY, Ph.D., Professor of Economics and Associate Dean of the Graduate School
WILLIAM HENRY WELKER, Ph.D., D.Sc., Professor of Biological Chemistry and Chairman of the Standing Committee on Graduate Work in Dentistry, Medicine, and Pharmacy
FRANK BOLTON ADAMSTONE, Ph.D., Professor of Zoology
HERBERT EDMUND CARTER, Ph.D., Professor of Chemistry
HAROLD CLAYTON M. CASE, Ph.D., Professor of Agricultural Economics
FREDERICK CHARLES DIETZ, Ph.D., Professor of History
TOM SHERMAN HAMILTON, Ph.D., Professor of Animal Nutrition
HENNING LARSEN, Ph.D., Professor of English
F. WHEELER LOOMIS, Ph.D., Professor of Physics
EDWIN HEWETT REEDER, Ph.D., Professor of Education
THOMAS CLARK SHEDD, M.S., C.E., Professor of Structural Engineering
NEIL EVERETT STEVENS, Ph.D., Professor of Botany
HERBERT WOODROW, Ph.D., Professor of Psychology

Admission

Admission to the Graduate School may be granted to graduates of institutions whose requirements for the bachelor's degree are substantially equivalent to those of the University of Illinois. Admission to the Graduate School, however, does not imply admission to candidacy for an advanced degree, and gives the student no right or claim to be so admitted. A mere accumulation of "credits" or "grades" is not sufficient.

Admission to graduate courses may be granted only to those who have had the requisite undergraduate work in those courses or departments. But a student of mature age who satisfies the Dean and the department concerned of his ability to pursue graduate work in a given line may be enrolled in particular graduate courses, without reference to a degree, and permitted to carry on such study or investigation under the direction of a department of the University as the department shall recommend and the Dean approve.

Application blanks for admission may be obtained from the Registrar of the University. Every applicant must submit with his application for admission an official transcript of his college record. All applicants who have not previously taken a physical examination at the University must take such an examination. The examination is given by the University Health Service without cost to the student, if taken during the registration period.

Directions for registration and regulations for programs of study are given in the annual *Graduate School Announcement*, copies of which may be obtained at the office of the Dean, 109 Administration Building, Urbana, Illinois.

Character of Graduate Work

The principal aims of graduate study are the development of the power of independent work and the promotion of the spirit of research. Each candidate for a degree is expected to have a wide knowledge of his subject and of related fields of work; for the graduate student is not expected to get from lecture and laboratory courses all the knowledge and training necessary to meet the requirements for his degree.

Graduate Study in Summer

Graduate students in summer sessions are subject to the same requirements as those in the regular academic year. Their study-lists must be approved by the Dean of the Graduate School, or his representative. Two to two and one-half units of graduate work may be taken in a summer session. Attendance during four out of six consecutive summer sessions, or one semester and two summer sessions, is considered the equivalent of one year in residence.

The Executive Faculty may, at the request of a given department, accord recognition to its summer session work subject to the following conditions: (1) Study in the University of Illinois summer session may be counted in partial fulfillment of the residence requirements for the degree of Doctor of Philosophy, but at least one continuous academic year of residence at the University at some time during the second or third years of the doctoral program is required. (2) Persons electing to use this plan shall be required to submit a schedule of study covering the second and third years of work toward the doctorate. This schedule of study must be approved by the adviser in charge of the major subject and by the Dean of the Graduate School.

Masters' Degrees

The Master's degree conferred on a candidate depends on the character of his baccalaureate degree, the usual practice being that A.M. shall follow A.B., and that M.S. shall follow B.S. However, this practice may be departed from in cases where the candidate's undergraduate course of study was of a kind for which some reputable institutions in this country give A.B. while others give B.S. In music the M.Mus. shall follow the B.Mus., and the M.S. in Music Education shall follow the B.S. in Music Education. In the fine arts the M.F.A. shall follow the B.F.A.

Amount of Work Required.—Candidates for the degree of Master of Arts or Master of Science are required to do at least one full year's work in residence, usually including a thesis. Four to five units constitute a normal semester program for the master's degree. A minimum of eight units must be completed for the degree. Only first-rate students are permitted to secure a degree with this minimum program. In some departments special examinations are required of candidates for masters' degrees. In all cases, the student must satisfy the duly approved conditions set by his major and minor departments.

Unless otherwise permitted, every student must take each semester at least one course open to graduate students only (courses numbered 100 and upwards).

In the first year of his graduate study each student is required to attend a minimum of four formal class, lecture, or laboratory exercises a week. Schedules involving an unusually large number of formal class meetings each week will require the special approval of the Dean.

Extramural Work.—Students who began their extramural graduate work in September, 1941, or thereafter, may apply no more than four units of graduate credit earned through extramural courses toward meeting the requirements of the degree of Master of Arts or Master of Science. Credit earned in extramural courses may be applied toward graduate work beyond the masters' degrees only in individual cases, and upon approval of the Dean of the Graduate School. Such approval must be obtained not later than the time of registration for such courses.

Work Done Elsewhere.—Members of the staff and high school teachers residing and employed in Urbana or Champaign who have done graduate work in approved institutions elsewhere may secure credit not to exceed four units towards the master's degree by passing examinations in that work. Admission to such examinations requires the prior approval of the Dean of the Graduate School. They may complete the work for the degree by securing at least four units more while registered in the Graduate School for not less than one academic year.

Graduate students who have been in residence one semester or its equivalent may offer for credit not more than nine weeks of work at a marine or fresh-water biological laboratory or in biological or geological field work, on condition that the work be of graduate grade under a qualified instructor or director as certified by the student's major adviser and approved by the Dean of the Graduate School; that approval be obtained by the student in advance; and that a written report of the work accomplished be presented by the student and approved as satisfactory by the student's major adviser.

Majors and Minors.—A candidate for a master's degree may do all his work in one subject, or he may select a major and one minor, or a major and two minors. A major or minor denotes the field of knowledge of a department, or such part thereof as constitutes a separate and independent division of that field. For a master's degree a major is at least half the work, or a minimum of four units, for one year. Less than one unit may not be counted as satisfying the requirements of a minor without the approval of the department concerned.

Foreign Language.—The ability to use one or more of the modern languages ordinarily studied in the undergraduate curriculum is desirable for all candidates for the master's degree, and in some lines of study is required. No student will be permitted to acquire residence toward the second year for the doctorate until he has passed the preliminary examination in at least one of these languages.

Master's Thesis.—Each candidate for a master's degree is required to present two copies of a thesis on some subject approved by the professor in charge of his major work. Such approval, except in case of students working for masters' degrees in summer sessions only, must be secured and the subject of the thesis filed at the office of the Graduate School not later than the beginning of the second half-year of residence. Students working for masters' degrees exclusively in summer sessions must announce their thesis subjects not later than the beginning of their third session in residence. The requirement of a thesis may be waived, however, on the recommendation of the professor in charge of his major work and the approval of the Dean, *provided application to waive the thesis is made at the time for announcing thesis subjects.* A student excused from writing a thesis must replace it with courses of instruction. Both copies of the thesis in its final form, together with a certificate of approval by the proper officer, must be left at the Dean's office at least two weeks before the date on which the degree is to be conferred. No article prepared for another use, or previously published, will be accepted as a thesis.

Permission for the publication of the material of a master's thesis should be obtained from the Dean of the Graduate School before such publication is carried out.

Thesis Work on Leave of Absence.—Under proper conditions a student may be permitted to complete the last fourth of his work, if devoted to this thesis, under leave of absence for a period not to exceed the equivalent of two semesters. To get such permission the student must have secured credit for at least six units; must petition for the privilege; must submit to the Dean an outline of the proposed investigation, approved by the professor in charge of his major work; and must submit satisfactory evidence that adequate facilities are available to him at the place where he intends to do the proposed work. Approval on all these points must be obtained one collegiate year before the thesis is due. Immediately following approval the student must register and pay a tuition fee of \$20.

Masters' Degrees in Teacher Education

Programs leading to the master's degree in teacher education are offered to students who have satisfactorily completed the four-year teacher-training curricula, or their equivalents. These programs are offered in the following areas: agriculture, art, biology and general science, chemistry, commercial teaching, English, French, geography, German, Latin, home economics, mathematics, mathematics and the physical sciences, music, physical education for men, physical education for women, physical sciences, physics, social studies, Spanish, speech, and speech correction.

Students who have not met all of the requirements of a four-year undergraduate curriculum but who desire to take the fifth year of work may register, on approval, and make up deficiencies while pursuing the fifth year.

Second Degrees in Engineering

Two classes of second degrees are open to graduates of the College of Engineering, namely, academic and professional.

The *academic* second degree in engineering is Master of Science, following Bachelor of Science, in civil engineering, electrical engineering, etc. This degree is conferred in accordance with regulations described above, for *academic work in residence only.*

The *professional* second degrees in engineering are as follows:

Agricultural Engineer, after B.S. in agricultural engineering.

Master of Architecture, after B.S. in architecture.

Architectural Engineer, after B.S. in architectural engineering.

Ceramic Engineer, after B.S. in ceramic engineering.
 Chemical Engineer, after B.S. in chemical engineering.
 Civil Engineer, after B.S. in civil engineering or in railway civil engineering.
 Electrical Engineer, after B.S. in electrical engineering or in railway electrical engineering.
 Mechanical Engineer, after B.S. in mechanical engineering or in railway mechanical engineering.
 Metallurgical Engineer, after B.S. in metallurgy.
 Engineer of Mines, after B.S. in mining engineering.
 Engineer-Physicist, after B.S. in engineering physics.

Professional degrees in engineering may be conferred on two classes of candidates: (1) those who have received an academic degree in engineering or in architecture from the University of Illinois; (2) those who have received an academic degree in engineering, including chemical engineering, from other institutions of equal standing and who have been members of the teaching or research staff of the College of Engineering or Engineering Experiment Station or the Department of Chemistry of the University of Illinois for at least three years prior to the conferring of the professional degree.

A candidate declares his candidacy by filing with the Dean of the College of Engineering, as chairman of the committee in charge, a detailed statement covering his professional engineering experience. This statement must be made on a standard form supplied by the Dean of the College of Engineering, and must be filed not later than the first Monday in November preceding the Commencement at which the candidate expects to receive the degree. No statement of experience will be considered by the committee which does not show that the candidate has had a minimum of eight years of acceptable engineering experience after receiving the degree of Bachelor of Science, and that for at least five years he has been in responsible charge of engineering work. Responsible charge in engineering teaching may be considered as responsible charge of work. In determining the acceptability of the engineering experience of the candidate the committee will be guided by the character of his professional work and the degree of responsibility involved, and will take into consideration such evidences of professional ability and growth as may be shown by his investigation of engineering problems, his contributions to technical literature, and his membership and activity in engineering societies.

If the professional experience of the candidate is accepted he must submit for approval, prior to December 31, an outline of his proposed thesis or, in lieu of a thesis, a technical report of plans and specifications for engineering projects which he has conceived and designed or directed. The completed thesis, in the form prescribed in the "Instructions for the Preparation of Masters' and Doctors' Theses," must be deposited with the Dean of the College of Engineering not later than May 1. The candidate must present himself at Commencement in order to receive the degree.

A candidate for a professional engineering degree must pay the tuition fee of twenty-five dollars on being notified that his professional experience is accepted as qualifying him to enter as a candidate for the degree. No one will be enrolled as a candidate for the degree at the following Commencement who does not pay his fee at this time. When a candidate for a professional engineering degree has once been accepted and paid his fee, he is eligible to receive the degree at any time within five years, without additional fee, on completion of the requirements; provided, however, that unless he completes the requirements within two years his name will be dropped from the list of candidates, and in order to receive the degree within the five-year period he must register once more.

Professional Degrees in Education

The Degree of Master of Education.—This degree is designed for teachers, supervisors, administrative officers, and others engaged in educational work demanding broad fundamental and practical preparation and the ability to utilize professionally the contributions of research and of philosophy.

A minimum of two years of approved professional experience and the completion of the requirements for the degree of Master of Arts and Master of Science, or the equivalent, are required for admission to the curriculum leading to the degree of Master of Education. In addition, the candidate must be recommended by the college committee on admissions and guidance as showing promise of superior professional competence. In case the first year of graduate study does not include a major in education, the candidate

will be required to take additional courses in education. The student's general education will also be reviewed, and appropriate courses may be required to correct any deficiencies.

A minimum of one year of graduate study (8 units) in addition to the requirements stated above will be required for the Ed.M. degree. This year of graduate study will be planned as a whole in consultation with the student's advisory committee. In addition to meeting other requirements, the candidate must pass a final examination administered by a college committee of at least three members.

The Degree of Doctor of Education.—The purpose of the Doctor of Education (Ed.D.) degree is to continue the type of preparation indicated for the Master of Education (Ed.M.) degree and, in addition, to develop in the candidate further ability for scholarly study of professional problems. A candidate for the degree of Doctor of Education must have completed the requirements for the degree of Master of Education, or the equivalent. Toward the end of his second year or, by special permission, at the beginning of his third year of graduate study, a student who wishes to become a candidate for the degree of Doctor of Education must submit to preliminary examinations conducted by a committee appointed by the Dean of the Graduate School. The graduate faculty will advise a student not to attempt these examinations if the evidence does not indicate promise of outstanding professional competence.

The candidate, having completed the requirements for the degree of Master of Education, or the equivalent, and having passed the required preliminary examinations, must satisfy the residence requirements for the degree as stated below and must conduct a field study or other type of professional investigation, the report of which will constitute the thesis for the degree. This study will consist of a scholarly investigation of a significant professional problem.

The topic of the study, selected in consultation with the student's advisory committee, must be announced before the third year of graduate residence may begin. The study must have the approval of the graduate faculty of the College of Education and of the executive faculty of the Graduate School.

In a typical case, the candidate who is employed in professional work during the school year will devote a minimum of three summer sessions and two academic years to the field study or the professional investigation. The candidate will begin the first academic year of his study immediately after the completion of the first summer session. He will register during both semesters in a special seminar for candidates for the degree of Doctor of Education. This seminar will require a minimum of three days each semester at the University. The candidate will be expected to demonstrate continued progress in the organization, planning, and execution of the study.

For the second year the requirements will be similar to those of the first year and will include resident study during the summer session, devoted primarily to reading directed by the candidate's adviser, and followed by work in the field during the succeeding academic year. The third summer session in residence will be devoted primarily to the completion of the written report of the study which shall constitute the thesis for the degree of Doctor of Education.

Candidates for the degree of Doctor of Education who already hold the degree of Ph.D. from a recognized university will be regarded as special cases. They will be required to take the prescribed seminars and such other courses as the advisory committee may require. They will also take the preliminary examinations and conduct a field study or other type of professional investigation.

At least two weeks before the time when the degree is to be conferred, the candidate must submit to a final examination given by a committee appointed by the Dean of the Graduate School. This examination will deal primarily with the report of the thesis study, but will not be confined to that. It will be so conducted as to determine whether the candidate has a thorough and mature understanding of the field of education as a whole. The student may, in addition, be required to take any other examination, oral or written, that is thought proper by the various departments in which he has studied. The final examination may not be divided, but must be taken all at one time, even though this may require several sessions.

Two typewritten copies of the complete thesis in final form, the original on thesis paper and the first carbon on plain paper of approximately the same weight, must be deposited in the office of the Dean of the Graduate School for presentation to the examining committee not later than two weeks prior to the final examination and not less than four weeks before the time when the degree is to be conferred. With respect to form and to all other requirements, the regulations of the Graduate School covering theses for the Ph.D. degree will apply also to the report of the study for the Ed.D. degree.

The Degree of Doctor of Philosophy

Major and Minor Subjects.—A student in the Graduate School who desires to become a candidate for the degree of Doctor of Philosophy is required to pursue a major subject in the department in which his research lies. He is also required to choose one minor subject, or he may choose two. If one minor only is chosen it must be taken in a department of study other than that of the major, and credit for it may be earned by work representing not less than four units, or one-sixth of the total residence required for the doctorate. If two minors are chosen, one must be a subject closely related to the major. With the approval of the adviser and the Dean it may be a division of the major field of study. The other minor (not less than two units) must, in that case, be taken in a department of study other than that of the major. Except by special permission of the Dean the preliminary examination in major and minor subjects may not be taken until the minor work has been done.

Method of Computing Residence.—Credit for a full year of graduate work means that the student has during that time devoted all his working time and energy to study of a graduate grade. Second-year and third-year students shall register in terms of units. For each course with fixed credit or with variable credit within fixed limits, the registration shall be for such credit as is determined in the usual way for such courses. For thesis courses the amount of credit may be widely variable and may be fixed in each case in accordance with the judgment of the department and the needs of the student, subject to approval of the Dean of the Graduate School and the following provision regarding total credits: The registration for a full-time student shall be for not less than four nor more than five units; for a part-time student the registration shall ordinarily be on the basis of such fraction of four units as corresponds to the time given to study. It should be clearly understood, however, that for second-year students, a mere accumulation of unit credit will not in itself entitle a student to the privilege of taking preliminary examinations, and that, for third-year students, such an accumulation of credits will not in itself entitle the student to admission to the final examination.

Period of Study.—The normal *minimum* period of study required for securing the degree of Doctor of Philosophy is three years, during which the student is required to devote all his working time to his studies. All three years must be spent in resident graduate study at some accredited educational institution and either the first two or the last one of the three must be spent at the University of Illinois. The degree is conferred, however, not for residence during a certain period, but for scholarly attainments and power of investigation, as proved by a thesis and examinations.

Work Done in Other Universities.—Credit for graduate work done in other universities is not "transferred." However, it may be accepted on examination as equivalent to resident work at the University of Illinois, provided the institution in which it was done is of high standing.

Examinations in Languages.—The student will be required to demonstrate his ability to read French and German and other languages needed in his work. (In special cases the executive faculty, on recommendation of the student's adviser, may substitute for either one of the languages usually required some other language which can be shown to be more useful in that student's professional research.) No student will be considered as beginning his second year of residence for graduate credit until he has passed the examination in at least one of these languages. Both the examination in French and that in German must be passed before the student is admitted to the preliminary examination in his major and minor subjects. For the dates of these language examinations consult the calendar at the beginning of the Graduate School Announcement, which also shows the dates when application for admission to these examinations must be made.

Examinations in Major and Minors.—Towards the end of his second year of study, or by special permission, at the beginning of his third year (not later than about November 1), a student who wishes to become a candidate for the degree must submit to a preliminary examination conducted by a committee appointed by the Dean. This examination is intended to test the student's knowledge of the fields of his major and minor subjects of study and to determine whether he is prepared for the final year of work for the doctorate. It is partly oral, and may be wholly so. The student will not be admitted to his preliminary examination until the faculty is satisfied that he has finished substantially the equivalent of two years' graduate work. He must do a full

year's graduate work between his preliminary examination and the completion of his work for the doctorate.

Final Examination.—At least two weeks before the time when the degree is conferred, the candidate must submit to a final examination, given by a committee appointed by the Dean. This examination is primarily on the research work of the student, as embodied in his thesis, but it is not confined to that. It extends to the whole field of study of the candidate. It will not be confined to the courses which the candidate has attended in the University of Illinois only, if he has done part of the work elsewhere; nor even to the field covered by the courses specifically taken in this or other universities; but will be so conducted as to determine whether the candidate has a satisfactory grasp of his major subject as a whole, and a general acquaintance with the fields of knowledge represented by his course of study.

The final examination may not be divided. The examination must be taken all at one time even though it requires several sessions.

If after having passed his preliminary examination, he fails in the third year of his study to meet the expectations of the professors in charge of his work, or in any way fails to maintain the standard of scholarship and power of research expected of him, he may be refused admission to the final examination.

Other Examinations.—Before the candidate is admitted to the final examination and the defense of his thesis, he may be required to take any other examination, oral or written, that is thought proper by the various departments in which he has studied. Such examinations are in addition to those regularly scheduled in the courses for which the student is registered.

Thesis.—The power of independent research must be shown by the production of a thesis on some topic connected with the major subject of study. The candidate is expected to defend his thesis or dissertation before the members of the faculty, or as many of them as may wish to question him, in connection with his final examination.

The subject of the thesis should be chosen not later than the end of the second year of residence and must be submitted for formal approval by the faculty not later than six weeks from the beginning of his third year of residence.

Two typewritten copies of the complete thesis, *the original on thesis paper* (no other will be accepted by the Dean), and the first carbon on plain paper of approximately the same weight, and in final form, must be deposited in the office of the Dean for presentation to the examining committee not later than two weeks prior to the final examination and not less than four weeks before the time when the degree is conferred. At the same time, the candidate must deposit with the Dean a manuscript of the essential part, or an abstract, or a digest of his thesis, in condition for publication at a cost not to exceed seventy-five dollars (\$75). The manuscript must be sufficient to show the method followed, the evidence used, and the conclusions reached in the investigation, and must bear the approval of the department and the Executive Faculty of the Graduate School.

The candidate must pay to the Comptroller before graduation the sum of seventy-five dollars (\$75) out of which the University will print at least one hundred copies of this manuscript for circulation by the University, unless the thesis entire or in abbreviated form is published by the author or is accepted for publication by a standard journal or publisher within a year from the date of graduation. In the latter event, and after one hundred copies have been presented to the University by the writer, the cash deposit shall be returned to him.

The typewritten and printed forms of the thesis must comply with the regulations given in "Instructions for the Preparation of Masters' and Doctors' Theses," copies of which may be obtained at the Dean's office.

Degree of Doctor of Philosophy in Engineering

The degree of Doctor of Philosophy in Engineering is offered in certain lines of academic work of a high scholastic type in engineering science for students who wish to prepare themselves as teachers, investigators, and experts. The general requirements for this degree, as to preliminary education, linguistic attainments, etc., are the same as in other subjects.

The following lines of engineering science, or others approved by the Graduate School, may be elected as majors: ceramic engineering; chemical engineering; coal-mining engineering; electrical engineering; heating and ventilation engineering; hydraulic and sanitary engineering; masonry construction and structural engineering; mechanical engineering; steam engineering.

The first minor may be in any of the above lines, or it may be one of the following sciences or an authorized combination of two of them: bacteriology; botany; chemistry; economics; geology; mathematics; physics (experimental or mathematical); theoretical mechanics; thermodynamics; zoology.

The second minor should be in other than engineering subjects.

Agricultural and Engineering Experiment Stations

Attention is called to the unusual opportunities for graduate study in connection with the Agricultural and Engineering Experiment Stations. By undertaking a line of graduate study in close association with some one of the projects carried on in those Stations, the student will come into contact with aspects of his specialty which he would rarely touch in a purely academic study, and he will thus broaden his outlook. The Experiment Stations make available apparatus, equipment, and the services of mechanics, which may materially facilitate the carrying on of investigations.

Scholarships, Fellowships, and Assistantships

A number of scholarships and fellowships have been established by the Trustees of the University open to candidates who are not over thirty years of age at the time when the appointment is to be made. To first-year graduate students of ability and promise there are open a number of scholarships carrying stipends of \$500 and exemption from the payment of the usual tuition. Fellowships open to second-year and third-year graduate students carry stipends of \$750 and \$900, respectively, and exemption from tuition. To be eligible for a \$900 fellowship, an applicant must pass his language examinations before the date for filing applications and must be prepared to take the preliminary examination in his major and minor subjects by the following June.

Application must be made on blanks to be obtained from the Dean of the Graduate School. These application forms should be sent to the Dean of the Graduate School as early as possible in February of the academic year preceding that for which the fellowship is desired. No application will be considered if received later than February fifteenth, until after April fifteenth, the date when appointees from the first list of applications must accept or refuse their appointments.

Persons appointed are notified on April first and must send the Secretary of the Board of Trustees notice of their acceptance or refusal by April fifteenth and must agree that, if accepted, the appointment will not be resigned to take a similar one in any other institution during the year for which it is awarded, and that they will not engage in any outside employment for remuneration.

Nominations to fellowships are made on the grounds of worthiness of character, scholastic attainments, and promise of success in the principal line of study or research to which the candidate proposes to devote himself.

Andersen Scholarship in Accountancy.—One scholarship is offered annually by Arthur Andersen, C.P.A., through the Arthur Andersen Research and Educational Fund, to a first-year graduate student in accountancy. It is awarded with a stipend of \$500 on recommendation of a committee of the College of Commerce and Business Administration selected for that purpose.

Carr Fellowship in Chemistry.—The Honorable Robert F. Carr, of the Class of 1893, gave in 1919 the sum of ten thousand dollars, the income of which is to be used as the stipendium of a fellowship in chemistry or chemical engineering.

Sahara Coal Company Scholarships and Fellowships in Mining Engineering.—A number of graduate scholarships and fellowships in mining engineering have been established by the Sahara Coal Company. One or more are awarded each year, with a stipend of \$700, on recommendation of the Department of Mining and Metallurgical Engineering. They are for one to three years of graduate study and research in coal mining engineering.

Sharp Scholarship in Library Science.—The Katharine L. Sharp scholarship was endowed in 1933 by the University of Illinois Library School Association as a memorial to the founder of the Library School. It is awarded, with a stipend of \$300 and exemption from tuition, on recommendation of the Library School faculty.

Research Graduate Assistantships in the Engineering Experiment Station.—The Engineering Experiment Station is devoted to the study of problems of special importance to engineering and to manufacturing, railway, mining, and industrial interests.

and the stimulation and elevation of engineering education. Approximately fourteen research graduate assistantships with a nominal stipend have been established, open to graduates of approved technical schools and universities. Applicants to whom these graduate assistantships are awarded agree to hold them for two years, devoting one-half their time to the work of the Engineering Experiment Station. At the end of this period, if all requirements have been met, the degree of Master of Science will be conferred. Several additional assistantships are usually maintained by industrial organizations. Applications for graduate assistantships should be made to the Director of the Engineering Experiment Station not later than March 1.

Assistantships.—Applications for assistantships should be made to the head of the department in which the assistantship is desired.

The Illinois Historical Survey

PROFESSOR THEODORE CALVIN PEASE, Ph.D., Director

The Illinois Historical Survey is a department of the Graduate School, established in 1910 to conduct research in the history of the State of Illinois. It possesses extensive collections of source materials for western history and is continually adding to them. It assisted the Illinois State Historical Library in the publication of these and other materials in the *Illinois Historical Collections*. It offers to graduate students direction in the preparation of theses or monographs based on its collections.

The School of Journalism

FOR THOSE WHO HAVE HAD TWO YEARS OF COLLEGE WORK the School of Journalism offers an additional two years of professional training, leading to the degree of Bachelor of Science in Journalism. The editorial curriculum is designed for those wishing to prepare themselves for positions as editors, reporters, and feature writers. The advertising curriculum is intended especially for those expecting to enter the advertising departments of newspapers, magazines, radio stations, industrial organizations, or retail stores. The publication management curriculum is planned for those who are particularly interested in management and circulation, or in community journalism, or in trade and technical publications. The radio curriculum prepares students for all forms of radio journalism. Instruction in this curriculum makes use of the radio facilities operated jointly by Radio Station W I L L and the School of Journalism.

Students planning to enter the School of Journalism are advised to register as pre-journalism freshmen and sophomores following either the regular program or that of the Division of General Studies in the College of Liberal Arts and Sciences. Courses in English literature and rhetoric, foreign languages, physical sciences, and social studies are recommended as desirable preparation for the profession of journalism. The ability to use a typewriter should be acquired before entering this school.

Instruction in journalism at the University of Illinois was begun in 1902 as part of the courses in rhetoric and was organized as a division of the Department of English in 1916. The School of Journalism was established in 1927 as a separate administrative unit, and in 1941 it was moved into quarters designed especially for its use in Gregory Hall. It is an accredited Class A school under standards of the American Association of Schools and Departments of Journalism.

For *admission*, see pages 99 and 108; for *fees*, see page 118; for *honors*, see page 117; for *prizes and awards*, see page 136; for *clubs and societies*, see page 129; for regulations concerning *unclassified students*, see page 106; for general University requirements for *graduation*, see page 114; for *conferences and short courses*, see page 476.

Journalism Library, Laboratories, and Equipment

A branch of the University Library is located in Gregory Hall, consisting of approximately 4,000 volumes especially selected for the students in journalism. It receives 42 daily newspapers and 93 magazines. The reading room has 60 chairs, and the newspaper stack room is equipped with individual study tables. The morgue contains clippings concerning the University's departments, faculty members, research agencies, and student organizations. Exhibits of photographs and books are arranged periodically.

Besides the usual classrooms, there are specially equipped laboratories. One classroom has press-box desks, and others have individual reporters' desks and typewriters. The printing laboratory is equipped with a linotype machine, two job presses, two proof presses, a casting box, a paper cutter, a "one-man" engraving outfit, and 112 fonts of type. The room designed for the production of the *Illini Observer*, the laboratory newspaper, is connected to the printing laboratory and is equipped with a universal desk for the instructor and with reporters' desks for the students. In the copy-desk laboratory, which has two universal desks and individual typewriter desks, the students have the use of Press Association radio copy and United Press dispatches from telegraph-printer machines. In connection with the studio for experiments in photography, four darkrooms are equipped for developing and drying films, and six for making contact prints and enlargements. Speed Graphic cameras are available for classroom and outdoor work. In the laboratory for preparing advertising copy and layouts, the equipment includes mat services, type charts, catalogs, and reference materials. For students of

community journalism there is a newsroom equipped with a copy desk, typewriter desks, and files of weekly newspapers from towns throughout Illinois. A collection of manuscripts, cartoons, and books by graduates of the University was given to the School of Journalism in 1942 by C. A. Kiler, of Champaign, and is kept in a special workroom.

Opportunities for Practical Experience

Students in the School of Journalism have opportunities for practical experience on the editorial and business staffs of the *Daily Illini*, which is a morning newspaper issued five days a week; the *Illio*, yearbook of the graduating class; the *Illinois Technograph*, quarterly magazine edited by students in the College of Engineering; the *Illinois Agriculturist*, monthly magazine edited by students in the College of Agriculture; and various house organs of fraternities and sororities. The official student publications are under the general management of the Illini Publishing Company, a non-profit corporation, which maintains its own printing plant on the campus. Students of exceptional ability have further opportunities as reporters for the *Illinois Alumni News*, monthly magazine of the Alumni Association, and as correspondents for newspapers published in Champaign and Urbana and other cities of Illinois. Special facilities for training are afforded by the University's radio station WILL, with its broadcasting studios in Gregory Hall.

Requirements for Graduation

A candidate for the degree of Bachelor of Science in Journalism must (1) meet the general University requirements with respect to registration, residence, scholarship, and fees; (2) complete 64 semester hours of work in a curriculum of the School of Journalism, including not less than 30 nor more than 40 hours of credit in professional courses of junior-senior level, and the balance in social studies, arts, sciences, and other subjects approved by the faculty; and (3) obtain as many grade-points as credit hours in courses taken at the University of Illinois and presented for the degree, except that the 60 hours required for admission to the School of Journalism and the military science and physical education required by the University are not included in the computation of grade-points for this purpose.

Attention is called to the general requirement that a student who enters the University without at least one unit of high school work in a laboratory science must substitute five hours of a laboratory science for five hours of free electives in the requirements for graduation.

Editorial Curriculum

For the Degree of Bachelor of Science in Journalism

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Journ. 4—Typography	2	Journ. 6—Reporting	3
Journ. 5—Reporting	3	Journ. 18—Press and Public Opinion	3
Journ. 17—History of Journalism	3	Journalism electives	3
Advanced Social Studies	3-6	Advanced Social Studies	3-6
Electives	2-4	Electives	2-4
<i>Total</i>	15-18	<i>Total</i>	15-18

Fourth Year

Journ. 13—Copyreading	3	Journ. 14—Copyreading	3
Journ. 29—Advanced Reporting; or Journ. 54—Publication of <i>Illini</i> <i>Observer</i>	3	Journalism electives	4
Advanced Social Studies	3-6	Advanced Social Studies	3-6
Electives	2-4	Electives	2-4
<i>Total</i>	15-18	<i>Total</i>	15-18

Advertising Curriculum

For the Degree of Bachelor of Science in Journalism

Third Year	HOURS	Fourth Year	HOURS
Journ. 4—Typography	2	Journ. 34—Newspaper Advertising Problems	3
Journ. 5—Reporting	3	or Journ. 39—Radio Advertising	2
Journ. 10—Principles of Advertising	3	Journ. 38—Advertising Campaigns	3
Journ. 26—Ad. Copy and Layout I	4	B.O.O. 22—Market Research and Policies	3
B.O.O. 2—Marketing Org. and Operation	3	Journalism Courses	7-8
Econ. 1—Principles of Economics	5	Electives	16
or Econ. 2—Elem. of Economics	3		
Journalism Courses	5		
Electives	7-9		
<i>Total</i>	32	<i>Total</i>	32

Electives

Recommended electives in other colleges approved as counting towards the required 20 hours in social sciences:

	HOURS
Art 21a—Freehand Drawing; or Art 25a—Introduction to Design	2
Bus. Law 2—Elementary Law of Business	3
B.O.O. 3—Retailing	3
B.O.O. 7—Salesmanship	2
B.O.O. 17—Sales Administration	2
B.O.O. 29—Problems of Market Research	3
B.O.O. 30—Problems in Retail Store Management	2
Econ. 15—Consumer Economics	3
Econ. 41—Labor Problems	3
Econ. 70 or Math. 22—Statistics	3
Home Econ. 7—Textiles and Clothing	3
Psych. 1—Introduction to Psychology	4
Psych. 8—Emotion and Motivation	3
Psych. 14—Social Psychology	3
Rhet. 22—Special Types of Business Writing	2
Sociol. 1—Principles of Sociology	3
Sociol. 3—Social Evolution	3
Sociol. 10—Population Problems	3
Sociol. 11—Sociology of the Region	3

Recommended journalism electives:

Journ. 3—Principles of Broadcasting	2
Journ. 11—Newspaper Law	3
Journ. 17—History of Journalism	3
Journ. 18—Press and Public Opinion	3
Journ. 22—Radio Law	2
Journ. 23—Press Photography	3
Journ. 41—Newspaper Management I	3
Journ. 52—Public Relations	2

Publication Management Curriculum

For the Degree of Bachelor of Science in Journalism

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Journ. 4—Typography	2	Journ. 6—Reporting	3
Journ. 5—Reporting	3	Journ. 26—Advertising Copy and Layout I	4
Journ. 10—Princ. of Advertising	3	Journ. 41—Newspaper Management I	3
Accy. 12—Fundamentals of Accounting ¹	3	Advanced Social Science Subjects	3-5
Econ. 2—Elements of Economics ¹	3	Electives	2-3
Advanced Social Science Subjects	2-4		
<i>Total</i>	16-18	<i>Total</i>	15-18

¹ Students who present credit for a course in accounting and a course in elementary economics for entrance to the School of Journalism should choose electives or advanced social science subjects instead of Econ. 2 and Accy. 12.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Journ. 11—Newspaper Law; <i>or</i>		Journ. 34—Newspaper Advertising	
Journ. 13—Copyreading	3	Problems; <i>or</i> Journ. 43—Circulation and Promotion	3
Journ. 15—Trade and Technical Magazines; Journ. 21—Community and Country Journalism; <i>or</i> Journ. 42—Newspaper Management	3	Journalism Electives	4
Journ. 17—Hist. of Journalism; <i>or</i>		Advanced Social Science Subjects	4-6
Journ. 18—Press and Public Opin.	3	Electives	2-3
Advanced Social Science Subjects	4-6		
Electives	4-5		
<i>Total</i>	15-18	<i>Total</i>	15-18

During their fourth year students are advised to elect course combinations in line with their field of specialization as follows: Journ. 15, 34, or 43, Trade and Technical Publication Management; Journ. 21, 34, or 43, Community Newspaper Management; Journ. 42, 34, or 43, Daily Newspaper Management.

Electives

Recommended electives in other colleges approved as counting towards the required 20 hours in social sciences:

	HOURS
Bus. Law 2—Elementary Law of Business	3
B.O.O. 2—Marketing Organization and Operation	3
B.O.O. 3—Retail and Chain Store Organization and Operation	3
B.O.O. 4—Management in Manufacturing	3
B.O.O. 7—Salesmanship	2
Econ. 3—Money, Credit, and Banking	3
Econ. 41—Labor Problems	3
Econ. 42—Trade Unionism	3
Econ. 43—Personnel Administration	3
Econ. 70, 71, <i>or</i> Math. 22—Statistics	3
Hist. 24—History of Illinois	2
Land. Arch. 74—Regional Planning	3
Pol. Sci. 4—Municipal Government	3
Pol. Sci. 5—American Constitutional System	3
Pol. Sci. 16—Government in Illinois	2
Pol. Sci. 20—Rural Local Government	3
Pol. Sci. 34—Municipal Problems	3
Psych. 14—Social Psychology	3
Sociol. 1—Principles of Sociology	3
Sociol. 6—Sociology of the City	3
Sociol. 7—Rural Sociology	3

Recommended journalism electives:

Journ. 3—Principles of Broadcasting	2
Journ. 20—Editorial Studies and Writing	3
Journ. 23—Press Photography	3
Journ. 35-36—Contemporary Affairs	4
Journ. 38—Advertising Campaigns	3
Journ. 39—Radio Advertising	2

Minor in Home Economics

For a minor in home economics the student must complete a minimum of 20 hours in home economics, including 7 hours of required courses as indicated below:

	HOURS
Home Econ. 7—Textiles and Clothing.....	3
Home Econ. 38—Elementary Nutrition; <i>or</i> Home Econ. 4—Introduction to Foods and Nutrition.....	2
Home Econ. 80—Home Management.....	2
Electives.....	13
<i>Total</i>	<u>20</u>

Thirteen hours of electives must be selected from the following courses: Home Econ. 2—Home Architecture; Home Econ. 3—Home Decoration; Home Econ. 42—History of Costume; Home Econ. 55—Fashion Analysis; Home Econ. 56—The Child and His Development; Home Econ. 56b—Laboratory in Child Development; Home Econ. 61—Introduction to Foods; and Home Econ. 70—Clothing Selection.

The home economics minor may be substituted for the requirement of 20 hours in advanced social science subjects.

Minor in Teacher Training in Journalism

The teaching minor in the field of journalism requires a minimum of 16 hours in journalism as follows:

	HOURS
Journ. 4—Typography.....	2
Journ. 5—Reporting.....	3
Journ. 10—Principles of Advertising.....	3
Journ. 13—Copyreading.....	3
Journ. 47—High School Journalism.....	3
Electives.....	2-3

Recommended electives: Journ. 3—Principles of Broadcasting; Journ. 6—Reporting; Journ. 16—Feature Article Writing; Journ. 17—History of Journalism; Journ. 18—Press and Public Opinion; Journ. 23—Press Photography.

Radio Curriculum

For the Degree of Bachelor of Science in Journalism

Third Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
Journ. 3—Principles of Broadcasting.....	2		Journ. 6—Reporting.....	3	
Journ. 5—Reporting.....	3		Journ. 39—Radio Advertising.....	2	
Journ. 10—Principles of Advertising.....	3		Advanced Social Studies.....	3-6	
Advanced Social Studies.....	5-7		Electives.....	7	
Speech 10 ¹	2				
<i>Total</i>		<u>15-17</u>	<i>Total</i>		<u>15-18</u>

Fourth Year

Journ. 11—Newspaper Law.....	3	Journ. 22—Radio Law.....	2
Journ. 30—Radio News.....	3	Journ. 44—Radio Production and Direction.....	3
Advanced Social Studies.....	3-6	Advanced Social Studies.....	3-6
Electives.....	6	Electives.....	7
<i>Total</i>	<u>15-18</u>	<i>Total</i>	<u>15-18</u>

¹ Students entering the School of Journalism with credit in Speech 10 or equivalent may take three hours of electives. The following courses are recommended electives: Speech 7 (Methods and Materials of Public Discussion), B.O.O. 7 (Salesmanship), Journ. 13 (Copyreading), Journ. 26 (Advertising Copy), and Journ. 31 (Script Writing).

The College of Law

IN TRAINING MEN AND WOMEN FOR THE PRACTICE OF LAW the College of Law seeks to inculcate an appreciation of the purpose of law in the social order and an understanding of the development of law and the necessity of its growth as conditions change. To this end the decisions of the courts are studied in relation to the social and economic forces that influence trends in the law. Emphasis is placed on the responsibility of lawyers to society for the rational development and improvement of the law, both in its substance and in its administration.

The faculty recognizes that some graduates of this college will not enter the practice of law but will go into government service or will become teachers or legislators or judges. The program of study therefore includes not only courses for those who are preparing themselves for general practice, but also a number of courses in special fields.

The case method of instruction is employed, especially in the courses of the first and second years. Through analysis of selected cases and statutes and through discussion of principles deduced from them, the students are introduced to materials used in the practice of law and are taught to make discriminations and to reason by analogy. The seminar method is used in some of the advanced courses, in which legal materials are studied in the context of disciplines related to law.

The College offers two curricula: a three-year program in law which is intended for students who have completed three or four years of college work; and a four-year program for those who have had two years of prelegal college work. (See statement on page 109 on modifications of these programs for veterans.)

For *admission*, see pages 99 and 108; for general University requirements for *graduation*, see page 102; for regulations concerning *unclassified students*, see page 107; for *prizes and awards*, see page 136; for *fees*, see page 118. A more extended statement on the program of the College of Law may be obtained by writing to the Dean of the College of Law, 301 Altgeld Hall, Urbana, Illinois.

Curricula and Degrees

Each student may choose one of the following programs, which allow combinations of courses leading to various degrees. (For modifications of the prelegal requirements for veterans, see page 108.)

(1) He may pursue his college course for at least three years before entering the three-year curriculum in law. If he follows this program, and if he has spent at least one year in residence as an undergraduate in the University of Illinois, thirty-two hours of law may be credited toward the degree of Bachelor of Arts in the College of Liberal Arts and Sciences, or thirty hours toward the degree of Bachelor of Science in either the College of Commerce or the College of Agriculture. In this manner he may obtain in six years both the degree of A.B. or B.S. and a degree in law (LL.B. or J.D.).

(2) If a student pursues his college course for only two years and then enters the four-year curriculum in law, he can, after two years in the College of Law, obtain the degree of Bachelor of Science in Law, and after two additional years a professional degree in law (LL.B. or J.D.). In this curriculum he will be required to register in certain courses particularly designed for it.

Prelegal Study

Students contemplating the study of law are advised to consult with the Student Personnel Bureau of the University relative to their interests and aptitudes for law, and with members of the law faculty in regard to their plans. The prelegal courses they take constitute a highly important phase of their education, and this work should be planned with care.

Students taking the curriculum leading toward degrees in both liberal arts and law, or commerce and law, or agriculture and law, should comply with the group, major, and minor requirements of the college in which their prelegal work is taken. Such students are urged to complete all of these requirements before entering the College of Law in order that they may devote their entire time to the first year of the law curriculum.

The prospective law student is advised to choose his work, beyond those subjects prescribed in the college in which he is registered, from among the following fields: English, with special emphasis on rhetoric and speech; political science; history, with emphasis on American and English constitutional history; economics; philosophy, and particularly logic; Latin; psychology; sociology; mathematics; and accountancy.

Most students in their prelegal work emphasize courses in the social sciences. These provide an excellent background for law, and students carrying majors in other fields should take as much work as possible in the social sciences. The curriculum in the Division of General Studies of the College of Liberal Arts and Sciences offers a well-balanced program for prelegal students. Attention is also called to the fact that engineering and law, agriculture and law, and chemistry and law are very good combinations in the preparation they give for special fields of practice.

Transfer of Credit

Students from law schools of approved standing who comply with the requirements for admission to this college may receive by transfer not to exceed two years of credit. The amount of credit given for work taken in another school is conditioned upon the standards of the school and the grades the student has received. As a rule, credit will be given only in subjects in which the applicant has secured a grade ten per cent above the passing mark, or, where the letter system of grading is employed, one letter above the passing grade.

Three-Year Curriculum in Law

The courses of the first year in this curriculum are prescribed as shown in the following outline. The courses of the second and third years are elective. Fifteen hours of law work are enough to occupy a student's full time; he can not register for more without special permission.

First Year	HOURS
Law 1a—Contracts I.....	3
Law 1b—Contracts I.....	3
Law 2a—Torts.....	3
Law 2b—Torts.....	3
Law 3—Legal Method and Personal Property.....	3
Law 4a—Remedies.....	3
Law 5—Criminal Law.....	3
Law 7a—Real Property I.....	2
Law 10—Equity.....	3
Law 22—Constitutional Law.....	4
<i>Total</i>	<u>30</u>

Four-Year Curriculum in Law

The prescribed courses of the first year of the four-year program are here outlined. The maximum number of hours for which a student may register in any semester is fifteen.

First Year	HOURS
Law 1a—Contracts I.....	3
Law 1b—Contracts I.....	3
Law 2a—Torts.....	3
Law 2b—Torts.....	3
Law 3—Legal Method and Personal Property.....	3
Law 4a—Remedies.....	3
Law 6—Development of the Common Law.....	3
Law 7a—Real Property I.....	2
Law 12—Accounting.....	3
Law 22—Constitutional Law.....	4
<i>Total</i>	<u>30</u>

Grades and Credits

Regular written examinations are given at the close of each semester in all subjects except those in which such an examination is impracticable.

A student in the College of Law will be dropped from the University if at the end of his first year of residence he has not secured an average of 3.0 in his work; or if at the end of any subsequent year of residence, except the final year of the curriculum in which he is registered, he has failed to secure an average of 3.0 in all of his law work taken up to that time; or if he has failed in any semester to pass in at least eight hours of the work in which he was registered; or if, being registered in less than eight hours in a semester, he has not passed all his courses. A student who, at the end of the final year of the three-year or four-year curriculum, has failed to secure an average of 3.0 in all law work taken by him in this college will be permitted to continue only by special permission granted on petition.

In order to count resident study in full satisfaction of the time requirement, a student must carry courses aggregating not less than ten hours a week each semester or term. Proportional credit toward the time requirement is awarded to students carrying less than ten hours a week.

Requirements for Graduation

The law degree for which a student is eligible is determined by the curriculum in which he has been enrolled, the number of years of law work which he has completed, and the grades which he has received.

The degree of Bachelor of Science (B.S.) is conferred on a student who has completed the first two years of work (58 credit hours) in the four-year curriculum in law and has received grades averaging at least "C" (3.) in all courses taken in the College of Law.

The degree of Bachelor of Laws (LL.B.) is conferred on a student who has completed either the four-year curriculum (112 credit hours) or the three-year curriculum (84 credit hours) and has received grades averaging at least "C" (3.) in all courses taken in the College of Law. In the three-year curriculum the student must have studied law for a period equal to three academic years in order to qualify for the degree.

The degree of Doctor of Law (J.D.) is conferred on a student who has secured the B.S. degree in law (see above) or a bachelor's degree in an approved undergraduate college and has completed the work required for the degree of Bachelor of Laws (as stated above) and has obtained a minimum grade average of "B" (4.) in all courses taken in the College of Law.

Honors

A student who complies with the requirements for graduation from the College of Law (degree of B.S. or LL.B. or J.D.) and who attains in all work done in this college that is presented for his degree the average grade specified below, may be recommended by the University Senate for the honors stated: For an average grade of not less than 4.35, graduation with Honors; for an average grade of not less than 4.75, graduation with High Honors. The honors conferred are noted on the diploma and in the Commencement program.

Scholarships

A number of full-tuition scholarships, not exceeding four, and an additional number of half-tuition scholarships, not exceeding four, are available at the end of each semester to those students in the College of Law who have made the highest averages in their law work in the two preceding semesters in which they were in attendance.

To be eligible a student must have been registered as a regular student in the College of Law both semesters, and have taken at least 26 hours of work of which not less than 20 hours must have been in law.

A student who does not return the following semester may use his scholarship subsequently, provided a period of not more than one calendar year shall have intervened.

Order of the Coif

The Order of the Coif is a national honorary law fraternity, the first chapter of which was established at the College of Law in 1902. Each year the local chapter elects to membership from the highest ten per cent of the senior class those students who are deemed qualified.

Illinois Bar Journal

The section on "Current Law" in the *Illinois Bar Journal*, official publication of the Illinois State Bar Association, is prepared by a board of student editors who are chosen by the faculty on the basis of the best notes submitted in a competition to which all students who have attained a designated average grade are eligible. This editorial work is done with the advice of members of the faculty, and it forms a part of the educational program of the college.

Junior Bar Association

The Junior Bar Association of the College of Law is an affiliate of the Illinois State Bar Association. Its purpose is to bring students into closer contact with the active bar of the state and to promote a consciousness of professional responsibility. Membership in it is open to all students and entitles them to many privileges in the state organization. All its activities, including moot-court competitions and round-table discussions, are under the direction of student officers.

The College of Liberal Arts and Sciences

FOR THOSE WHOSE PRIMARY AIM IS LIBERAL EDUCATION, THE College of Liberal Arts and Sciences provides a curriculum in the Division of General Studies consisting of a unified two-year program of basic courses. In this curriculum and also in the general curriculum of this college, the purpose is a well-balanced personal development with an understanding of the forces, tendencies, and conflicts of the present age in the light of the intellectual and cultural heritage of the past. For the curriculum in the Division of General Studies, see page 232.

The general curriculum in Liberal Arts and Sciences (page 233) requires a nucleus of courses in literature or philosophy, social studies and natural sciences, a reading knowledge of at least one foreign language, and a certain amount of concentration in the subjects chosen as majors and minors. Students in this curriculum are encouraged to develop interests and talents supplementing their major subjects and to take courses with cultural values, such as art, literature, music, and others listed as electives.

All students planning for more advanced study after graduation, especially if they hope to engage in research, are encouraged to arrange their programs with reference to the requirements for admission to the Graduate School, and provision is made for those who wish to prepare themselves for various professions and vocations. Graduates from the College of Liberal Arts and Sciences may enter the Library School for a year of special training in librarianship (page 266).

Chemistry and Chemical Engineering.—Chemistry may be taken as a major subject in the general curriculum, or as a minor subject, or as an elective independent of the major and minor subjects. For more specialized training, however, separate curricula are offered in chemistry and in chemical engineering (page 236), the latter requiring certain fundamental courses in several departments of the College of Engineering.

Home Economics.—Students desiring to specialize in home economics may make it their major subject in the general curriculum of this college as an alternative to the curricula in home economics offered by the College of Agriculture (page 155) and the College of Education (page 169). Certain courses in home economics may be elected by students not specializing in that subject.

International Affairs.—This curriculum is sponsored by the Division of the Social Sciences, and its completion satisfies the requirement for a minor in the departments of Economics, Geography, History, Philosophy, Political Science, and Sociology. (See page 236.)

Pre-Dentistry.—The minimum requirements for admission to the College of Dentistry may be met by students who complete only two years of work identical to the first two years of the pre-medical curriculum (page 240). Students planning to study dentistry may register as “pre-dental” freshmen and sophomores, with special advisers, or may follow the general curriculum of liberal arts and sciences for more than two years in order to obtain not only the necessary basic courses in the natural sciences but also more cultural courses.

Pre-Journalism.—Students considering journalism as a profession are advised to take two years of work in the general curriculum of liberal arts and sciences or the curriculum of the Division of General Studies, selecting fundamental courses which will admit them to the School of Journalism (page 220).

Pre-Law.—Students preparing for the study of law ordinarily complete the first three years of the general curriculum in liberal arts and sciences or the program of the Division of General Studies before entering the College of Law (page 225). During their senior year they may, if scholastically qualified, elect courses equivalent to the first year of work in that college and thus complete the requirements for graduation from this college while making progress toward a degree in law. An alternative arrangement permits students to begin the four-year curriculum in law after only two years of pre-legal study.

Pre-Medicine.—Students intending to study medicine may first complete the four-year general curriculum in liberal arts and sciences, with major and minor subjects chosen from the physical and biological sciences, and thus have the benefit of a more liberal culture than is afforded by the minimum requirements for admission to the College of Medicine. Those who wish to enter the College of Medicine after three years of undergraduate work may enroll, if scholastically qualified, in the pre-medical curriculum outlined on page 240. (Students interested in medical technology as a vocation should inquire at the office of the Dean of the College of Liberal Arts and Sciences.)

Occupational Therapy Curriculum.—This curriculum consists of five semesters of work on the Urbana campus and five terms at the College of Medicine. Upon satisfactory completion of the work of this curriculum, the student is eligible for the degree of Bachelor of Science in Occupational Therapy from the College of Medicine. Students who wish to have the benefit of a more liberal culture than is afforded by the minimum requirements in this curriculum may complete the work for a bachelor's degree in the College of Liberal Arts and Sciences before making application for admission to the professional work at the College of Medicine. For the five-semester curriculum on the Urbana campus, see page 241.

Teacher Training.—Prospective teachers who are registered in the College of Liberal Arts and Sciences should register in one of the teacher-training curricula and indicate their choice of teaching field so that they may have their study program approved by one of the special advisers in the chosen field. Satisfactory completion of one of these curricula meets in full the course requirements of the state law for certification of teachers.

Individual Curricula and Tutorial Work.—For superior students who have had at least one year of undergraduate work in residence at the University, individual curricula may be arranged to serve other purposes than those accomplished by the conventional curricula mentioned above. Opportunities for independent study under the guidance of faculty members, supplementing the classroom instruction, are available under the tutorial system (page 231).

Transfers.—Students transferring from other colleges are welcomed if they give satisfactory evidence of their ability to succeed in this college. Students in this college are free to transfer at any time to other colleges, or from one curriculum to another within this college, if they are properly qualified.

For *admission*, see page 99; for the *buildings* used by this college, see page 92; for *museums and collections* under its care, see page 96; for *clubs and societies* auxiliary to its curricula, see page 129; for *prices and awards*, see page 136; for *fees*, see page 118; for general University requirements for *graduation*, see page 114; for graduation requirements in this college, see page 231; for regulations concerning *unclassified students*, see page 107.

James Lectures on Government

An annual lectureship on government was established in 1935 by a gift from Mrs. G. E. Frazer as a memorial to her father, Edmund J. James, who was President of the University of Illinois, 1904-1920. These lectures, delivered during the spring of each year, are published in series of three. The fourth series will be published in 1947.

Departments and Divisions

To correlate the work of departments in the College of Liberal Arts and Sciences, the following groups are organized: (1) the *Division of Biological Sciences*, consisting of Bacteriology, Botany, Entomology, Psychology, Zoology and Physiology; (2) the *Division of Humanities*, consisting of the Classics, English (including rhetoric and speech), French, German, Spanish and Italian (including Portuguese); (3) the *Division of Social Sciences*, consisting of Economics (a department in the College of Commerce), Geography, History, Philosophy, Political Science, Psychology, Sociology, and courses in Social Welfare Administration. Other departments in this college are: Astronomy, Chemistry (including chemical engineering), Geology, and Mathematics.

Graduate as well as undergraduate work is conducted in all departments of this college, and courses in all these departments are taken by students enrolled in other colleges and schools of the University. The work of the faculty of this college thus serves all curricula that include the humanities, natural sciences, and social sciences.

Individual Curricula

A limited number of sufficiently gifted and mature students may make arrangements for individual curricula, the satisfactory completion of which will lead to the degree of Bachelor of Arts or Bachelor of Science. The main purpose of such curricula is to serve the needs of superior students who can profit more from individual programs of studies than from any of the conventional programs. In general, the following regulations govern the operation of individual curricula:

(a) A student may make application to the assistant dean of the college for admission to an individual curriculum after the completion of at least 27 semester hours in residence at the University with an average of at least 4.0.

(b) The acceptance of a student for registration in an individual curriculum requires the approval of the college and of the major department concerned.

(c) Each candidate must meet the general University requirements with respect to registration, residence, fees, hygiene, military science, physical education, and rhetoric, and obtain credit in approved courses totaling at least 120 semester hours.

(d) Having once been admitted to an individual curriculum, a student must maintain an average grade of at least 3.5 while registered therein, or be transferred to one of the established curricula.

Tutorial Work

Under the tutorial system, students in the College of Liberal Arts and Sciences have opportunities for independent study and investigation. Before beginning tutorial work, a student must ordinarily have completed Groups A and B of the requirements for the general curriculum or the freshman-sophomore program of the Division of General Studies, have attained junior standing, with at least a 4.0 academic average in work taken at the University (exclusive of courses in military science and physical education), and have given promise of being able to do independent work in the proposed field of investigation. Applications are subject to approval by the department concerned and by the assistant dean of the college, and should ordinarily be filed before the close of the sophomore year. In the case of departments in which required sequential courses extend through the junior year, applications may be deferred until the beginning of the senior year.

Students whose applications are accepted will register for "Tutorial Work." Such students should normally register for 16 hours of credit in any one semester, of which not more than 12 hours may be in formal class work. However, it is permissible to leave undetermined the number of hours credit in tutorial work until the close of the semester. In such cases, the amount of credit is determined by the assistant dean on recommendation of the tutor and the department concerned.

Honors at Graduation

At graduation the honors awarded to superior students who do not elect tutorial work are designated as Honors, High Honors, and Highest Honors. They are awarded and graded according to the following rules:

(a) All candidates for honors must present an acceptable thesis or pass a comprehensive examination based on a course of study approved by the department of specialization or another competent body. The thesis course or special course of study must carry credit for not less than four semester hours.

(b) For the degree with Honors, the student must be recommended for Honors by his department of specialization, and have earned an average of 4.0 in all courses counted toward graduation from this college.

(c) For the degree with High Honors, a student must be recommended for High Honors by his department, and have earned an average of 4.25 in all courses counted toward graduation from this college. The thesis or comprehensive examination must give evidence of unusual ability.

(d) For the degree with Highest Honors, a student must be recommended for Highest Honors by his department, and have earned an average of 4.5 in all courses counted toward graduation from this college. The thesis or comprehensive examination must give evidence of exceptional ability.

For graduation with honors, the notation on the diploma reads: Honors in ———; High Honors in ———; Highest Honors in ———. (The name of the student's subject or subjects of specialization will ordinarily be added.) Such honors are recommended by the head of the department of specialization and are subject to the approval of the dean of the college.

Honors in Tutorial Work.—The honors to be awarded at graduation to superior students upon completion of their tutorial work are designated as Tutorial Honors, High Tutorial Honors, and Highest Tutorial Honors. They are awarded and graded solely on the basis of the general examination given at the close of the tutorial course. For graduation with honors in tutorial work, the notation on the diploma reads: Tutorial Honors in ———; High Tutorial Honors in ———; Highest Tutorial Honors in ———. (The name of the student's subject or subjects of specialization may be added.) Such honors are recommended by the head of the department of specialization and are subject to the approval of the dean of the college.

Curriculum in the Division of General Studies

The Division of General Studies offers a two-year program at the end of which a student (1) may transfer his credit into other curricula of the College of Liberal Arts and Sciences or some of the other colleges, or (2) may bring his formal university career to a temporary or final close. In the latter case, if he so desires and if he has fulfilled successfully all requirements, the student will be awarded the certificate of Associate in Arts.

General Courses

The work of this curriculum is based on seven general courses, one in each of the following fields: (1) verbal expression, (2) history of civilization, (3) biological science, (4) physical science, (5) social science, (6) literature and the fine arts, (7) philosophy and psychology. The subject matter in these courses takes into account both the nature of the field and the educational needs of students. Each course extends through two semesters and gives eight semester hours of credit toward graduation. Students receive grades at the end of each semester, however.

In all these courses the general purpose is the introduction of the student to the points of view and methods of exploration characteristic of each field, to enable him to discover and make use of its resources for individual and social living. As a group, these courses are planned to supplement and support one another. The emphasis throughout is on continuous growth and integration.

All members of the teaching faculty who conduct these courses are of the rank of instructor or above. Each discussion class is limited to twenty students, so that each student can receive individual instruction and participate in the general exchange of views within the class as a group.

Each student normally completes three of these general courses in his freshman year and three more of them in his sophomore year. At least six of the seven, including the first four listed above, should be completed by the end of the sophomore year.

Most of the required courses in the Division of General Studies, listed below, are accepted as fulfilling the prerequisites for advanced courses offered by other departments of the University.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
D.G.S. 1a—Verbal Expression.	4	D.G.S. 1b—Verbal Expression.	4
D.G.S. 2a—History of Civilization.	4	D.G.S. 2b—History of Civilization.	4
D.G.S. 3a—Biological Science; <i>or</i>		D.G.S. 3b—Biological Science; <i>or</i>	
D.G.S. 4a—Physical Science.	4	D.G.S. 4b—Physical Science.	4
Elective ¹	2-4	Elective ¹	2-4
Military Science (for Men).		Hygiene 2 or 5.	2
Physical Education.		Military Science (for Men).	
		Physical Education.	
<i>Total</i>	12-16	<i>Total</i>	14-18

Second Year

D.G.S. 3a—Biological Science; <i>or</i>		D.G.S. 3b—Biological Science; <i>or</i>	
D.G.S. 4a—Physical Science.	4	D.G.S. 4b—Physical Science.	4
<i>Two of the following:</i>		<i>Two of the following:</i>	
D.G.S. 5a—Social Science.	4	D.G.S. 5b—Social Science.	4
D.G.S. 6a—Literature and Fine Arts.	4	D.G.S. 6b—Literature and Fine Arts.	4
D.G.S. 7a—Psych. and Philos.	4	D.G.S. 7b—Psych. and Philos.	4
Elective ¹	2-4	Elective ¹	2-4
Military Science (for Men).		Military Science (for Men).	
Physical Education.		Physical Education.	
<i>Total</i>	12-16	<i>Total</i>	12-16

Students from outside the Division may elect one or more of the seven courses and will receive full credit for each semester successfully completed.

Transferring to Other Curricula

If at the end of the second year in the Division of General Studies a student transfers to the general curriculum in the College of Liberal Arts and Sciences, he should make sure that he has fulfilled the college requirement for foreign language. If he has successfully completed six of the seven Divisional courses, he will have fulfilled the new "general-education" requirements of the College.

The two-year program of the Division is highly recommended as preparation for the professional curricula in the College of Law (four-year curriculum), the School of Journalism, and the College of Education, which require junior standing in the University for admission.

General Curriculum in Liberal Arts and Sciences

For the Degree of Bachelor of Arts (or Bachelor of Science)

Because of the wide range of courses open to students in the general curriculum of liberal arts and sciences, it is not feasible to specify the definite sequences of courses to be taken by any student in each of the four years of this curriculum. Under the guidance of advisers, each student is expected to plan his own program within the general requirements outlined below. This general outline indicates the ordinary procedure in fulfilling the requirements for the degree of Bachelor of Arts, or for the optional degree of Bachelor of Science.

Summary of Requirements for Graduation

Each candidate for the degree of A.B. or B.S. in the general curriculum of liberal arts and sciences must meet the general University requirements with respect to registration, residence, fees, hygiene, military science, physical education, and rhetoric, and must obtain credit, with a satisfactory scholastic average, in approved courses totaling at least 120 semester hours, not counting credit earned for the first two years of work in military

¹An elective is not required in a minimum schedule, but most students will wish to elect another course. Foreign language is recommended, especially for students who plan to continue in the College of Liberal Arts and Sciences for a bachelor's degree. Mathematics is also recommended, especially for students who may be going into technical work.

science and physical education. In securing this credit, each candidate must have an average of not less than "C" (3.) in all grades received, including grades in courses transferred from other institutions, and excluding those received in the first two years of work in military science and physical education, and must not have grades below "C" in more than one-fourth of the total number of semester hours earned. (*Note:* Grades in advanced military courses are included in the average.) In computing the grade-point average, weighted values are given to the grades as follows: A = 5 grade points; B = 4; C = 3; D = 2; E (failure) = 1. The individual grades are multiplied by the respective number of semester hours which each represents and the sum of these products is divided by the total number of semester hours taken.

Optional Degree of Bachelor of Science.—The degree of Bachelor of Science, instead of the degree of Bachelor of Arts, is granted to students whose major is in mathematics, a science, or home economics, upon petition to the dean of this college not later than March 1 if the degree is to be received in June, August 1 if it is to be received in October, or December 1 if it is to be received in February.

A. Prescribed subjects:

To be begun in the first semester of the freshman year, except as otherwise provided, and to be continued until the requirements are completed. (See group requirements below.)

1. *Hygiene.*—One semester, not more than 2 hours. Credit may be obtained by a proficiency examination.
2. *Physical Education.*—Four semesters.
3. *Military Science and Tactics* (for men).—Four semesters.
4. *Rhetoric.*—Two semesters (Rhetoric 1 and 2). The quality of work acceptable in the fulfillment of this requirement must satisfy the general University regulations concerning rhetoric which are found on page 114.
5. *Foreign Language.*—A reading knowledge of a foreign language (French, German, Greek, Italian, Latin, Portuguese, or Spanish) equivalent to that resulting from four semesters of study of a foreign language commenced in college. This requirement is satisfied by passing French 2b, German 2b or 6, Greek 4, Italian 2b, Latin 1a or 1b, Portuguese 2b, Spanish 2b, or a more advanced course in any of these languages. Proficiency examinations are offered in all these courses as well as in the more elementary courses in languages. *Note:* No credit toward graduation is given for a beginning course in a foreign language unless it is continued through a full year. (Students planning to enter the Graduate School are advised to obtain a reading knowledge of both French and German.)

B. Group requirements:

To be begun in the freshman year and completed before the senior year. Proficiency examinations may be taken for credit in some of these subjects.

1. *For students who enter prior to September 1, 1946:*

1. *Liberal Arts.*—A total of 15 hours chosen from at least three of the following subjects, including one course in English or foreign literature, or in the history of philosophy: English literature, foreign literature (advanced courses requiring at least two years of college work, or its equivalent), economics, history, philosophy, political science, and sociology.
2. *Sciences.*—A total of 15 hours chosen from at least three of the following subjects, including one course with a minimum of four hours laboratory work a week: astronomy, bacteriology, botany, chemistry, entomology, geography, geology, mathematics, physics, physiology, psychology, and zoology.

Note: Any student who has completed the six courses prescribed by the Division of General Studies will have satisfied all the group requirements of the general curriculum in the College of Liberal Arts and Sciences.

II. *For students who enter after September 1, 1946:*

1. *Basic Knowledge.*—Students who enter the general curriculum in liberal arts and sciences as freshmen after September 1, 1946 (or who enter other schools after that date and subsequently transfer to the College), must, in addition to the present requirements in English, hygiene, and foreign language, meet new requirements of three hours in History of the United States, and six hours in mathematics. The new

requirements may be satisfied by courses taken in high school if the student passes qualifying examinations.

2. *General Education.*—The present “group requirements” will be replaced by the requirement of a two-semester course or sequence of courses in each of the following areas, with a minimum of eight hours credit in each: (a) Humanities; (b) Biological Science; (c) Physical Science; (d) Social Science. Certain courses listed by the various departments are designed to meet the general education requirements and are so designated. Students should complete one of the area requirements during the first year. Sophomores should complete one or more of the remaining requirements. Some courses are offered at the junior or higher level in order to provide area sequences for advanced students. The courses taken in the student’s major field will satisfy one of the above area requirements. For example, if the major is Chemistry, the student need not take general education courses in the Physical Sciences. The same is true for the other areas. Certain courses, such as History, may not be used to satisfy both the Social Science and Humanities requirement, although the department may be considered in either area.

C. Majors, minors, and advanced courses:

1. *Major Subjects.*—Each student, before beginning the junior year, selects one subject and declares it to be his major. In order to be acceptable for graduation, a major must consist of at least 20 hours in courses chosen from those designated by a department and approved by the faculty of the college. Such courses are to be inclusive of some distinctly advanced work and exclusive of courses open to freshmen. At least five hours of the work acceptable for a major must be done in residence at the University. The subjects recognized as majors in this college are:

Bacteriology	French	Italian	Political Science
Botany	Geography	Latin	Psychology
Chemistry	Geology	Mathematics	Sociology
Classics	German	Philosophy	Spanish
Economics	Greek	Physics	Speech
English	History	Physiology	Zoology
Entomology	Home Economics		

2. *Minor Subjects.*—Each candidate for graduation must offer, in addition to his major, a minor consisting of 20 hours in one or two subjects designated by the department in which he is taking his major, and approved by the faculty, with at least 8 hours in each subject if two are chosen.
3. *Advanced Courses.*—Thirty hours of the work taken in the junior and senior years must be in courses not open ordinarily to freshmen or sophomores. Students should plan their first and second years of work so as to include the prerequisites for advanced courses.

D. Electives:

1. *Liberal Arts and Sciences.*—Any course offered in the College of Liberal Arts and Sciences may be used as an elective.
2. *Other Colleges.*—Electives totaling as much as (but not more than) 32 hours may be taken in other colleges and schools of the University and counted toward graduation from this college, in addition to the courses acceptable for major and minor requirements, if such electives are in conformity to the following list approved by the faculty:

Accountancy.—A total of 6 hours (not including more than one of the following courses: Accountancy 1a, 1e, 12).

Agricultural Economics.—A total of 6 hours.

Architecture.—A total of 15 hours.

Art.—A total of 15 hours.

Business Law.—A total of 6 hours.

Business Organization and Operation.—A total of 6 hours. 12a-12b (Type-writing) and 13a-13b (Shorthand) may not be offered for credit.

Economics.—All courses.

Education.—A total of 20 hours.

Engineering.—A total of 10 hours in the College of Engineering.

Forestry.—A total of 3 hours.

Home Economics.—All courses.

Horticulture.—A total of 6 hours.

Hygiene.—Hygiene 2 or 5 (2 hours).

Journalism.—A total of 10 hours.

Landscape Architecture.—A total of 7 hours.

Law.—A student of senior standing with an average of 3.25 who has been in residence either the first two years or the last year of his pre-legal work may take and count toward the A.B. degree not more than 32 hours in the College of Law, provided that not less than two courses amounting to at least 5 hours a semester are taken, with the advice of the dean of the College of Law, and provided further that if any

such student desires to take more than 6 hours of law work he must also register in the College of Law.

Library Science.—A total of 10 hours.

Military Science.—A total of 8 hours in advanced courses.

Music.—A total of 15 hours approved by the Director of the School.

Physics.—All courses.

Graduate Courses.—A student of excellent standing who is within five semester hours of his bachelor's degree may be given the privilege of electing courses in the Graduate School with the consent of the dean of that school. Such a student will register both in the College of Liberal Arts and Sciences and in the Graduate School.

Curriculum on International Affairs

This curriculum is sponsored by the Division of the Social Sciences, and its completion satisfies the requirements for a minor in the departments of Economics, Geography, History, Philosophy, Political Science, and Sociology. Students in the curriculum are required to take Economics 23, Political Science 8, Sociology 70, and, in the following groups of courses, two courses in Group I and two in Group II:

Group I.—Economics 29 or 44; History 32a or 32b, 37b; Philosophy 5; Political Science 33.

Group II.—Economics 8, 24, 30, 31; Education 5; Geography 1, 2, 3, 8, 10, 11, 53, 54; History 1a, 1b, 30a, 30b, 31b, 33b, 34b, 36a, 36b, 46a; Journalism 58; Philosophy 9, 18; Political Science 6a, 6b, 7, 21, 22, 38; Psychology 14; Social Science 1, 2; Sociology 10, 14, 28, 60.

Chemistry and Chemical Engineering

The following curricula in chemistry and chemical engineering afford more specialized training than is required of students who make chemistry their major subject in the general curriculum of liberal arts and sciences.

The minimum language requirement for graduation in these curricula is the equivalent of two years of college work in German or French.¹ When a student does not offer either German or French for entrance, the second year of the language required for graduation may be counted as an elective in the chemistry curriculum. Students entering with two units of credit for German or French (two units in high school being equivalent to one year in college) should complete this minimum requirement in their freshman year. Those entering with less than two units in German or French should complete this requirement in their sophomore year or as early as possible.

Students who enter with inadequate preparation in chemistry, mathematics, and foreign languages in high school will find it difficult to complete their professional training in chemical engineering in four years. The optional five-year curriculum is recommended especially for those who do not qualify for Chemistry 8a and Mathematics 10a, and who do not have two units of high school credit in French or German. Both curricula lead to the Degree of Bachelor of Science in Chemical Engineering, but those who follow the five-year curriculum will find it possible, by the proper choice of electives, to obtain a Bachelor of Arts or Bachelor of Science degree, at the end of four years.

Students in these curricula should note that registration in chemistry or chemical engineering courses other than those open to freshmen and a few of those open to sophomores is restricted to students who have a grade-point average of 3.5.

¹ Russian may be substituted for French in the Chemical Engineering curricula.

Curriculum in Chemistry

For the Degree of Bachelor of Science in Chemistry

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 8a—Inorganic Chemistry and Qualitative Analysis ¹	5	Chem. 8b—Inorganic Chemistry and Qualitative Analysis	5
Math. 10a—Freshman Mathematics ²	5	Math. 10b—Freshman Mathematics	4
German or French	4	German or French	4
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Physical Education	3	Hygiene 2 or 5	2
Military Science (for Men)	3	Physical Education	2
		Military Science (for Men)	2
<i>Total</i>	17	<i>Total</i>	18

Second Year

Chem. 24—Quantitative Analysis	5	Chem. 34—Organic Chemistry	5
Math. 8a—Differential Calculus	3	Math. 8b—Integral Calculus	3
Phys. 1a—General Physics	4	Phys. 1b—General Physics	4
Phys. 3a—Physics Laboratory	1	Phys. 3b—Physics Laboratory	1
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
Electives ³	3	Electives ³	2
<i>Total</i>	16	<i>Total</i>	15

Third Year

Chem. 36—Organic Chemistry	3	Chem. 42—Physical Chemistry	3
Chem. 37—Organic Chemistry Lab.	2	Chem. 43—Physical Chemistry Lab.	1
Chem. 40—Physical Chemistry	3	Chem. 93b—Chemical Literature	1
Chem. 41—Physical Chemistry Lab.	1	Electives ³	11
Chem. 92—Chemical Literature	1		
Econ. 2—Elements of Economics	3		
Electives ³	3		
<i>Total</i>	16	<i>Total</i>	16

Fourth Year

Chem. 27—Quantitative Analysis	3	Electives ³	13
Chem. 95a—History of Chemistry	2		
Electives ³	11		
<i>Total</i>	16	<i>Total</i>	16

¹ All students with entrance credit in chemistry are required to take a proficiency examination before registering for Chem. 8a. Those who do not show the necessary proficiency will be placed in Chem. 1 or 2, after which they will take Chem. 6 and 10. For students without entrance credit in chemistry, the required sequence is Chem 1, 6, and 10.

² For students who do not take Math. 10a-10b, the required sequence is Math. 2 (or 3), 4 (or 5), 6 (or 6a), 7, and 9.

³ Suggested courses for electives are: Zool. 1, 2, 7; Bot. 1a, 1b; Engl. 20a, 20b; Geol. 20, 43; Hist. 3a, 3b; Bact. 5a, 5b; German or French. Of the total electives for graduation, at least 21 hours should be from advanced courses in chemistry and at least 10 hours from courses offered by other departments. With the permission of the adviser, students may substitute courses in physics, mathematics, or other closely allied sciences for a portion of the 21 hours in advanced chemistry courses.

Four-Year Curriculum in Chemical Engineering

For the Degree of Bachelor of Science in Chemical Engineering

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 8a—Inorganic Chemistry and Qualitative Analysis.....	5	Chem. 8b—Inorganic Chemistry and Qualitative Analysis.....	5
Math. 10a—Freshman Mathematics ¹	5	Math. 10b—Freshman Mathematics.....	4
German, French, or Russian.....	4	German, French, or Russian.....	4
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
Physical Education.....	2	Hygiene.....	2
Military Science (for Men).....	2	Physical Education.....	2
		Military Science (for Men).....	2
<i>Total</i>	17	<i>Total</i>	18

Second Year

Chem. 24—Quantitative Analysis.....	5	Chem. 40—Physical Chemistry.....	3
Math. 8a—Differential Calculus.....	3	Chem. 41—Physical Chemistry Lab.....	1
Phys. 1a—General Physics.....	4	Math. 8b—Integral Calculus.....	3
Phys. 3a—Physics Laboratory.....	1	Phys. 1b—General Physics.....	4
G.E.D. 6—Elements of Drawing.....	3	Phys. 3b—Physics Laboratory.....	1
Physical Education.....	2	Ch.E. 61—Stoichiometry.....	3
Military Science (for Men).....	2	T.A.M. 1—Analyt. Mech. (Statics).....	2
		Physical Education.....	2
		Military Science (for Men).....	2
<i>Total</i>	16	<i>Total</i>	17

Third Year

Chem. 34—Organic Chemistry.....	5	Chem. 36—Organic Chemistry.....	3
Ch.E. 67—Measurements and Instrumentation Lab.....	2	Chem. 37—Organic Chemistry Lab.....	2
Ch.E. 70—Chem. Eng. Thermodynamics.....	3	Chem. 42—Physical Chemistry.....	3
T.A.M. 3—Resistance of Materials.....	3	Ch.E. 71—Princ. of Chem. Eng.....	4
T.A.M. 63—Res. of Mat. Lab.....	1	Ch.E. 72—Unit Operations Lab.....	2
General Studies Elective ²	3	General Studies Elective ²	3
<i>Total</i>	17	<i>Total</i>	17

Fourth Year

Chem. 44a—Thermodynamics.....	2	Ch.E. 79—Projects Laboratory.....	2
Ch.E. 73—Princ. of Chem. Eng.....	4	Ch.E. 66b—Inspection Trip.....	1/2
Ch.E. 74—Unit Operations Lab.....	2	Ch.E. 81—Plant Design.....	3
Ch.E. 77—Chemical Technology.....	3	M.E. 61—Mech. Eng. Lab.....	2
Ch.E. 66a—Inspection Trip.....	1/2	E.E. 12a—D.C. and A.C. Apparatus.....	3
E.E. 11a—D.C. and A.C. Circuits.....	3	E.E. 12b—D.C. and A.C. Apparatus Lab.....	1
E.E. 11b—D.C. and A.C. Circuits Lab.....	1	Elective ³	5 or 4
Elective ³	2 or 3		
<i>Total</i>	17 1/2—18 1/2	<i>Total</i>	16 1/2—15 1/2

¹ For students who do not take Math. 10a-10b, the required sequence is Math. 2 (or 3), 4 (or 5), 6 (or 6a), 7, and 9.

² These electives should be chosen from the Division of Humanities or Social Sciences with the approval of the adviser. The courses should broaden the training of the engineer and provide an interest and liberal education in the field of economics, history, literature, philosophy, political science, or public speaking.

³ Five hours of electives must be chosen, with the approval of the adviser, from advanced courses in chemical engineering, chemistry, physics, mathematics, or other closely allied subjects.

Optional Five-Year Curriculum in Chemical Engineering

For the Degree of Bachelor of Science in Chemical Engineering

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Chem. 1 or 2—General Chemistry ¹	5	Chem. 6—Inorganic Chemistry.....	5
Math. 10a—Freshman Mathematics ²	5	Math. 10b—Freshman Mathematics ²	4
German, French, or Russian.....	4	German, French, or Russian.....	4
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition....	3
Physical Education.....	2	Hygiene.....	2
Military Science (for Men).....	2	Physical Education.....	2
		Military Science (for Men).....	2
<i>Total</i>	17	<i>Total</i>	18

Second Year

Chem. 10—Qualitative Analysis.....	5	Chem. 24—Quantitative Analysis.....	5
Math. 8a—Differential Calculus.....	3	Math. 8b—Integral Calculus.....	3
German, French, or Russian.....	4	Phys. 1b—General Physics.....	4
Phys. 1a—General Physics.....	4	Phys. 3b—Physics Laboratory.....	1
Phys. 3a—Physics Laboratory.....	1	German, French, or Russian.....	4
Physical Education.....	2	Physical Education.....	2
Military Science (for Men).....	2	Military Science (for Men).....	2
<i>Total</i>	17	<i>Total</i>	17

Third Year

Chem. 34—Organic Chemistry.....	5	Chem. 36—Organic Chemistry.....	3
Chem. 40—Physical Chemistry.....	3	Chem. 37—Organic Chem. Lab.....	2
Chem. 41—Physical Chem. Lab.....	1	Chem. 42—Physical Chemistry.....	3
Ch.E. 61—Stoichiometry.....	3	T.A.M. 1—Analyt. Mech. (Statics).....	2
G.E.D. 6—Elements of Drawing.....	3	Ch.E. 70—Chem. Eng. Thermody-	3
General Studies Elective ³	3	namics.....	3
		General Studies Elective ^{3, 4}	3
<i>Total</i>	18	<i>Total</i>	16

Fourth Year

Chem. 44a—Adv. Physical Chem.....	2	Ch.E. 71—Princ. of Chem. Eng.....	4
Ch.E. 67—Measurements and Instru-	2	Ch.E. 72—Unit Operations Lab.....	2
mentation.....	2	M.E. 61—Mech. Eng. Lab.....	2
Ch.E. 77—Chemical Technology.....	3	Electives ⁴	8
T.A.M. 3—Resistance of Materials.....	3		
T.A.M. 63—Res. of Mat. Lab.....	1		
Electives ⁴	6		
<i>Total</i>	17	<i>Total</i>	16

¹ Students who qualify for Chem. 8a should take the Chem. 8a, 8b, 24, 40 sequence rather than Chem. 1, 6, 10, 24, and thus have five additional hours of advanced electives.

² For students who do not take Math. 10a-10b, the required sequence is Math. 2 (or 3), 4 (or 5), 6 (or 6a), 7, and 9.

³ These electives should be chosen from the Division of Humanities or Social Sciences with the approval of the adviser. The courses should broaden the training of the engineer and provide an interest and liberal education in the fields of economics, history, literature, philosophy, political science, or public speaking.

⁴ With the proper choice of these electives the student may qualify for the degree of Bachelor of Arts or Bachelor of Science at the end of the fourth year.

Fifth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Ch.E. 73—Princ. of Chem. Eng.	4	Ch.E. 81—Plant Design.	3
Ch.E. 74—Unit Operations Lab.	2	Ch.E. 66b—Inspection Trip.	½
Ch.E. 79—Projects Laboratory.	2	E.E. 12a—D.C. and A.C. Apparatus.	3
Ch.E. 66a—Inspection Trip.	½	E.E. 12b—D.C. and A.C. Apparatus Lab.	1
E.E. 11a—D.C. and A.C. Circuits	3	Professional Electives ¹	8
E.E. 11b—D.C. and A.C. Circuits Lab.	1		
Professional Electives ¹	3		
<i>Total</i>	<u>15½</u>	<i>Total</i>	<u>15½</u>

Medicine and Dentistry

The three-year pre-medical curriculum outlined below includes the courses required for admission to the College of Medicine under the regulations governing students enrolled at Urbana for this purpose.

The work covered by the first two years of this curriculum also enables students to meet the requirements for admission to the College of Dentistry (see page 110).

Pre-Medical Curriculum

This curriculum, which combines three years of work in the College of Liberal Arts and Sciences with one year of work in the College of Medicine, is available to students under the following conditions:

Any freshman whose scholarship rank is in the upper half of his high school graduating class, on matriculating in the College of Liberal Arts and Sciences, is eligible for admission to the pre-medical curriculum.

A student transferring to this college with advanced standing must have maintained at least a 3.5 scholastic average, in terms of the University's grading system, in order to be admitted to the pre-medical curriculum.

At the end of each semester the scholastic averages of all students enrolled in the pre-medical curriculum are computed. Students whose scholastic average at the time of computation is below the 3.5 average required for admission to the College of Medicine are denied further registration in this curriculum, until such a time as they may have improved their average to this minimum.

Students who meet the language and Liberal Arts group requirements and who complete three years of the pre-medical curriculum and the first year in the College of Medicine, receive the degree of Bachelor of Science from the College of Liberal Arts and Sciences. No student may receive credit toward this degree for more than one year of work done in any other college or university.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition.	3	Rhet. 2—Rhetoric and Composition	3
Zool. 1—General Zoology.	5	Zool. 2—Vertebrate Zoology.	5
Chem. 1 or 2—General Chem. ²	5 or 3	Chem. 5—Inorganic Chemistry.	5
Hygiene 2 or 5.	2	Math. 4 or 4a—Trigonometry ³	2 or 3
Military Science (for Men).		Military Science (for Men).	
Physical Education		Physical Education.	
Electives.	0-3	Electives.	0-3
<i>Total</i>	<u>15-18</u>	<i>Total</i>	<u>15-18</u>

¹ Professional electives must be chosen with the approval of the adviser, from advanced courses in chemical engineering, chemistry, physics, mathematics, or other closely allied subjects.

² Students having credit for chemistry in high school will register for Chem. 2 (three hours).

³ Math. 4, Trigonometry, which is a prerequisite for physics in the sophomore year, may be taken in either the first or second semester of the freshman year, or may be replaced by an elective if the student has credit for trigonometry in high school. Math. 4a (three hours) will be substituted by students who have only two units of mathematics in high school.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Phys. 7a and 8a—General Physics	5	Phys. 7b and 8b—General Physics	5
Modern Language ¹	4	Modern Language ¹	4
Chem. 22—Quantitative Analysis; <i>or</i> Chem. 33—Organic Chemistry	5	Chem. 22—Quantitative Analysis; <i>or</i> Chem. 33—Organic Chemistry	5
Military Science (for Men)	4	Military Science (for Men)	4
Physical Education	2-4	Physical Education	2-4
Electives ²	2-4	Electives ²	2-4
<i>Total</i>	16-18	<i>Total</i>	16-18

Third Year

Modern Language ¹	4	Modern Language ¹	4
Chem. 47—Physical Chemistry <i>or</i> Zool. 3—Vertebrate Embryology	4 3	Chem. 47—Physical Chemistry <i>or</i> Zool. 3—Vertebrate Embryology	4 3
Electives	8-10	Electives	8-10
<i>Total</i>	16-18	<i>Total</i>	16-18

Curriculum in Occupational Therapy

This curriculum, which is open to both men and women, combines five semesters of work in the College of Liberal Arts and Sciences with five quarters in the College of Medicine. The work in the College of Liberal Arts and Sciences is divided into pre-professional, the first and second semesters, and professional, the third, fourth, and fifth semesters. These five semesters are outlined below. For a description of the professional work given in the College of Medicine, see page 428.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Art 25—Art Form	5	Art 26—Art Form	5
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Home Econ. 52a—Textiles and Clothing	3	Home Econ. 52b—Decorative Processes	2
Hygiene 2 or 5	2	Hygiene 16—Health Factors and First Aid	2
Military Science (for Men)	4	Military Science (for Men)	4
Physical Education ³	3	Physical Education ³	3
Electives ⁴	3	Electives ⁴	4
<i>Total</i>	16	<i>Total</i>	16

Second Year

O.T. 1—Occupational Therapy Orientation	2	Speech 16—Play Directing	3
Psych. 1—Introduction to Psychology	4	Sociol. 1—Principles of Sociology	3
Art 70a—Craft Materials and Technics	2	Physiol. 33—Human Anatomy	3
Physiol. 1—Mammalian Physiology	3	Home Econ. 53—Weaving	3
L.A. 63—Garden Design	3	Military Science (for Men)	4
Military Science (for Men)	4	Physical Education ³	3
Physical Education ³	3	Electives ⁴	4
Electives ⁴	2		
<i>Total</i>	16	<i>Total</i>	16

¹ German, French, Spanish, etc. Two semesters of a modern language at the college level are required for admission to the medical school. The equivalent of two years of college work in a foreign language is required of students who are candidates for the bachelor's degree in the combined curriculum. (See Prescribed Subjects, Item 5, page 141.)

² Electives in the second and third years should be arranged to satisfy the requirements for admission to the medical school which the student expects to enter. The College of Medicine of the University of Illinois requires fourteen semester hours from at least two of the following: economics, history, philosophy, political science, psychology, sociology.

³ Suggested elective courses for Women are P.E.W. 51, 72, 78, and 79. Men should consult the Department of Physical Education for Men for suggested electives.

⁴ Suggested electives are: Science (zoology preferred), foreign language, history (American, English, European, art), literature, library science, music appreciation.

Third Year

FIRST SEMESTER

Indus. Ed. 1—Woodwork.....3	P.E.W. 80—Recreation and Camp Leadership; or P.E.M. 19—Recrea- tional Leadership.....2
Psych. 36—Applied Psychology.....2	Electives.....3
Art 70b—Advanced Craft Materials and Technics.....4	<i>Total</i>.....17
P.E.W. 96a—Kinesiology.....3	

Curriculum Preparatory to the Teaching of Biology

*For the Degree of Bachelor of Science in the Teaching of the
Biological Sciences and General Science*

This curriculum is for students preparing to teach biology and general science as major areas of specialization and physical science as a minor area of specialization. The courses outlined below total 131 to 136 hours. A minimum of 123 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition....3 or D.G.S. 1a—Verbal Expression....4		Rhet. 2—Rhetoric and Composition....3 or D.G.S. 1b—Verbal Expression....4	
Foreign Language.....4		Foreign Language.....4	
Bot. 1a-1b—Introductory Botany.....5 or Zool. 1—General Zoology.....5		Zool. 1—General Zoology.....5 or Bot. 1a-1b—Introductory Botany.5	
Hygiene 2 or 5.....2		English Literature ².....3	
Military Science (for Men).....1		Physical Education.....1	
Physical Education.....1		Speech 1—Effective Speaking ³.....3 or Speech 10—Oral Interpretation of Literature ³.....2	
Electives ¹.....2-3		Military Science (for Men).....1	
<i>Total</i>.....18-19		<i>Total</i>.....19	

Second Year

Ed. 1—The American Public School....2	Pol. Sci. 1a—American Government...3
Hist. 3b—History of the United States, 1828-1946.....3	Bact. 5a-5b—Introd. Bacteriology....5
Physiol. 1c—Mammalian Physiology...4	Psych. 1c—Human Behavior.....4
Chem. 1 or 2—Inorganic Chemistry...5 or 3	Military Science (for Men).....1
Military Science (for Men).....1	Physical Education.....1
Physical Education.....1	Electives ⁴.....2
Electives ⁴.....0-2	
<i>Total</i>.....15-17	<i>Total</i>.....16

¹ For students who have had two or more years of mathematics in high school, Math. 2 (College Algebra) is strongly recommended.

² Another approved humanity may be elected.

³ Students who take D.G.S. 1a-1b are not required to take Speech 1 or 10.

⁴ It is recommended that not more than one-third of the total elective hours of the sophomore, junior, and senior years be chosen from the sciences. The remainder should be selected, with the approval of the adviser, from the humanities and social sciences. The following science courses are especially recommended as electives: Astron. 1 and 2; Bact. 6 and 26; Bot. 8, 16, and 40; Geog. 14 and 16; Hort. 5 and 3; Math. 2 or 3; Zool. 2, 7, 10a-10b, 19, and 25a.

The following elective courses in the humanities and social sciences are especially recommended: Art 11 and 12; Classics 20; Econ. 1 and 2; English 10a, 11a-11b, 12, 23, 55a-55b, and 57; Rhet. 4, 6, and 7; Hist. 1a-1b, 2a-2b, 5a, 17a, and 42; Journ. 35; Music 13 and 14a; Philos. 1, 2, and 3; Psych. 3, 16, and 21; Sociol. 1; D.G.S. 5a-5b; and advanced courses in any foreign language.

Third Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
D.G.S. 4a—Physical Science	4	D.G.S. 4b—Physical Science	4
Geog. 1—Elements of Geography	5	Zool. 16—Bird Study	2
Ed. 25—Educational Psychology	3	Entom. 1a-1b—Insects	5
Bot. 3—Plant Physiology	5	Ed. 6b—Princ. of Secondary Ed.	3
		Electives	1-2
<i>Total</i>	17	<i>Total</i>	15-16

Fourth Year

Zool. 17—Field Zoology	3	Bot. 6—Intro. Systematic Bot.	5
Zool. 11—Animal Ecology and Geog.; or Zool. 19—Wildlife Management and Conservation	3	Ed. 10b—Technic of Teaching in the Secondary Schools ¹	3
Bot. 22—General Plant Morphology	3	Ed. Prac. 6—Practice Teaching of Biology ¹	5
Electives	6	Bot. 36—Biology for Teachers	3
<i>Total</i>	15	<i>Total</i>	16

Fifth Year

*For the Degree of Master of Science in the Teaching of the
Biological Sciences and General Science*

Eight units of work as listed below are required. Courses must be selected with the consent of the adviser, who will see that the candidate strengthens areas in which he is weakest. No thesis is required. A course in Biological Chemistry and one in Experimental Psychology are strongly advised.

	UNITS
Biological Sciences	4
Ed. 125—Advanced Educational Psychology	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.	1
Electives	2
<i>Total</i>	8

Biology as a First Undergraduate Minor

	HOURS
Zool. 1—General Zoology	5
Bot. 1a-1b—Introductory Botany	5
Bact. 5a-5b—Introductory Bacteriology	5
Entom. 1a-1b—Destructive and Useful Insects	5
<i>Total</i>	20

Biology as a Second Undergraduate Minor

Zool. 1—General Zoology	5
Bot. 1a-1b—Introductory Botany	5
Entom. 1a—Destructive and Useful Insects	3
Physiol. 1—Mammalian Physiology	3
<i>Total</i>	16

General Science as an Undergraduate Minor

Phys. 10—General Physics	8
Chem. 1 or 2—Inorganic Chemistry	5 or 3
Zool. 1—General Zoology	5
Bot. 1a-1b—Introductory Botany	5
Geog. 1a—Elements of Geography	3
<i>Total</i>	24-26

¹ Students may register in Ed. 10b and Ed. Prac. 6 in the first semester of the fourth year.

Curriculum Preparatory to the Teaching of Chemistry

For the Degree of Bachelor of Science in the Teaching of Chemistry

For students preparing to teach physical science with a major in chemistry and with minors in physics and mathematics. The courses outlined below total 132 to 134 hours. A minimum of 125 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

If the student has not had adequate high-school training in mathematics, he may be required to take Mathematics 1 or other elementary mathematics.

If the student has had no foreign language in high school or if he does not continue in the University the same language which he began in high school, it will be necessary for him to take two years of foreign language rather than the one year specified below.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Math. 10a—Combined Freshman Mathematics	5	Math. 10b—Combined Freshman Mathematics	4
Military Science (for Men)	1	Chem. 6—Inorganic Chemistry	5
Physical Education	1	Military Science (for Men)	1
		Physical Education	1
		<i>Either</i>	
{ Chem. 1—Inorganic Chemistry	5	Hygiene 2 or 5	2
{ Elective	3		
		<i>Or</i>	
{ Chem. 2—Inorganic Chemistry	3	Electives	2
{ Hygiene 2 or 5	2		
{ Electives	3		
<i>Total</i>	18	<i>Total</i>	16

Second Year

Chem. 10—Qualitative Analysis	5	Chem. 24—Quantitative Analysis	5
Ed. 1—The American Public School	2	Psych. 1—Introduction to Psychology	4
Foreign Language	4	Foreign Language	4
Math. 8a—Calculus	3	Math. 8b—Calculus	3
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
<i>Total</i>	16	<i>Total</i>	18

Third Year

Chem. 33—Elem. Organic Chem. ; or Chem. 34—Organic Chemistry	5	Chem. 40-41—Elem. Physical Chem.	4
Phys. 1a and 3a—General Physics	5	or Chem. 50—Biochemistry	5
Pol. Sci. 1a—American Government	3	Phys. 1b and 3b—General Physics	5
Ed. 25—Educational Psychology	3	Ed. 6b—Princ. of Secondary Ed.	3
		Hist. 3b—History of the United States, 1828-1946	3
<i>Total</i>	16	<i>Total</i>	15-16

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Phys. 14a—Intermediate Mechanics, Heat, and Sound.....	5	Chem. 94b—Teachers' Course.....	2
Math. 40a—Fundamental Concepts of Mathematics.....	3	Ed. Prac. 7—Practice Teaching of Chemistry.....	5
Speech 1—Effective Speaking; <i>or</i> Speech 10—Oral Interpretation of Literature.....	2	Phys. 14b—Intermediate Electricity, Magnetism, and Light.....	5
Electives ¹	6	Ed. 10b—Technic of Teaching in the Secondary School.....	3
<i>Total</i>	16-17	Electives.....	2
		<i>Total</i>	17

Fifth Year

For the Degree of Master of Science in the Teaching of Chemistry

Eight units of work are required including four in chemistry, two in education, and two in electives. Courses must be selected with the consent of the adviser, who will see that the candidate strengthens areas in which he is weakest. No thesis is required.

	UNITS
Chemistry.....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; <i>or</i> Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

For the Degree of Master of Science in the Teaching of the Physical Sciences

A special program leading to the degree of Master of Science in the Physical Sciences is available to meet the needs of students who wish to study in both chemistry and physics rather than to specialize in one department. It is designed primarily for those preparing to teach the physical sciences in high school. Students working toward a degree under the provisions of this program are expected to seek approximately equal proficiency in both physics and chemistry; those whose undergraduate work has emphasized chemistry should balance this by weighting the graduate work in favor of physics, and vice versa. No thesis is required, and all courses in physics and chemistry which normally give graduate credit will carry credit toward the degree. To qualify for the degree, a student must have had, or must include in his program, at least one course in mathematics beyond the calculus, and for which the calculus is prerequisite.

	UNITS
Physical Sciences.....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; <i>or</i> Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

Undergraduate Minor in Chemistry

	HOURS
Chem. 1 or 2—Inorganic Chemistry.....	5 or 3
Chem. 5—Inorganic Chemistry and Qualitative Analysis.....	5
Chem. 22—Elementary Quantitative Analysis.....	5
Chem. 33—Elementary Organic Chemistry.....	5
<i>Total</i>	18-20

¹ Geology 20 (General Mineralogy) is strongly recommended.

Curriculum Preparatory to the Teaching of English

For the Degree of Bachelor of Arts in the Teaching of English

The courses outlined below total 134 to 140 hours. A minimum of 128 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition.	3	Rhet. 2—Rhetoric and Composition.	3
or D.G.S. 1a—Verbal Expression.	4	or D.G.S. 1b—Verbal Expression.	4
Foreign Language ¹	4	Foreign Language ¹	4
Mathematics or Science ²	3	Mathematics or Science ²	3
Hygiene 2 or 5.	2	Military Science (for Men).	1
Military Science (for Men).	1	Physical Education.	1
Physical Education.	1	Electives ³	5
Electives ³	3		
<i>Total</i>	16-18	<i>Total</i>	16-18

Second Year⁴

Engl. 12—American Literature.	3	Engl. 13—American Literature.	3
Engl. 23—Shakespeare.	3	Pol. Sci. 1a—American Government.	3
Ed. 1—The American Public School.	2	Psych. 1—Introduction to Psychology.	4
Foreign Language ¹	4	Foreign Language ¹	4
Speech Electives.	3	Electives.	2
Military Science (for Men).	1	Military Science (for Men).	1
Physical Education.	1	Physical Education.	1
<i>Total</i>	16-17	<i>Total</i>	17-18

Third Year

Engl. 16—Modern English Grammar.	3	English electives ⁵	6
English electives ⁵	4	Ed. 6b—Principles of Secondary Education.	3
Ed. 25—Educational Psychology.	3	Lib. Sci. 7—Reading Guidance in Adolescent Literature.	4
Speech 10—Oral Interpretation of Literature.	2	Rhet. 3—Exposition.	3
Hist. 3b—History of the United States, 1828-1946.	3		
Electives.	3		
<i>Total</i>	18	<i>Total</i>	16

¹ A reading knowledge of a foreign language (French, German, Greek, Italian, Latin, Portuguese, or Spanish) equivalent to that resulting from four semesters of study of a foreign language commenced in college is required. This requirement is satisfied by passing French 2b, German 5 or 6, Greek 4, Italian 2b, Latin 1a, Portuguese 2b, Spanish 2h, or a more advanced course in any of these languages. *Note:* No credit toward graduation is given for a beginning course in a foreign language unless it is continued through a full year.

² Six semester hours of natural science are required. The courses in biological science and physical science in the Division of General Studies are especially recommended.

³ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, beginning teachers may need to complete a second teaching minor of 16 semester hours. Desirable teaching combinations with English include art, music; and double minors in French and Latin; German and Latin; history and music; history and physical education; home economics and physical education; Latin and music; Latin and physical education; Latin and Spanish; music and physical education; speech and Latin; speech and music; speech and physical education; journalism and history; journalism and Latin; speech and history.

⁴ Before the close of the sophomore year, each student will be given a list of a dozen or more important books to read and digest during the last two summers of registration. In the course of the senior year, the department will test the student's knowledge of these books by conferences or examination.

⁵ Six of the ten hours of English electives must be in courses restricted to advanced undergraduates.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Engl. 55a—Survey of English Literature.....	3	Engl. 55b—Survey of English Literature.....	3
Ed. 69—Principles and Methods in Remedial Reading.....	3	Ed. 10b—Technic of Teaching in the Secondary School.....	4
Journ. 47—High School Journalism.....	3	Ed. Prac. 11—Practice Teaching of English.....	5
Electives.....	9	Electives.....	5
<i>Total</i>	18	<i>Total</i>	17

Fifth Year

For the Degree of Master of Arts in the Teaching of English

	UNITS		UNITS
English ¹	2	English ¹	2
Ed. 125—Adv. Educational Psych.....	1	Ed. 30—Hist. of American Ed.; or Ed. 101—Philos. of Ed.....	1
Electives.....	1	Electives.....	1
<i>Total</i>	4	<i>Total</i>	4

Undergraduate Minor in English

	HOURS
Rhet. 1-2—Rhetoric and Composition.....	6
or D.G.S. 1a-1b—Verbal Expression.....	8
Engl. 12 and 13—American Literature.....	6
Rhet. 3—Exposition.....	3
Engl. 55a-55b—Survey of English Literature.....	6
<i>Total</i>	21-23

Curriculum Preparatory to the Teaching of French

For the Degree of Bachelor of Arts in the Teaching of French²

The courses outlined below total 125 to 134 hours. A minimum of 120 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
French 1a—Elementary French.....	4	French 1b—Elementary French.....	4
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
or D.G.S. 1a—Verbal Expression.....	4	or D.G.S. 1b—Verbal Expression.....	4
Science and Mathematics ³	6-7	Science ³	3-5
Hygiene 2 or 5.....	2	Military Science (for Men).....	1
Military Science (for Men).....	1	Physical Education.....	1
Physical Education.....	1	Electives ⁴	3-6
<i>Total</i>	16-19	<i>Total</i>	16-19

¹ Rhet. 105 is especially recommended. Candidates for junior college teaching should take Rhet. 105.

² Students who complete this curriculum may elect to take the degree of Bachelor of Arts in Liberal Arts and Sciences.

³ Eleven hours of natural science or mathematics is required.

⁴ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of French may need to be prepared to teach a second minor requiring a minimum of 16 hours. Desirable teaching combinations with French include English, foreign languages, history, music, and physical education. A double major in French and English and a double major in French and Latin with English or history as a minor subject are also recommended. Additional hours for electives may be gained from basic courses credited from a secondary school.

Second Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
French 2a—Modern French	.....	4	French 2b—Modern French	.....	4
Ed. 1—The American Public School	.....	2	Psych. 1—Introduction to Psychology	.....	4
Military Science (for Men)	.....	1	Military Science (for Men)	.....	1
Physical Education	.....	1	Physical Education	.....	1
Electives	.....	10	Electives	.....	7
<i>Total</i>	.....	17-18	<i>Total</i>	.....	16-17

Third Year

French 3a—Introd. to French Lit.	.....	3	French 3b—Introd. to French Lit.	.....	3
French 7a—Intermediate Composition and Conversation	.....	2	French 7b—Intermediate Composition and Conversation	.....	2
Pol. Sci. 1a—American Government	.....	3	Hist. 3b—History of the United States, 1828-1946	.....	3
Ed. 25—Educational Psychology	.....	3	Speech 1—Effective Speaking	.....	3
Electives	.....	4	or Speech 10—Oral Interpretation of Literature	.....	2
<i>Total</i>	.....	15	Electives	.....	5
			<i>Total</i>	.....	15-16

Fourth Year

French 8a—Advanced Composition and Conversation	.....	2	French 8b—Advanced Composition and Conversation	.....	2
French 35a or 35b—Civilisation Française	.....	2	Ed. 10b—Technic of Teaching in Secondary School	.....	3
Ed. 6b—Princ. of Secondary Ed.	.....	3	Ed. Prac. 12—Practice Teaching of French	.....	5
Electives	.....	8	Electives	.....	5
<i>Total</i>	.....	15	<i>Total</i>	.....	15

Fifth Year

For the Degree of Master of Arts in the Teaching of French

The work of the fifth year should be determined by the particular experience and needs of the individual student. The student's program will be worked out in conference with the adviser in the major area of specialization. The program will total a minimum of 8 units, or 32 semester hours, for two semesters.

	UNITS	
Ed. 125—Advanced Educational Psychology	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.	1
French	4
Electives	2
<i>Total</i>	8

Undergraduate Minor in French

	HOURS	
French 1a-1b—Elementary French	8
French 2a-2b—Modern French (grammar, reading, oral work)	8
French 7a-7b—Intermediate Composition and Conversation	4
<i>Total</i>	20

The minor in French requires four hours of composition and conversation supplementary to courses 1a-1b and 2a-2b. Total hours required may be reduced by entrance credits of French. Additional courses recommended: French 3a-3b and French 8a-8b.

Curriculum Preparatory to the Teaching of Geography

For the Degree of Bachelor of Science in the Teaching of Geography

The courses outlined below total 131 hours. A minimum of 123 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Geog. 1—Elements of Geography	5	Geog. 2—Economic Geography	5
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
Foreign Language	4	Foreign Language	4
Military Science (for Men)	1	Hygiene 2 or 5	2
Physical Education	1	Military Science (for Men)	1
Electives ¹	3	Physical Education	1
<i>Total</i>	17	<i>Total</i>	16

Second Year

Geog. 16—Geography of Illinois	3	Geog. 14—Introduction to Meteorology	3
Ed. 1—The American Public School	2	Psych. 1—Introduction to Psychology	4
Speech 1—Effective Speaking	3	Military Science (for Men)	1
or Speech 10—Oral Interpretation of Literature	2	Physical Education	1
Military Science (for Men)	1	Electives	8
Physical Education	1		
Electives	7-8		
<i>Total</i>	17	<i>Total</i>	17

Third Year

Geog. 4a—Geography of Eastern North America	3	Geog. 4b—Geography of Western North America	3
Ed. 25—Educational Psychology	3	Geog. 5—Geography of South America	3
Hist. 3b—History of the United States, 1828-1946	3	Ed. 6b—Princ. of Secondary Ed.	3
Electives	8	Pol. Sci. 1a—American Government	3
		Electives	5
<i>Total</i>	17	<i>Total</i>	17

Fourth Year

Geog. 60a—Introduction to Research	2	Geog. 8—Geography of Europe	3
Ed. 10b—Technic of Teaching in the Secondary School	3	Geog. 11—Geography of Asia	3
Ed. Prac. 29—Practice Teaching of Geography	5	Electives	9
Electives	5		
<i>Total</i>	15	<i>Total</i>	15

Fifth Year

For the Degree of Master of Science in the Teaching of Geography

UNITS	UNITS
Geog. 134—Adv. Studies in Geog.	1
Ed. 125—Advanced Educational Psychology	1
Electives	2
<i>Total</i>	4
Geog. 135—Research	1
Ed. 101—Philosophy of Education; <i>or</i> Ed. 30—Hist. of American Ed.	1
Electives	2
<i>Total</i>	4

¹ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of geography may need to be prepared to teach a second minor requiring a minimum of 16 hours.

Geography as a First Undergraduate Minor

	HOURS
Geog. 1—Elements of Geography	5
Geog. 2—Economic Geography	5
Geog. (regional courses) ¹	6
<i>Total</i>	<u>16</u>

Curriculum Preparatory to the Teaching of German

For the Degree of Bachelor of Arts in the Teaching of German²

The courses outlined below total 133 to 138 hours. A minimum of 120 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
German 1a—Elementary German	4	German 1b—Elementary German	4
Rhet. 1—Rhetoric and Composition	3	Rhet. 2—Rhetoric and Composition	3
<i>or</i> D.G.S. 1a—Verbal Expression	4	<i>or</i> D.G.S. 1b—Verbal Expression	4
Science or Mathematics	3	Science or Mathematics	5
Hygiene 2 or 5	2	Military Science (for Men)	1
Military Science (for Men)	1	Physical Education	1
Physical Education	1	Electives ³	3
Electives ³	3	<i>Total</i>	<u>17-18</u>
<i>Total</i>	<u>17-18</u>		

Second Year

German 2a—Intermediate German ⁴	4	German 2b—Intermediate German ⁴	4
Speech 1—Effective Speaking	3	Psych. 1—Introduction to Psychology	4
<i>or</i> Speech 10—Oral Interpretation of Literature	2	Music 14a—Appreciation of Music	2
Ed. 1—The American Public School	2	<i>or</i> Art 12—Introduction to the History of Fine Arts	3
Music 13—Appreciation of Music	2	Physical Education	1
<i>or</i> Art 11—Intro. to Hist. of Fine Arts; <i>or</i> English 54a—Intro. to Comp. Literature	3	Military Science (for Men)	1
Science or Mathematics	3	Electives	6
Physical Education	1	<i>Total</i>	<u>17-18</u>
Military Science (for Men)	1		
Electives	2-3		
<i>Total</i>	<u>16-18</u>		

¹ It is recommended that regional courses be taken in related sequences, such as Eastern and Western North America, Caribbean and South America. These courses should be selected from Geog. 4a, 4b, 4c, 5, 8, 10, 11, 14, and 14a.

² Students who complete this curriculum may elect to take the degree of Bachelor of Arts in Liberal Arts and Sciences.

³ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of German may need to be prepared to teach a second minor requiring a minimum of 16 hours. Desirable teaching combinations with German include English, French, history, Latin, or Spanish. A double major in German and Latin with English as a minor is also recommended.

Additional hours for electives may be gained from basic courses credited from secondary school. Recommended electives are Engl. 54a-54b, Hist. 36a-36b, Philos. 1, Art 11 and 12, Music 13 and 14, advanced German courses not included in the minimum program, and other language and literature courses. At least four hours of electives are recommended from German 7, 10, 14, 19a, 19b, 24a, 24b, 25, 28a, 28b, 30a, 30b, 31, 32, and 39b.

⁴ Students must take German 2a-2b, or 6.

Third Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
German 14—Introductory Schiller Course.....		3	German 10—Introd. Goethe Course.....		3
German 16a—Conversation and Writing ¹		2	German 16b—Conversation and Writing ¹		2
Pol. Sci. 1a—American Government.....		3	Hist. 3b—History of the United States, 1828-1946.....		3
Ed. 25—Educational Psychology.....		3	Ed. 6b—Princ. of Secondary Ed.....		3
Electives.....		6	Electives.....		6
<i>Total</i>		17	<i>Total</i>		17

Fourth Year

German 25—Teachers' Course.....	2	German 26b—German Literature in the Nineteenth Century ²	3
German 26a—German Literature to 1800 ²	3	German 29b—Advanced Conversation and Writing ¹	2
German 29a—Advanced Conversation and Writing ¹	2	Ed. Prac. 28—Practice Teaching of German.....	5
Electives.....	9	Ed. 10b—Technic of Teaching in Secondary School.....	3
<i>Total</i>	16	Electives.....	3
		<i>Total</i>	16

Fifth Year

For the Degree of Master of Arts in the Teaching of German

The work will be planned to meet the needs of the individual student on the basis of his preparation and of the demands of his teaching position. Since all the classes he attends will be small, special attention will always be given his professional needs.

Courses are to be chosen from the following list: UNITS

German 19a-19b—Goethe's Faust.....	
German 26a—German Literature to 1800.....	
German 26b—German Literature in the Nineteenth Century.....	
German 31—Middle High German.....	
German 32—History of German Civilization.....	
German 39b—Goethe and Schiller.....	
<i>Total to be chosen from above courses</i>	2-2½
German courses open only to graduates (numbered 100 and up).....	1½-2
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

Undergraduate Minor in German

	HOURS
German 1a-1b—Elementary German.....	8
German 2a—Intermediate German.....	4
German 2b—Intermediate German; or German 6—Scientific Reading.....	4
<i>Four hours selected from the following courses:</i>	
German 16a-16b—Conversation and Writing.....	4
German 29a-29b—Advanced Conversation and Writing.....	4
<i>Total</i>	20

¹ At least six hours must be selected from German 16a, 16b, 29a, and 29b.

² At least six hours must be selected from German 19a, 19b, 26a, 26b, 30a, 30b, 31, 32, and 39b.

Curriculum Preparatory to the Teaching of Latin

For the Degree of Bachelor of Arts in the Teaching of Latin¹

The courses outlined below total 131 to 136 hours. A minimum of 120 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Latin 6—Cicero; or Latin 1a—Ovid ²	4	Latin 1b—Vergil	4
Rhet. 1—Rhetoric and Composition ³	3	Rhet. 2—Rhetoric and Composition	3
Laboratory Science	5	Science or Mathematics	3
Military Science (for Men)	1	Military Science (for Men)	1
Physical Education	1	Physical Education	1
Electives ⁴	4	Hygiene 2 or 5	2
	4	Electives	4
<i>Total</i>	17-18	<i>Total</i>	17-18

Second Year

Latin 12a—Plautus, Terence, and Catullus	4	Latin 12b—Sallust and Cicero's <i>De Senectute</i>	4
Latin 5a—Composition	2	Latin 5b—Composition	2
Ed. 1—The American Public School	2	Psych. 1—Introduction to Psychology	4
Speech 1—Effective Speaking	3	Hist. 3b—History of the United States, 1828-1946	3
or Speech 10—Oral Interpretation of Literature	2	Military Science (for Men)	1
Military Science (for Men)	1	Physical Education	1
Physical Education	1	Electives	3
Electives	5		
	5		
<i>Total</i>	16-18	<i>Total</i>	17-18

Third Year

Latin 3—Lucretius and Horace ⁵	3	Latin 4—Horace's <i>Satires</i> and Vergil's <i>Eclogues</i> ⁵	3
Pol. Sci. 1a—American Government	3	Latin 10—Composition	2
Ed. 25—Educational Psychology	3	Latin 13—Roman Private Life	1
Electives	7	Latin 56—History of the Roman Republic	3
	7	Electives	7
<i>Total</i>	16	<i>Total</i>	16

¹ Students who complete this curriculum may elect to take the degree of Bachelor of Arts in Liberal Arts and Sciences.

² The identity of the courses elected in Latin will depend on the student's previous preparation; Latin 6, or 1a, is to be elected by those who have offered two units of high school Latin for entrance (the normal case). Students who have not completed two units of Latin in high school should take Latin 11a-11b before Latin 6 or 1a.

³ In lieu of Rhet. 1 and 2 in the first year, followed by Speech 10 or 1 later, the student may elect D.G.S. 1a-1b for 4 hours of credit each semester of the first year.

⁴ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of Latin may need to be prepared to teach a second minor requiring a minimum of 16 hours. Desirable teaching combinations with Latin include a double minor in history and physical education, a double major in Latin and French with a minor in English or history, a double major in Latin and Spanish with a minor in English, a double major in Latin and German with a minor in English.

Additional hours for electives may be gained from basic courses credited from secondary school. Recommended electives are Greek 1a-1b, 3, and 4; Hist. 55; Philos. 3; and advanced courses in Latin language.

⁵ Students may substitute six semester hours selected from Latin 21, 22, 23, and 24 for Latin 3 and 4.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Latin 20—Mythology of Greece and Rome.....	2	Ed. Prac. 17—Practice Teaching of Latin.....	5
Ed. 6b—Princ. of Secondary Ed.....	3	Ed. 10b—Technic of Teaching in Secondary School.....	3
Science or Mathematics.....	3	Electives.....	8
Electives.....	8		
<i>Total</i>	16	<i>Total</i>	16

Fifth Year

For the Degree of Master of Arts in the Teaching of Latin

The work will be planned to meet the needs of the individual student on the basis of his preparation and of the demands of his teaching position. Since all the classes he attends will be small, special attention will always be given his professional needs.

Latin courses to be chosen from the following list. At least 2 of these units must be in courses numbered 100 or over; the other 2 units may be chosen in whole or in part from the following list:

	UNITS
Latin 21—Tacitus and Juvenal; Latin 22—Martial, Suetonius, Apuleius; Latin 23—Livy, Tibullus, Propertius; Latin 24—Seneca's <i>Epistles and Tragedies</i> ; Latin 30a-30b—Honors Course.....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

It is strongly recommended that students who have completed one year of Greek as undergraduates take Greek 3 (Xenophon, $\frac{1}{2}$ unit) and 4 (Homer, $\frac{1}{2}$ unit) in their fifth year, and that those who have had no Greek take Greek 1a ($\frac{1}{2}$ unit) and 1b ($\frac{1}{2}$ unit).

Undergraduate Minor in Latin

	HOURS
Latin 11a-11b—Elementary Latin; or 2 years of high-school Latin..	8
Latin 6—Cicero; or Latin 1a—Ovid; or 3 years of high-school Latin..	4
Latin 1b—Vergil's <i>Aeneid</i> ; or 4 years of high-school Latin.....	4
Latin 5a-5b—Composition.....	4
Latin 12a—Plautus, Terence, and Catullus; and Latin 12b—Sallust and Cicero's <i>De Senectute</i>	8

Latin 12a-12b may be omitted when the study of Latin is begun in college.

Latin 3 (3 hours), in addition to Latin 12a-12b, is required for those entering college with four years of high-school Latin.

The total number of hours in Latin required for a minor will thus vary as follows:

	HOURS
a. When Latin is begun in college.....	20
b. When 2 years high-school Latin have been accepted for entrance.....	20
c. When 3 years high-school Latin have been accepted for entrance.....	16 or 20
d. When 4 years high-school Latin have been accepted for entrance.....	15

Curriculum Preparatory to the Teaching of Mathematics

For the Degree of Bachelor of Science in the Teaching of Mathematics¹

The courses outlined below total 131 to 135 hours. A minimum of 120 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
D.G.S. 1a—Verbal Expression.....	4	D.G.S. 1b—Verbal Expression.....	4
Foreign language (second year) ²	4	Foreign Language (second year) ²	4
Math. 10a—Combined Freshman Mathematics ³	5	Math. 10b—Combined Freshman Mathematics ³	4
Hygiene 2 or 5.....	2	Military Science (for Men).....	1
Military Science (for Men).....	1	Physical Education.....	1
Physical Education.....	1	Electives ⁴	3
<i>Total</i>	<u>17</u>	<i>Total</i>	<u>17</u>

Second Year

Ed. 1—The American Public School....	2	Psych. 1—Introduction to Psychology..	4
Biology (D.G.S. 3a-3b, Zool. 1, or Bot. 1a-1b).....	4-5	Biology (D.G.S. 3a-3b, Zool. 1, or Bot. 1a-1b).....	4-5
Math. 7—Calculus.....	5	Math. 9—Calculus.....	3
Philos. 2—Logic.....	3	Military Science (for Men).....	1
Military Science (for Men).....	1	Physical Education.....	1
Physical Education.....	1	Electives.....	4
Electives.....	2		
<i>Total</i>	<u>18-19</u>	<i>Total</i>	<u>17-18</u>

Third Year

Phys. 1a and 3a—General Physics.....	5	Phys. 1b and 3b—General Physics.....	5
or D.G.S. 4a—Physical Science (for students not minoring in science)....	4	or D.G.S. 4b—Physical Science (for students not minoring in science)....	4
Hist. 3b—History of the United States, 1828-1946.....	3	Pol. Sci. 1a—American Government...	3
Math. 40a—Fundamental Concepts of Mathematics.....	3	Math. 40b—Fundamental Concepts of Mathematics.....	3
Ed. 25—Educational Psychology.....	3	Math. 35—Teachers' Course.....	3
English or American Literature.....	3	Ed. 6b—Principles of Secondary Education.....	3
<i>Total</i>	<u>16-17</u>	<i>Total</i>	<u>16-17</u>

¹ Students who complete this curriculum may elect to take the degree of Bachelor of Science in Liberal Arts and Sciences with a major in mathematics.

² Completion of the second year of a foreign language will satisfy the graduation requirement in Liberal Arts and Sciences if the same foreign language is pursued in the University as is offered for entrance to the College. A student who wishes to minor in a foreign language should have three years of high-school preparation in that language.

³ Students who enter the curriculum with only one year of high-school algebra must take Math. 3, 4, and 6a (totaling 11 hours) instead of Math. 10a-10b.

⁴ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. Students who wish to minor in general science, and who intend to take Physics 1 and 3 in the third year, should take one semester of chemistry in their second year. Other desirable minors include the commercial subjects, and double minors in any of the following: biological sciences and chemistry; biological sciences and general science; biological sciences and physics; chemistry and general science; chemistry and physics; French and Latin; general science and physical education; general science and physics; German and Latin; industrial arts and physics; Latin and physical education; Latin and Spanish; music and physics; physical education and physics.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Ed. 10b—Technic of Teaching in the Secondary School	3	Philos. 3—History of Ancient and Medieval Philosophy; <i>or</i> Philos. 4—History of Modern Philosophy	4
Math. 70a—Introduction to Higher Algebra; <i>or</i> Math. 72a—Introduction to Higher Geometry	3	Math. 70b—Introduction to Higher Algebra; <i>or</i> Math. 72b—Introduction to Higher Geometry	3
Ed. Prac. 19—Practice Teaching of Mathematics	5	Math. 36—Solid Analytic Geometry	3
Electives	4	Electives	5
<i>Total</i>	15	<i>Total</i>	15

Fifth Year

For the Degree of Master of Science in the Teaching of Mathematics

Completion of the five-year program of required mathematics courses satisfies the 40-hour requirement for a junior college certificate.

UNITS	UNITS		
Math. 70a—Introduction to Higher Algebra; <i>or</i> Math. 72a—Introduction to Higher Geometry	1	Math. 70b—Introduction to Higher Algebra; <i>or</i> Math. 72b—Introduction to Higher Geometry	1
Ed. 101—Philosophy of Education; <i>or</i> Ed. 30—Hist. of American Ed.	1	Ed. 125—Advanced Educational Psychology	1
Electives	2	Electives	2
<i>Total</i>	4	<i>Total</i>	4

Undergraduate Minor in Mathematics

	HOURS
Math. 10a-10b—Combined Freshman Mathematics	9
Math. 8a-8b—Calculus	6
Math. 40a—Fundamental Concepts of Mathematics	3
<i>Recommended but not required:</i>	
Math. 40b—Fundamental Concepts of Mathematics	3
<i>Total</i>	18-21

Curriculum Preparatory to the Teaching of Mathematics and the Physical Sciences

For the Degree of Bachelor of Science in the Teaching of Mathematics and the Physical Sciences

This curriculum satisfies the requirements for mathematics as a major teaching subject, with chemistry and physics (also general science) as minor teaching subjects. The courses outlined below total 134 to 136 hours. A minimum of 123 hours of credit, not counting the first two years of military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
D.G.S. 1a—Verbal Expression	4	D.G.S. 1b—Verbal Expression	4
Math. 10a—Combined Freshman Mathematics	5	Math. 10b—Combined Freshman Mathematics	4
Chem. 1 or 2—Inorganic Chemistry	5 or 3	Chem. 5—Inorganic Chemistry and Qualitative Analysis	5
Hygiene 2 or 5	2	English or American Literature	2
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
<i>Total</i>	16-18	<i>Total</i>	17

Second Year			
FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Math. 7—Calculus.....	5	Math. 9—Calculus.....	3
Chem. 22—Elementary Quantitative Analysis.....	5	Chem. 33—Elem. Organic Chem.....	5
Biology.....	4	Biology.....	4
Ed. 1—The American Public School.....	2	Psych. 1—Introduction to Psychology.....	4
Physical Education.....	1	Physical Education.....	1
Military Science (for Men).....	1	Military Science (for Men).....	1
<i>Total</i>	<u>18</u>	<i>Total</i>	<u>18</u>

Third Year			
Math. 40a—Fundamental Concepts of Mathematics.....	3	Math. 40b—Fundamental Concepts of Mathematics.....	3
Phys. 1a and 3a—General Physics.....	5	Phys. 1b and 3b—General Physics.....	5
Hist. 3b—History of the United States, 1828-1946.....	3	Pol. Sci. 1a—American Government.....	3
Ed. 25—Educational Psychology.....	3	Ed. 6b—Princ. of Secondary Ed.....	3
Electives.....	2	Math. 35—Teachers' Course.....	3
<i>Total</i>	<u>16</u>	<i>Total</i>	<u>17</u>

Fourth Year			
Math. 70a—Introd. to Higher Algebra.....	3	Math. 70b—Introd. to Higher Algebra.....	3
Phys. 20a—Theoretical Mechanics.....	3	Phys. 30—Introduction to Theoretical Electricity.....	3
Ed. 10b—Technic of Teaching in the Secondary School.....	3	Philos. 3—History of Ancient and Medieval Philosophy; <i>or</i> Philos. 4— History of Modern Philosophy.....	4
Ed. Prac. 19—Practice Teaching of Mathematics.....	5	Math. 36—Solid Analytic Geometry.....	3
Philos. 2—Logic.....	3	Electives.....	2
<i>Total</i>	<u>17</u>	<i>Total</i>	<u>15</u>

Fifth Year

*For the Degree of Master of Science in the Teaching of Mathematics
and the Physical Sciences*

	UNITS		UNITS
Math. 71a—Introduction to Higher Analysis; <i>or</i> Math. 18—Advanced Calculus.....	1	Math. 71b—Introduction to Higher Analysis; <i>or</i> Math. 19—Differential Equations and Orthogonal Func- tions.....	1
Chem. 40—Physical Chemistry.....	1	Phys. 20b—Theoretical Mechanics.....	1
Ed. 125—Advanced Educational Psychology.....	1	Ed. 101—Philosophy of Education; <i>or</i> Ed. 30—Hist. of American Ed.....	1
Electives.....	1	Electives.....	1
<i>Total</i>	<u>4</u>	<i>Total</i>	<u>4</u>

Curriculum Preparatory to the Teaching of Physics

For the Degree of Bachelor of Science in the Teaching of Physics

For students preparing to teach physical science with a major in physics and with minors in mathematics and chemistry. Students entering this curriculum should have 2½ units of high school mathematics. The courses outlined below total 134 to 137 hours. A minimum of 129 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition . . .	3	Rhet. 2—Rhetoric and Composition . . .	3
Hygiene 2 or 5	2	Math. 10b—Combined Freshman Mathematics	4
Math. 10a—Combined Freshman Mathematics	5	Chem. 5—Inorganic Chemistry and Qualitative Analysis	5
Chem. 1 or 2—Inorganic Chemistry . . .	5 or 3	Psych. 1—Introduction to Psychology . .	4
Physical Education	1	Physical Education	1
Military Science (for Men)	1	Military Science (for Men)	1
<i>Total</i>	15-17	<i>Total</i>	18

Second Year

Phys. 1a, 3a or 7a, 8a—General Physics . .	5	Phys. 1b, 3b or 7b, 8b—General Physics	5
Ed. 1—The American Public School . . .	2	Math. 9—Calculus	3
Math. 7—Calculus	5	Chem. 22—Quantitative Analysis	5
Foreign Language	4	Foreign Language	4
Military Science (for Men)	1	Military Science (for Men)	1
Physical Education	1	Physical Education	1
<i>Total</i>	18	<i>Total</i>	19

Third Year

Phys. 14a—Intermediate Mechanics, Heat, and Sound ¹	5	Phys. 14b—Intermediate Electricity, Magnetism, and Light ¹	5
Pol. Sci. 1a—American Government . . .	3	Hist. 3b—History of the United States, 1828-1946	3
Chem. 33—Elementary Organic Chemistry	5	Ed. 6b—Princ. of Secondary Ed.	3
Ed. 25—Educational Psychology	3	Math. 40a—Fundamental Concepts of Mathematics	3
<i>Total</i>	16	Speech 1—Effective Speaking	3
		or Speech 10—Oral Interpretation of Literature	2
		<i>Total</i>	16-17

Fourth Year

Physics ²	6	Physics ²	6
Ed. 10b—Technic of Teaching in the Secondary School	3	Electives ³	10
Ed. Prac. 21—Practice Teaching of Physics	5		
Electives ³	2		
<i>Total</i>	16	<i>Total</i>	16

¹ Physics 14a-14b may be replaced by courses selected from advanced undergraduate and graduate physics courses numbered 20 or higher, upon approval of the adviser.

² Courses in physics for the senior year are to be chosen from those numbered 20 or higher.

³ Electives should be chosen from courses listed for advanced undergraduates in chemistry and mathematics, additional courses in advanced physics, and courses in electrical engineering.

Fifth Year

For the Degree of Master of Science in the Teaching of Physics

Eight units of work are required, including four in physics, two in education, and two in electives. Courses must be selected with the consent of the adviser, who will see that the candidate strengthens areas in which he is weakest. No thesis is required.

	UNITS
Physics.....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

For the Degree of Master of Science in the Teaching of the Physical Sciences

A special program leading to the degree of Master of Science in the Teaching of the Physical Sciences is available to meet the needs of students who wish to study in both chemistry and physics rather than to specialize in one department. It is designed primarily for those preparing to teach the physical sciences in high school. Students working toward a degree under the provisions of this program are expected to seek approximately equal proficiency in both physics and chemistry; those whose undergraduate work has emphasized chemistry should balance this by weighting the graduate work in favor of physics, and vice versa. No thesis is required, and all courses in physics and chemistry which normally give graduate credit will carry credit toward the degree. To qualify for the degree, a student must have had, or must include in his program, at least one course in mathematics beyond the calculus, and for which the calculus is prerequisite.

	UNITS
Physical Science.....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	8

Undergraduate Minor in Physics

	HOURS
Phys. 1 and 3, or 7 and 8—General Physics.....	10
Phys. 14a—Intermediate Mechanics, Heat, and Sound.....	5
Phys. 14b—Intermediate Electricity, Magnetism, and Light.....	5
<i>Total</i>	20

Curriculum Preparatory to Teaching Social Studies

For the Degree of Bachelor of Arts in the Teaching of Social Studies¹

The courses outlined below total 126 to 141 hours. A minimum of 120 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

¹This is a specimen curriculum and may be varied with the advice of the adviser. However, all of the courses listed in the curriculum must be taken at some point in the student's schedule.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition . . . 3		Rhet. 2—Rhetoric and Composition . . . 3	
or D.G.S. 1a—Verbal Expression . . . 4		or D.G.S. 1b—Verbal Expression . . . 4	
D.G.S. 2a—Hist. of Civilization ¹ . . . 4		D.G.S. 2b—Hist. of Civilization ¹ . . . 4	
Foreign Language ² . . . 4		Foreign Language . . . 4	
Science or Mathematics . . . 3		Science or Mathematics . . . 5	
Hygiene 2 or 5 . . . 2		Military Science (for Men) . . . 1	
Military Science (for Men) . . . 1		Physical Education . . . 1	
Physical Education . . . 1			
<i>Total</i>	16-19	<i>Total</i>	16-19

Second Year

Social Studies ³ 6		Social Studies ³ 5	
Pol. Sci. 1a—American Government . . . 3		Hist. 3b—History of the United States, 1828-1946 3	
Foreign Language 4		Foreign Language 4	
Ed. 1—The American Public School . . . 2		Psych. 1—Introduction to Psychology . . 4	
Military Science (for Men) 1		Military Science (for Men) 1	
Physical Education 1		Physical Education 1	
<i>Total</i>	16-17	<i>Total</i>	17-18

Third Year

Social Studies ³ 5		Social Studies ³ 7	
Science or Mathematics 3		Ed. 6b—Principles of Secondary Education 3	
Speech 1—Effective Speaking 3		<i>Any one of the following:</i> ⁵	
or Speech 10—Oral Interpretation of Literature ⁴ 2		Engl. 10b—Study of the Drama 3	
<i>Any one of the following:</i> ⁵		Engl. 11b—Chronological Study of Masterpieces 3	
Engl. 10a—Types of Poetry 3		Philos. 13—Ethics and Value Theory 3	
Engl. 11a—Chronological Study of Masterpieces 3		D.G.S. 6b—Literature and Fine Arts 4	
Philos. 2—Logic 3		Electives ⁶ 2-3	
D.G.S. 6a—Literature and Fine Arts . . 4			
Ed. 25—Educational Psychology 3		<i>Total</i>	15-17
<i>Total</i>	16-18		

Fourth Year

Social Studies ³ 6		Social Studies ³ 4-6	
Electives 9		Ed. 10b—Technic of Teaching in the Secondary School 4	
<i>Total</i>	15	Ed. Prac. 8, 15, 27, 29 or 32—Student Teaching 5	
		Electives 2-3	
		<i>Total</i>	15-18

¹ Students may substitute Hist. 1a-1b, Continental European History; Hist. 2a-2b, History of England; Hist. 5a-5b, The Ancient World.

² A student who has completed two years of foreign language in high school may register in second-year University classes in that language.

³ The social studies requirement is 20 hours in history and 21 hours in social studies fields other than history.

Hist. 3a may be taken to complete the Hist. 3a-3b sequence. Students are also required to complete 12-14 hours in advanced courses in history. In these, at least six hours must be offered in American history and at least six hours in European history (Ancient, Medieval, English, or Modern).

In the social studies fields other than history, the 21 hours of work should include at least one course in each of the following: economics, political science, and sociology. At least eight hours should be taken in each of two social studies fields: economics, political science, sociology, geography.

⁴ Students who take D.G.S. 1a-1b in their freshman year are not required to take Speech 1 or 10.

⁵ Second-year foreign language courses may be used to satisfy this requirement.

⁶ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. Desirable teaching combinations with social studies include art, commercial subjects, English, French, German, home economics, industrial arts, Latin, mathematics, music, physical education, and Spanish.

Fifth Year

For the Degree of Master of Arts in the Teaching of Social Studies

	UNITS
Social Studies (selected from not more than three of the following: history, political science, economics, geography, sociology, philosophy; at least two units must be taken in history).....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed. ¹	1
Electives.....	2
<i>Total</i>	8

Undergraduate Minors in the Social Studies

Other than History

For a minor in the social studies, other than history, a student must complete at least 8 hours of work in each of two of the following subjects: economics, geography, political science, sociology. The minimum total required for a minor is 16 hours.

All, or nearly all, students who earn this teaching minor will have earned teaching majors in the commercial subjects, which require 11 hours of economics, 3 of political science, 3 of economic or commercial geography, and 8 of sociology. These courses satisfy the minimum requirement for teaching civics, community civics, economics, sociology, contemporary problems, and economic or commercial geography in the high school.

Minor in History

For a minor in history, a student must complete 5-6 hours in advanced courses in American history, 8 hours in general European history, and 2-3 hours in one of the following: English, ancient, medieval, or Latin-American history. The minimum total required for a minor is 16 hours.

Curriculum Preparatory to the Teaching of Spanish

For the Degree of Bachelor of Arts in the Teaching of Spanish²

The courses outlined below total 127 to 133 hours. A minimum of 123 hours of credit, not counting the first two years of military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Spanish 1a—Elementary Spanish.....	4	Spanish 1b—Elementary Spanish.....	4
Rhet. 1—Rhetoric and Composition....	3	Rhet. 2—Rhetoric and Composition....	3
or D.G.S. 1a—Verbal Expression....	4	or D.G.S. 1b—Verbal Expression....	4
Laboratory Science.....	5	Science or Mathematics.....	3
Physical Education.....	1	Hygiene 2 or 5.....	2
Military Science (for Men).....	1	Physical Education.....	1
Electives ³	3	Military Science (for Men).....	1
		Electives.....	3
<i>Total</i>	16-18	<i>Total</i>	16-18

¹ Students who have completed a substantial amount of study in American history are advised to elect Education 101.

² Students who complete this curriculum may elect to take the degree of Bachelor of Arts in Liberal Arts and Sciences.

³ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of Spanish may need to be prepared to teach a second minor, requiring a minimum of 16 hours. Minor teaching subjects which constitute desirable teaching combinations with Spanish include English, Latin, and history. A double major in Spanish and English with no minor and a double major in Spanish and Latin with a minor in English are also recommended.

Recommended electives are Spanish 10a-10b, 17a-17b, 18a-18b, Hist. 27a-27b, Engl. 12, 13, 23, 54a-54b, 55a-55b, Rhet. 3.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Spanish 2a—Modern Spanish.....	4	Spanish 2b—Modern Spanish.....	4
Ed. 1—The American Public School....	2	Psych. 1—Introduction to Psychology..	4
Pol. Sci. 1a—American Government....	3	Hist. 3b—History of the United States, 1828-1946.....	3
Speech 1—Effective Speaking.....	3	Physical Education.....	1
or Speech 10—Oral Interpretation of Literature.....	2	Military Science (for Men).....	1
Military Science (for Men).....	1	Electives.....	4
Physical Education.....	1		
Electives.....	4		
<i>Total</i>	<u>17-18</u>	<i>Total</i>	<u>16-17</u>

Third Year

Spanish 3a—Introduction to Spanish Literature.....	3	Spanish 3b—Introduction to Latin- American Literature.....	3
Spanish 7a—Intermediate Composi- tion and Conversation.....	2	Spanish 7b—Intermediate Composi- tion and Conversation.....	2
Ed. 25—Educational Psychology.....	3	Soc. Sci. 1—Latin-American Civilization ¹	3
Science.....	3	Ed. 6b—Princ. of Secondary Ed.....	3
Electives.....	5	Electives.....	5
<i>Total</i>	<u>16</u>	<i>Total</i>	<u>16</u>

Fourth Year

Spanish 9—Spoken Spanish.....	4	Spanish 14b—Phonetics and Syntax... 2	
Electives.....	11	Ed. Prac. 23—Practice Teaching of Spanish.....	5
		Ed. 10b—Technic of Teaching in Secondary School.....	3
		Electives.....	5
<i>Total</i>	<u>15</u>	<i>Total</i>	<u>15</u>

Fifth Year

For the Degree of Master of Arts in the Teaching of Spanish

The exact character of the work in the fifth year will be determined by the particular experience and needs of the individual student. Each program will be worked out in individual conferences between the adviser in the major field and the student.

UNITS	
Spanish (middle group courses, 1-2 units; graduate courses, 2-3 units).....	4
Ed. 125—Advanced Educational Psychology.....	1
Ed. 101—Philos. of Ed.; or Ed. 30—Hist. of American Ed.....	1
Electives.....	2
<i>Total</i>	<u>8</u>

Undergraduate Minor in Spanish

HOURS	
Spanish 1a-1b—Elementary Spanish.....	8
Spanish 2a-2b—Modern Spanish.....	8
Spanish 6a-6b—Elementary Conversation.....	4
<i>Total</i>	<u>20</u>

¹ Credit earned in Social Science 1 is counted toward Spanish major.

Curriculum Preparatory to the Teaching of Speech

For the Degree of Bachelor of Arts in the Teaching of Speech

This program is designed to give the teacher a foundation in three areas of instruction: public speaking, theatre arts, and remedial speech. The courses outlined below total 131 to 137 hours. A minimum of 128 hours of credit, not counting the first two years of work in military science and physical education, is required for graduation.

First Year			
FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Speech 1—Principles of Effective Speaking.....	3	Speech 10—Oral Interpretation of Literature.....	2
Rhet. 1—Rhetoric and Composition.....	3	Rhet. 2—Rhetoric and Composition.....	3
<i>or</i> D.G.S. 1a—Verbal Expression.....	4	<i>or</i> D.G.S. 1b—Verbal Expression.....	4
Foreign Language ¹	4	Foreign Language ¹	4
Science or Mathematics ²	3	Science or Mathematics ²	3
Military Science (for Men).....	1	Hygiene 2 or 5.....	2
Physical Education.....	1	Military Science (for Men).....	1
Electives ³	2	Physical Education.....	1
<i>Total</i>	16-18	<i>Total</i>	15-17
Second Year			
Speech 8—Fundamentals of Acting.....	3	Speech 3—Argumentation.....	3
Foreign Language ¹	4	Psych. 1—Introduction to Psychology.....	4
Ed. 1—The American Public School.....	2	Foreign Language ¹	4
Pol. Sci. 1a—American Government.....	3	Hist. 3b—History of the United States, 1828-1946.....	3
English Literature elective ⁴	3	Military Science (for Men).....	1
Military Science (for Men).....	1	Physical Education.....	1
Physical Education.....	1	Electives.....	2
<i>Total</i>	16-17	<i>Total</i>	17-18
Third Year			
Speech 11—Elements of Stagecraft.....	4	Speech 6—Persuasion.....	3
Speech 18—Pronunciation.....	3	Speech 16—Play Directing.....	3
Speech 19—Speech Science.....	3	Ed. 6b—Princ. of Secondary Ed.....	3
Ed. 25—Educational Psychology.....	3	English Literature elective ⁴	3
English Literature elective ⁴	3	Electives.....	5
<i>Total</i>	16	<i>Total</i>	17
Fourth Year			
Speech 14a—Speech Correction.....	3	Speech 12—Teaching of Speech.....	3
Speech Clinical Practice 1.....	2	Ed. 10b—Technic of Teaching in the Secondary Schools ⁵	4
Electives.....	12	Ed. Prac. 11a—Practice Teaching of Speech ⁵	5
<i>Total</i>	17	Electives.....	5
		<i>Total</i>	17

¹ A reading knowledge of a foreign language (French, German, Greek, Italian, Latin, Portuguese, or Spanish) equivalent to that resulting from four semesters of study of a foreign language commenced in college. This requirement is satisfied by passing French 2b, German 2b or 6, Greek 4, Italian 2b, Latin 1a, Portuguese 2b, Spanish 2b, or a more advanced course in any of these languages. *Note:* No credit toward graduation is given for a beginning course in a foreign language unless it is continued through a full year.

² Six semester hours of natural science are required. The courses in biological science and physical science in the Division of General Studies are especially recommended.

³ Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, beginning teachers of speech may need to complete a second teaching minor of 16 semester hours.

⁴ The following courses in English literature are especially recommended: Engl. 10a, 10b, 23, 16, and 45.

⁵ May be taken during first semester.

Fifth Year*For the Degree of Master of Arts in the Teaching of Speech***A. PUBLIC SPEAKING**

UNITS	UNITS
Speech 121a—Rhetorical Theory.....1	Speech 121b—Rhetorical Theory.....1
Ed. 125—Advanced Educational Psychology.....1	Speech 26—History of American Oratory.....1
Electives.....2	Ed. 101—Philosophy of Education; <i>or</i> Ed. 30—Hist. of American Ed.....1
<i>Total</i>.....4	<i>Total</i>.....4

B. THEATRE ARTS

Speech 22—History of the Theatre.....1	Speech 21—Theories of Play Production.....1
Speech 116—Seminar in Play Direction.....1	Speech 111—Seminar in Play Production.....1
Ed. 125—Advanced Educational Psychology.....1	Ed. 101—Philosophy of Education; <i>or</i> Ed. 30—Hist. of American Ed.....1
Electives ¹.....1	Electives ¹.....1
<i>Total</i>.....4	<i>Total</i>.....4

Undergraduate Minor in Speech

	HOURS
Speech 1—Principles of Effective Speaking.....	3
Speech 10—Oral Interpretation of Literature.....	2
Speech 3—Argumentation.....	3
Speech 8—Fundamentals of Acting.....	3
Speech 12—Teaching of Speech.....	3
Speech 18—Pronunciation.....	3
<i>Total</i>	17

Curriculum in Speech Correction*For the Degree of Bachelor of Science in Speech Correction*

The courses outlined below total 138 hours. A minimum of 128 semester hours of credit, not counting the first two years of military science and physical education, is required for graduation.

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition ² ...3		Rhet. 2—Rhetoric and Composition ² ...3	
Speech 5—Voice Improvement.....1		Speech 1—Effective Speaking.....3	
Physiol. 1a—Mammalian Physiol. ³.....5		Language.....4	
Language ⁴.....4		Physiol. 5—Physiol. of the Nervous System and the Special Senses.....3	
Physical Education.....1		Hygiene 2 or 5.....2	
Military Science (for Men).....1		Physical Education.....1	
Electives ⁵.....2		Military Science (for Men).....1	
<i>Total</i>.....17		<i>Total</i>.....17	

¹ Recommended electives are other advanced courses in Speech; English 5, 35, 36, 45, 130, 147; Music 28.

² In lieu of Rhet. 1 and 2 in the first year, followed by Speech 10 or 1 later, the student may elect D.G.S. 1a-1b, for 4 hours of credit each semester of the first year.

³ Chem. 1, Zool. 1, D.G.S. 3a, 3b, or D.G.S. 4a, 4b may be chosen. Physiol. 1 or its equivalent in a basic course will, in exceptional cases, be accepted to satisfy this requirement.

⁴ Completion of the second year of a foreign language will satisfy this requirement, if the same foreign language is pursued in the University as is offered for entrance to the College. French, German, or Spanish is recommended.

⁵ Electives recommended: Speech 10, 2, or 3, or another course approved by the adviser.

Second Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Ed. 1—The American Public School	2	Ed. 25—Educational Psychology	3
Psych. 1—Introduction to Psych.	4	Hist. 3b—History of the United States, 1828-1946	3
Pol. Sci. 1a—American Government	3	English ¹	3
English ¹	3	Soc. 2—Social Factors in Personality ²	3
Soc. 1—Principles of Sociology ²	3	Physical Education	1
Physical Education	1	Military Science (for Men)	1
Military Science (for Men)	1	Electives ³	3
<i>Total</i>	17	<i>Total</i>	17

Third Year

Speech 18—Pronunciation	3	Speech 20—Speech Science	3
Speech 19—Speech Science	3	Psych. 16—Child Psychology; <i>or</i> Home Econ. 56—The Child and His Development	3
Speech 13—Methods of Teaching Lip Reading	3	Speech 24—Classroom Problems in Speech Correction	3
Ed. 69—Principles and Methods in Remedial Reading	3	Ed. 42—Education of Handicapped Children	3
Electives ⁴	3	Electives ⁴	6
Psych. 23—Abnormal Psychology	3	<i>Total</i>	18
<i>Total</i>	18	<i>Total</i>	18

Fourth Year

Speech 14a—Speech Correction with Laboratory	4	Speech 14b—Speech Correction with Laboratory	4
Ed. Prac. 35a—Speech Correction	3	Ed. Prac. 35b—Speech Correction	3
Ed. 10—Technic of Teaching	3	Electives ⁴	7
Speech 23—Audiometry	3	Psych. 60—Psychology of Excep- tional Children	3
Psych. 35—Clinical Psychology	3	<i>Total</i>	17
Electives	2	<i>Total</i>	17
<i>Total</i>	18	<i>Total</i>	17

Fifth Year

For the Degree of Master of Science in Speech Correction

The following prerequisites are necessary for graduate standing in the curriculum for the degree of Master of Science in Speech Correction: 14 hours of Speech, including courses in Lip Reading, Speech Correction, and Clinical Practice; courses in General Psychology, Child Psychology, and Clinical Psychology; 8 hours of Physiology, including a course in the Physiology of the Nervous System and the Special Senses; courses in Education sufficient to meet requirements for an Illinois Teacher's Certificate.

4 Units in Speech, including:

- Speech 101—Research in Special Topics.
- Speech 114a and 114b—Seminar in Speech Correction.
- Speech 117—Diagnosis of Speech Disorders.

2 Units in Education:

- Education 101—Philosophy of Education; *or* Education 30—History of American Education.
- Education 125—Advanced Educational Psychology.

½ to 1 Unit in Physiology, selected from the following:

- Physiology 6—Advanced Mammalian Physiology.
- Physiology 14—Anatomy, Physiology, and Pathology of the Speech Mechanism and Ear.
- Physiology 43—Endocrinology.

¹ At least 6 semester hours of English are required. The following courses are recommended: Engl. 10a, 10b, 11a, 11b, 12, 13, 20a, 20b, 23.

² D.G.S. 5a and 5b, S.W.A. 20, or S.W.A. 21 may be chosen.

³ Electives recommended: D.G.S. 6a; Sociol. 1 or 2; Language, Conversation; English 20a, 20b; Speech 3, 8, or 6.

⁴ Electives recommended: Lib. Sci. 8; S.W.A. 20, 21; P.E.W. 96; Zool. 25; Psych. 6, 21, 35; Home Econ. 65; Speech 15.

½ to 1 Unit in Psychology, selected from the following:

- Psychology 37—Practice in Psychological Examination.
- Psychology 60—Psychology of Exceptional Children.
- Psychology 106—Neural Theory of the Psychological Functions.
- Psychology 115—Advanced Child Psychology.
- Psychology 130—Psychological Counseling and Psychotherapy.

Electives recommended (under special circumstances, other courses may be substituted with the approval of the adviser):

- Education 42—Education of Handicapped Children.
- Education 115—Education and the Problems of Personality.
- Education 121—Educational Measurements.
- Education 136—Diagnostic and Remedial Programs of the School.
- Speech 15—Methods of Teaching Speech to the Deaf.
- Speech 23—Audiometry.
- Speech 119—Seminar in Speech Science.
- S.W.A. 40—Social Case Work.
- S.W.A. 80—Medical Lectures.
- S.W.A. 81—Psychiatric Information for Social Workers.
- Zoology 25—Genetics.
- Zoology 120—Physiology of Development.

The Library School

FOR COLLEGE GRADUATES PREPARING FOR THE PROFESSION OF librarianship, the Library School offers a two-semester program of courses leading to the degree of Bachelor of Science in Library Science. This program covers general principles and practices of librarianship; during the second semester some opportunity is provided for the study of specialized aspects of library service. For those who have completed such a program and wish to prepare for more responsible and exacting positions in libraries, advanced courses are offered, which lead to the degree of Master of Science, under the auspices of the Graduate School. Seminar courses, individual study, research methods, and bibliographic training are important parts of this advanced program.

For undergraduates in other colleges and schools of the University, introductory courses in library science are offered. Freshmen and sophomores may elect a course in the use of the library and of the reference books which are of most value to college students. Juniors and seniors may elect courses designed to assist them in making fuller use of the library as an instructional aid, and to prepare themselves for positions as teacher-librarians.

Application blanks for admission may be obtained from the Library School and should be returned early enough to allow time for correspondence with the applicant's references before registration day.

For *admission*, see pages 99 and 109; for an account of the *Library*, see page 94; for *honors*, see page 117; for *fees*, see page 118; for *courses*, see page 357.

Pre-Professional Study

Because of the variety of opportunities in library service, the Library School considers applications from students with many kinds of undergraduate specialization. A good general education is a fundamental requirement. Foreign languages, literature, history, the social sciences, and the natural sciences are all important for the prospective librarian.

The knowledge of foreign languages which the student should acquire before entering the Library School varies with the type of library work in which he is interested. In some fields, for example school library service, foreign languages are relatively unimportant. For bibliographical work, reference, cataloging, and most types of work in college, university, and other scholarly libraries, a reading knowledge of two modern foreign languages, preferably French and German, is essential.

Courses in political science (particularly public administration), psychology, sociology, and education are of value, depending on the type of library service in which the student is most interested. The prospective school librarian, for example, should be certain that he can qualify for a teacher's certificate. Students interested in service in a specialized library should have a good background in the subjects involved.

Every student should have a strong major in some academic field during his last two years of undergraduate work. As a general rule courses of a vocational nature, including undergraduate work in library science, should not be included in the program of study.

Advanced Standing

After matriculation, an applicant for advanced standing may obtain credit for some of the courses required for the bachelor's degree in library science by transfer of credits from an approved institution, or by examination if the applicant gives indication of having adequate preparation. In such cases, however, the student must still meet the residence requirements for the degree, and, in consequence, must register for a sufficient number of courses, either in the Library School or in a subject of special interest to him, to make up the usual full schedule of work. Information concerning the possibility of securing advanced standing should be requested with the letter of application.

Curriculum in Library Science

For the Degree of Bachelor of Science in Library Science

Each student's program is planned individually in consultation with the Assistant Director or other designated officer of the School. The student's special abilities and pre-professional training, his interests, and probable professional future form the basis for selecting his course of study. During the first semester each student must complete satisfactorily the five required courses listed below. In the second semester, opportunity is provided for individual specialization.

First Semester

	HOURS
60—Development of the Modern Library	3
61—Cataloging and Classification.....	4
62—Reference Service.....	3
63—Library Materials.....	3
64—Library Administration.....	3
<i>Total</i>	<u>16</u>

Second Semester

During the second semester each student must take Library Science 99 (Inspection Trip). All other courses are elective, and each student is given the opportunity to develop his special interests. Normally the student elects at least one course from each of the following groups, and his program of study totals from fourteen to sixteen semester hours.

Organization and Management:

- 70—Organization and Management of Public Libraries.....3
- 71—Organization and Management of College and University Libraries..3
- 72—Organization and Management of School Libraries.....3
- 73—Service in Special Libraries.....2

Types of Materials:

- 53—Biological Literature and Reference Work.....2
- 54—Audio-Visual Aids and Library Service.....3
- 80—Bibliography and Reference....4
- 81—Introduction to Government Publications.....3

Fields of Special Interest:

- 75—Reading Interests and Guidance of Adults.....3
- 76—Reading Interests and Guidance of Adolescents.....3
- 77—Reading Interests and Guidance of Children.....3
- 78—Problems in Cataloging and Classification.....3

Free Electives:

- 90—History of Books.....3
- 91—Psychology for Librarians.....2
- 92—The Library and the Community.....3

Among his free electives the student may include courses in other departments and schools of the University, provided they are approved for graduate credit. Elections of this type should center about the student's field of special interest and are subject to the approval of the Library School.

Graduate Work

For students who have received a bachelor's degree in library science (see above) and meet the requirements for admission to the Graduate School, programs are arranged which lead to the degree of Master of Science in Library Science. Each student's program is determined by his previous experience and his individual purposes. The work required for a master's degree may consist entirely of courses in library science approved for graduate credit, or may include a minor in any subject for which the student is adequately prepared.

Department of Military Science and Tactics

MILITARY TRAINING HAS BEEN GIVEN AT THE UNIVERSITY OF Illinois since the University was opened in 1868, under the charter issued by the State of Illinois, in compliance with the Federal law which provided for the establishment of land-grant colleges. Since World War I, this training has been given under the provisions of the Acts of Congress of 1916 and 1920, commonly known as the National Defense Acts. Under these laws, the Reserve Officers' Training Corps at the University of Illinois was organized to provide the required basic training and to offer advanced voluntary training on a selective plan. Its program of instruction is normally a part of the academic program of the Urbana departments of the University, since military training has educational values as well as practical values of national defense. The R.O.T.C. training in 1946-1947 was under the Interim and Post-War Programs. The Interim Program of instruction was completed this year and future instruction will all be that of the Post-War Program.

Reserve Officers' Training Corps

Requirements

All male students, unless specifically exempted under University rules, must register for military training and, unless properly excused, must take the full basic course, whether they intend to graduate or not. If credit is to be counted toward graduation, the full basic course of two years must be completed. The exempted students may take military work, if they so desire, by registering for it, except that no student who is not a citizen of the United States and no student who holds a commission, or a certificate therefor, in the Officers' Reserve Corps, Army, Navy, or Marine Corps, will be permitted to register.

Exemptions

- (1) Students over 22 years of age when entering the University.
- (2) Students entering the University with junior standing.
- (3) Students who are not citizens of the United States.
- (4) Students who have satisfactorily completed two years of military training in other senior units of the R.O.T.C.
- (5) Students holding commissions in the Officers' Reserve Corps, Army, Navy, or Marine Corps.
- (6) Students who are certified by the University Health Officer to be physically disqualified for military work.
- (7) Students who have had one year of active military wartime service with any component of the Armed Forces.
- (8) Students enrolled in the N.R.O.T.C. at the University.
- (9) Students who have successfully completed three years' training in Junior R.O.T.C. Units are required to take only one year's training with a senior unit.

Units, Staff, and Equipment

Units of the R.O.T.C. at the University of Illinois are Infantry, Cavalry, Engineers, Field Artillery, Signal Corps, Air Force, Quartermaster Corps, Transportation Corps, Ordnance Corps, and Army Security Agency.

Army officers are detailed by the War Department as instructors in the several units. The senior officer, as academic head of the University's Military Department, is Professor of Military Science and Tactics. In the military organization he is Commandant of Cadets. All other officers hold appropriate subordinate academic and military positions on his staff. An enlisted detachment is also assigned to assist with the instruction.

The equipment for military instruction is furnished by the War Department. It includes the necessary training equipment of uniforms, weapons, and materiel.

The Armory, located on the south campus, includes classrooms, storerooms, and offices, and encloses a drill floor 400 feet long and 200 feet wide, under an arched roof 100 feet high at the center. Near by are the drill fields and parade grounds.

Department of Naval Science

THE NAVAL RESERVE OFFICERS' TRAINING CORPS WAS ESTABLISHED under authority of Section 22 of the Act of Congress of March 4, 1925, as amended (34 U.S. Code, Sup. 821; Public Law 729, 79th Congress). The purpose of the Naval Reserve Officers' Training Corps is to provide, by a permanent system of training and instruction in essential naval subjects at civil educational institutions, a source from which qualified officers may be obtained for the Navy, the Marine Corps, the Naval Reserve, and the Marine Corps Reserve.

The Naval Reserve Officers' Training Corps is now currently operating under the provisions of Public Law 729, 79th Congress. This law is more generally known as the "Holloway Plan" and provides for the following three classes of N.R.O.T.C. students: "Regular," "Contract," and "Naval Science."

The "Regular" student is selected as a result of a world-wide competitive examination followed by the recommendation of an Interviewing Board composed of the President of an N.R.O.T.C. College, a Professor of Naval Science, and a distinguished citizen of the State of Illinois, nominated by the President of the United States. These "Regulars" undergo a rigorous physical examination for which there are no waivers for defects. When notified that he is in all respects qualified in accordance with the foregoing, it is the responsibility of the candidate to achieve admission to the N.R.O.T.C. College of his choice. In the case of these "Regular" students, who are appointed Midshipmen in the U. S. Naval Reserve by the Secretary of the Navy, all costs of tuition, fees, and textbooks are paid by the Government. Necessary uniforms also are provided by the Government, and the "Regular" student receives \$600 a year for other expenses. Normally, students attend college for four years and may undertake any course leading to a baccalaureate degree, but must include twenty-four credit hours of Naval Science plus certain minimum requirements in other academic fields, including mathematics through trigonometry, one year of college physics, and proficiency in written and oral expression. They wear the uniform only when engaged in drills or other naval activities prescribed by the Professor of Naval Science, and, except for the ordinary requirements of gentlemanly conduct, are subject to naval discipline only at those times. "Regular" students are required to make two summer cruises and take one summer period of aviation indoctrination, lasting from six to eight weeks each, and upon graduation must accept a commission as Ensign, U.S.N., or Second Lieutenant, U.S.M.C., if offered. After fifteen months to two years of active duty, they will be given the opportunity to serve an additional year and to apply for a permanent commission in the regular Navy or regular Marine Corps. If, at that time, they do not choose a career in the regular Navy or Marine Corps, they will be required to accept a commission in the Naval Reserve or Marine Corps Reserve. Such reserve commission can not be resigned prior to the sixth anniversary of receiving their first commissions. Unless at their own request, reserve officers are not called to active duty except during war or a national emergency.

The "Contract" student, limited to about ten per cent of the number of "Regular" students entering the N.R.O.T.C. program, is selected by the Professor of Naval Science. The "Contract" student is a member of the N.R.O.T.C. Unit but is not subsidized in any way except that the Government allows him subsistence during his junior and senior years. The amount of this subsistence varies but the current rate is sixty-five cents a day. The "Contract" student is

required to take only one cruise of from two to three weeks in duration. This cruise is normally made upon the completion of the junior year. He receives the pay of the seventh enlisted pay grade during this cruise, the current rate of pay being \$75 a month. With the exception of the cruise requirements, the "Contract" student must fulfill all other requirements of the "Regular." Upon graduation, he is commissioned an Ensign, U.S.N.R., or Second Lieutenant, U.S.M.C.R. He may, upon his own application, be ordered to active duty for a period of two years if the Navy has use for his services.

The "Naval Science" student is not a member of the N.R.O.T.C. and is not subsidized in any manner. "Naval Science" students may not go on cruises and Naval Science courses undertaken by him will count only as an academic subject. Students may enroll as "Naval Science" students only if facilities are available. Normally, "Naval Science" students are enrolled only in numbers sufficient to fill prospective vacancies in the approved quota of N.R.O.T.C. students.

The required Naval Science courses are as follows: first year—Introduction to Naval Science, Communication and Tactics; second year—Ordnance and Fire Control, Fire Control and Electronics; third year—Piloting and Navigation, Advanced Navigation and Tactics; fourth year—Naval Engineering, Ship Construction and Stability. Each course listed is a three-hour course and one course must be taken by the student each semester. For Marine Corps candidates the following special subjects are taught the last three semesters in lieu of the foregoing Naval Science subjects: third year (second semester)—Military Principles, History of War; fourth year—Marine Corps Mission, Organization, Small Unit Tactics, Amphibious Operations, the Landing Team. In addition to these courses, students must attend a two-hour laboratory period weekly.

The course in Naval Science is technical to the extent of covering technical subjects with sufficient detail to permit a graduate of the course to adapt himself quickly to any specific duty in the Navy that may be expectedly assigned to him. In addition, it furnishes a background of naval experience, tradition, and custom that is necessary for an officer going to duty in the Navy.

The course fosters and demands ideals of character such as integrity, discipline, self-reliance, and cooperation which are essential to naval leadership. The association with experienced officers on the staff during the course permits close-knit cooperation in time of active service.

A staff of experienced naval officers is maintained at the University for the guidance and instruction of students. The Professor of Naval Science and the Assistant Professors of Naval Science are appointed to the University faculty. The staff at the present time consists of six Naval officers, one Marine officer, and nine petty officers.

Currently, classes and instruction are conducted in the Armory and in Engineering Hall. When alterations to the building on Mathews Avenue, to be known as the Naval Science Building, are completed, the department will have classrooms, offices, a naval armory, and all training facilities located therein. Equipment provided by the Navy Department is modern and reflects the latest developments of naval equipment. Training aids provide instruction in the most recent methods of naval gunfire, anti-submarine warfare, radar search devices, signals, ship control, and ship damage control. Full use is made of visual and audio training aids in keeping with the latest trend in educational principles in this field.

The School of Physical Education

COURSES IN PHYSICAL EDUCATION ARE REQUIRED OF ALL undergraduate students, both men and women, in the University's colleges and schools at Urbana-Champaign. The School of Physical Education also offers professional curricula, one for men and one for women, each consisting of four years of work and leading to the degree of Bachelor of Science in Physical Education. These curricula provide for specialization in teaching physical education, health and safety, coaching athletics, directing recreation, and related work. Advanced courses leading to the degree of Master of Science in Physical Education are offered under the regulations of the Graduate School.

For *admission*, see page 99; for *fees*, see page 118; for *clubs and societies* auxiliary to the curricula, see page 129; for regulations concerning *unclassified students*, see page 106; for general University requirements for *graduation*, see page 114.

Programs of Physical Education

All freshman and sophomore students are required to take physical education three times a week. The programs offered both men and women include a wide variety of courses designed to meet varying needs of the students. The chief purposes of these programs are: (1) correcting and ameliorating handicapping defects; (2) developing fundamental motor abilities; (3) developing organic power; (4) teaching recreational sports for life use; (5) developing an appreciation of physical fitness and sports. All male students are required to take a motor fitness test before registering.

Extracurricular Athletics

The Athletic Association, closely affiliated with the School of Physical Education, sponsors numerous programs of intercollegiate and intramural sports for undergraduate men and other recreational sports for students and members of the faculty.

The Department of Physical Education for Women conducts an extensive program of intramural sports for women. Students are organized in voluntary inter-class and inter-house teams in hockey, soccer, bowling, basketball, volleyball, apparatus, swimming, baseball, and track and field athletics.

Curriculum in Physical Education for Men

For the Degree of Bachelor of Science in Physical Education

The professional curriculum in Physical Education for Men is designed to prepare students for teaching health, safety, and physical education, coaching athletics, and directing recreation. All applicants must be in good health, with no handicapping physical defects, and must be certified by the University Health Service for specialization in physical education, or be approved by the Director of the School of Physical Education.

This curriculum consists of a freshman-sophomore program, which is essentially the same for all students, and a junior-senior program which includes a core-curriculum and also allows each student to elect courses in one of three areas of specialization. The degree of Bachelor of Science in Physical Education is conferred on students who successfully complete a total of 130 semester hours as outlined below.

Summary of Requirements for Men

	HOURS
Professional physical education courses	45
General courses, as prescribed	21
Foundation science courses, as prescribed	18
Education courses, as prescribed	17
Second subject of specialization	16
Electives	13
<i>Total</i>	130

Freshman-Sophomore Program for Men

In each of the first two years, students who take Group A the first semester will take Group B the second semester, and those who take Group B the first semester will take Group A the second semester.

First Year

FIRST SEMESTER		HOURS	SECOND SEMESTER		HOURS
<i>Group A</i>			<i>Group A</i>		
P.E.M. 4—Beginning Football.....	2		P.E.M. 4—Beginning Football.....	2	
P.E.M. 1—Beginning Basketball.....	2		P.E.M. 1—Beginning Basketball.....	2	
<i>Group B</i>			<i>Group B</i>		
P.E.M. 80—Physical Conditioning Programs.....	2		P.E.M. 80—Physical Conditioning Programs.....	2	
P.E.M. 11—Swimming.....	2		P.E.M. 11—Swimming.....	2	
P.E.M. 70—Professional Orientation.....	2		Rhet. 2—Rhetoric and Composition ¹	3	
Rhet. 1—Rhetoric and Composition ¹	3		Bot. 1a—General Botany ²	3	
Physiol. 3a—Physiological Anatomy.....	5		Physiol. 3b—Physiological Anatomy.....	5	
Hygiene 5—Hygiene and Sanitation.....	2		Hygiene 10—Advanced Hygiene.....	2	
Military Science.....	1		Military Science.....	1	
<i>Total</i>		17	<i>Total</i>		18

Second Year

<i>Group A</i>			<i>Group A</i>		
P.E.M. 15—Outdoor Recreational Sports.....	2		P.E.M. 15—Outdoor Recreational Sports.....	2	
P.E.M. 77—Indoor Recreational Sports.....	2		P.E.M. 77—Indoor Recreational Sports.....	2	
<i>Group B</i>			<i>Group B</i>		
P.E.M. 2—Gymnastics.....	2		P.E.M. 2—Gymnastics.....	2	
P.E.M. 12—Track and Field.....	2		P.E.M. 12—Track and Field.....	2	
P.E.M. 72—Camp and Outing Leadership.....	3		Psych. 1—Introduction to Psychology.....	4	
Hist. 3b—History of the United States, 1828-1946.....	3		Pol. Sci. 1a—American Government.....	3	
Speech 1—Effective Speaking.....	3		Zool. 1—General Zoology ²	5	
Ed. 1—The American Public School.....	2		Military Science.....	1	
Military Science.....	1				
<i>Total</i>		16	<i>Total</i>		17

Junior-Senior Program for Men

	<i>Non-Professional Courses</i>	HOURS
<i>Required:</i>		
Ed. 6b—Principles of Secondary Education.....		3
Ed. 10b—Technic of Teaching.....		3
Ed. 25—Educational Psychology.....		3
Ed. Prac. 1—Practice Teaching of P.E.M.		3
Ed. Prac. 2—Practice Teaching of P.E.M.		3
One Course in Humanities.....		2
<i>Recommended:</i>		
Econ. 2—Elements of Economics.....		3
Hist. 17b—Social and Economic Forces in the U.S. since 1860.....		3
Home Econ. 38—Elementary Nutrition.....		2
Physiol. 11—Physiology of Exercise.....		3
Physiol. 12—Kinesiology.....		3
Sociol. 1—Principles of Sociology.....		3

¹ A student may elect to take D.G.S. 1a-1b as a substitute for Rhet. 1-2, and Speech 1.

² Students who elect a minor in biological science are urged to take an additional course, Bot. 1b (2 hours), during their junior or senior year. A student who does not wish to minor in biological science may substitute a double minor in either general science and physics or chemistry and general science. Desirable second minors with biological science as the first minor include general science, physics, and chemistry. Other combinations may be elected, subject to the approval of the Director of the School.

<i>Required:</i>	<i>Professional Courses</i>	HOURS
P.E.M. 9—Principles of School Health		3
P.E.M. 18—Curriculum in Physical Education		3
P.E.M. 71—Principles of Safety Education		2
P.E.M. 76—Principles of Recreation		3
P.E.M. 84—First Aid		2
P.E.M. 99—Inspection Trip (no credit)		0

Optional:

A minimum of eleven hours of additional credit in professional courses is required. Students who wish to specialize in one of the following fields should select courses in that field as indicated below. Students who do not wish to specialize in one of these fields may select courses from more than one field.

PHYSICAL EDUCATION AND COACHING

	HOURS		HOURS
P.E.M. 3—Theory of Coaching	3	P.E.M. 73—Tests and Measurements in Health and Phys. Ed.	3
P.E.M. 5—Theory of Prescribing Exercise	2	P.E.M. 78—Advanced Football and Six-man Football	2
P.E.M. 6—Wrestling, Boxing, Fencing	2	P.E.M. 79—Advanced Basketball	2
P.E.M. 8—Baseball and Softball	2	P.E.M. 82—Organization of Aquatic Programs	2
P.E.M. 13—Organization of Extra-curricular Sports	3	P.E.M. 83—Training Technics	2
P.E.M. 14—Recreation and Social Activities	2		
P.E.M. 16—History of Sports	2		

PHYSICAL EDUCATION, HEALTH, AND SAFETY

P.E.M. 5—Theory of Prescribing Exercise	2	P.E.M. 19—Organization of Recreation Programs	3
P.E.M. 73—Tests and Measurements in Health and Phys. Ed.	3	P.E.M. 83—Training Technics	2
P.E.M. 74—Organization of School Health Programs	3		

PHYSICAL EDUCATION AND RECREATION

P.E.M. 5—Theory of Prescribing Exercise	2	P.E.M. 16—History of Sport	2
P.E.M. 8—Baseball and Softball	2	P.E.M. 17—Golf, Tennis, Archery	2
P.E.M. 13—Organization of Extra-curricular Sports	2	P.E.M. 19—Organization of Recreation Programs	2
P.E.M. 14—Recreation and Social Activities	2	P.E.M. 82—Organization of Aquatic Programs	2

Fifth Year

For the Degree of Master of Science in Physical Education

Major

The graduate program leading to the degree of Master of Science in Physical Education offers two options: Option 1 is for students who propose to specialize in the areas of physical education, sports, health, safety, physical fitness, rehabilitation, recreation, and camping. Option 2 is for students who propose to teach and/or administer programs of physical education, sports, health, safety, physical fitness, rehabilitation, recreation, and camping in the elementary school, high school, and junior college.

Admission Requirements: For Option 1 the admission requirements are 30 hours of approved undergraduate credit in physical education (candidates with experience in physical education may receive partial credit toward admission up to a maximum of eight hours); eighteen hours of credit in approved undergraduate work in science; and a course in the theory of tests and measurements or a course in theory of statistics. For Option 2, in addition to the above, 16 hours of approved undergraduate credit in education is required.

Graduation Requirements: The graduation requirements for Option 1 are a total of 8 units of credit, including a minimum of 4 units of credit in physical education courses;

registration in and satisfactory completion of P.E. 110; and presentation of an acceptable thesis (2 units). Candidates may petition to waive the thesis requirement. Those who are excused, however, in addition to securing 8 units of credit in courses, are required to take and pass a final comprehensive examination (oral or written) in physical education. For Option 2, in addition to the above, 2 units of graduate credit in education, including Education 125 (one unit), are required.

Minor

Graduate students who choose physical education as a minor must present twenty hours of credit in approved undergraduate work in physical education (candidates with experience in physical education or allied fields may receive partial credit toward admission up to a maximum of 8 hours) and twelve hours of credit in approved undergraduate work in science. At least 2 units of satisfactory credit in physical education must be completed for a minor.

<i>Courses</i>	UNITS
P.E. S101—Problems in Public Health	1
P.E. 102—Problems in Physical Education	1
P.E. 103—Problems in Safety Education	1
P.E. 104—Problems in Health Education	1
P.E. 105—Philosophy of Sport	1
P.E. 106—Technics of Research in Physical Education ¹	1
P.E. 107—Trends and Technics in Rehabilitation	1
P.E. 108—Scientific Foundations of Physical Fitness	1
P.E. 109—Research ²	½ to 2
P.E. 110—Seminar	no credit
P.E. 111—Problems in Recreation	1

Undergraduate Minor in Physical Education

<i>Required Courses</i>	HOURS
Hygiene 5—Elementary Hygiene and Sanitation	2
P.E.M. 9—Principles of School Health	3
P.E.M. 18—Curriculum in Physical Education; or P.E.M. 13— Organization of Extracurricular Sports	3
P.E.M. 84—First Aid	2
<i>Total, Required Courses</i>	<u>10</u>

Elective Courses

The remaining ten hours required for a minor must be chosen from activity courses; four of these hours may be in the general service courses, with the balance selected from the following:

	HOURS
{ P.E.M. 1—Beginning Basketball	2
{ P.E.M. 4—Beginning Football	2
{ P.E.M. 15—Outdoor Recreational Sports	2
{ P.E.M. 77—Indoor Recreational Sports	2
{ P.E.M. 6—Boxing, Wrestling, Fencing	2
{ P.E.M. 8—Baseball and Softball	2
{ P.E.M. 2—Gymnastics	2
{ P.E.M. 12—Track and Field	2
{ P.E.M. 11—Swimming	2
{ P.E.M. 80—Physical Conditioning Programs	2
<i>Total, Elective Courses</i>	<u>10</u>
<i>Total, Required for Minor</i>	<u>20</u>

¹ Normally this course is a prerequisite for students who propose to carry on individual research or write a thesis.

² Students proposing to carry on individual research or write a thesis should register for this course.

Curriculum in Physical Education for Women

For the Degree of Bachelor of Science in Physical Education

The degree of Bachelor of Science in Physical Education is conferred on students who successfully complete a total of 130 semester hours as summarized below.

Summary of Requirements for Women

	HOURS
Physical education courses, as prescribed.....	45
General courses, as prescribed.....	21-23
Basic science courses, as prescribed.....	24
Education courses, as prescribed.....	17
Second subject of specialization.....	16
Electives.....	7
<i>Total</i>	<u>130</u>

First Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Rhet. 1—Rhetoric and Composition....	3	Rhet. 2—Rhetoric and Composition....	3
or D.G.S. 1a—Verbal Expression....	4	or D.G.S. 1b—Verbal Expression....	4
Zool. 1—General Zoology.....	5	P.E.W. 70b—Physical Education	
P.E.W. 70a—Physical Education		Practice (rhythms, basketball,	
Practice (orientation, hockey,		and softball).....	2
gymnastics).....	2	Engl. 10b, Language, or Science.....	3-4
P.E.W. 74, 75, or 76—Swimming.....	1	Bot. 1a—Introductory Botany ¹	3
Hygiene 2—Hygiene and Sanitation....	2	Electives ²	4
Engl. 10a, Language, or Science.....	3-4		
<i>Total</i>	<u>16-18</u>	<i>Total</i>	<u>15-17</u>

Second Year

Hist. 3b—History of the United States,		Pol. Sci. 1a—American Government....	3
1828-1946.....	3	Physiol. 3b—Physiological Anatomy....	5
Speech 1—Effective Speaking.....	3	P.E.W. 71b—Physical Education	
Physiol. 3a—Physiological Anatomy....	5	Practice (folk dancing, stunts,	
P.E.W. 71a—Physical Education		tumbling, and tennis).....	2
Practice (tap dancing, soccer, ad-		P.E.W. 82—Technic of Teaching	
vanced gymnastics, apparatus).....	2	Swimming.....	1
Ed. 1—The American Public School....	2	Psych. 1—Introduction to Psychology..	4
Electives.....	2	Electives.....	2-3
<i>Total</i>	<u>17</u>	<i>Total</i>	<u>17-18</u>

Third Year

Ed. 25—Educational Psychology.....	3	Ed. 6b—Principles of Secondary	
P.E.W. 81—Games for School and		Education.....	3
Playground.....	2	P.E.W. 62—Advanced Rhythms.....	3
P.E.W. 83a—Physical Education		P.E.W. 83b—Physical Education	
Practice (American square and		Practice (volleyball and archery)....	1
social dance).....	1	P.E.W. 95b—Advanced Technic of	
P.E.W. 95a—Technic of Teaching		Teaching Sports.....	4
Sports.....	4	P.E.W. 96—Kinesiology.....	4
P.E.W. 97—Tests and Measurements..	3	Electives.....	2
Electives.....	3		
<i>Total</i>	<u>16</u>	<i>Total</i>	<u>17</u>

¹ A teaching minor in the biological sciences is recommended. For this Bot. 1a is required. Students who do not wish to minor in the biological sciences may substitute, with the approval of the adviser, another course in science.

² Students are required to complete one teaching minor consisting of a minimum of 16 semester hours. In addition, the beginning teacher of physical education may need to be prepared to teach a second minor requiring a minimum of 16 hours. Minor teaching subjects which constitute desirable teaching combinations with physical education include: biological science and chemistry; biological science and general science; biological science and physics; chemistry and general science; and general science and physics.

Recommended electives: in Social Science—Econ. 2, Geog. 3, Hist. 1a-1b, Philos. 5 and 7, Pol. Sci. 16, Psych. 14, Sociol. 1; in Physical Education for Women—P.E.W. 55, 80, 86, 91.

Fourth Year

FIRST SEMESTER	HOURS	SECOND SEMESTER	HOURS
Ed. 10b—Technic of Teaching.....	3	P.E.W. 90—Organization and Administration of Physical Education..	2
Ed. Prac. 3—Practice Teaching of Physical Education ¹	3	P.E.W. 93b—Physical Education Practice (bowling and golf).....	1
P.E.W. 93a—Physical Education Practice (speedball and badminton) ..	1	Ed. Prac. 4—Practice Teaching of Physical Education ¹	3
P.E.W. 98—Theory of Prescribed Exercise.....	3	P.E.W. 99—School Health.....	4
Electives.....	5-7	Electives.....	7
<i>Total</i>	15-17	<i>Total</i>	17

Fifth Year

For the Degree of Master of Science in Physical Education

(See page 273)

Undergraduate Minor in Physical Education

Required Courses

	HOURS
P.E.W. 51—Elementary Rhythms.....	1
P.E.W. 58—Team Games (tennis and basketball).....	1
P.E.W. 58—Team Games (soccer and badminton).....	1
P.E.W. 58—Team Games (volleyball and softball).....	1
P.E.W. 78—Social and American Square Dancing.....	1
P.E.W. 79—Elementary Folk Dancing.....	1
P.E.W. 80—Recreation and Camp Leadership.....	2
P.E.W. 81—Games for School and Playground.....	2
P.E.W. 93—Organization and Methods of Physical Education.....	3
P.E.W. 99—School Health.....	4
<i>Total, Required Courses</i>	17

Recommended Courses for Additional Credit

Physiol. 1—Mammalian Physiology.....	3
P.E.W. 74 or 76—Swimming.....	1
P.E.W. 55—Life Saving.....	1
P.E.W. 72—Fundamentals of Motor Fitness, Stunts, and Tumbling.....	1
P.E.W. 77—Elementary Tap Dancing.....	1
P.E.W. 59—Bowling.....	1
P.E.W. 58—Team Games (hockey and speedball).....	1

¹ One semester is spent in elementary school teaching where the student teacher has complete charge of a class 2 to 3 hours a week and observes elementary school methods of organization and teaching two hours. The other semester is spent in high school where she teaches three hours and observes two hours a week. In both situations, the student teacher makes her own plans, carries them through, aids in program construction, and receives regular supervision.

The College of Veterinary Medicine

TO PREPARE MEN AND WOMEN TO AID AGRICULTURE IN THE control of animal diseases and to protect public health in the suppression and control of animal diseases communicable to man, the College of Veterinary Medicine will offer professional training in veterinary medicine and surgery beginning in the fall of 1948 or 1949. These services to agriculture and public health require high standards of investigation and instruction in keeping with recent advances in chemotherapy, biology, and medicine.

The college is in the process of organization, and buildings and equipment are not available at present. Plans for the first unit of a new building include facilities for teaching, research, and diagnostic work. The second unit will house medicine, surgery, obstetrics, clinic, and hospital.

A tentative curriculum provides for a minimum of two years in pre-veterinary instruction and four years of professional training. Pre-veterinary students at Illinois register in the College of Agriculture (page 153), but equivalent pre-veterinary instruction may be taken at other recognized institutions.

The first two years in the professional veterinary curriculum will be devoted largely to basic veterinary subjects, including anatomy, physiology, bacteriology, parasitology, pharmacology, and pathology, while the last two years of the professional curriculum will consist of instruction in clinical subjects such as medicine, surgery, and obstetrics. In keeping with modern trends in veterinary education, approximately two-thirds of the instruction in the senior year will be in clinical and laboratory practice in connection with the hospital and ambulatory clinics, where the student will apply knowledge gained in classroom and laboratory in the diagnosis, treatment, and prevention of animal diseases. Selected courses in animal husbandry will be required during the first three years. These courses, offered in the College of Agriculture, include livestock management, feeds and feeding, animal genetics, and animal nutrition.

Graduates from this curriculum will be trained in the science and practice of veterinary medicine at the level of the recent advances in medical science. Graduate veterinarians will be qualified for employment by federal and state agencies, such as the U. S. Bureau of Animal Industry; by large corporations, such as meat packers, milk companies, manufacturers of serums and vaccines; by state, county, and municipal livestock disease and regulatory agencies; by public health organizations; by the Federal Food and Drug Administration; by the Veterinary Corps of the Army; by national and state wild life conservation agencies and zoological gardens; by institutions of education and research.

Programs of graduate study leading to advanced degrees in Veterinary Pathology and Hygiene are offered. Particular emphasis is placed on research fundamental to the nature, cause, treatment, and control of animal diseases. Graduate study in veterinary medicine qualifies students for assignments in veterinary research and clinical specialties.

The college is closely affiliated with the Agricultural Experiment Station and Extension Service in research and extension. It cooperates with the State Department of Agriculture in the laboratory diagnosis of animal diseases and in demonstrational programs of animal disease control, and with the State Natural History Survey in research on diseases of wild life.

Inquiries pertaining to the curriculum in veterinary medicine and requests for other information concerning the college should be addressed to the Dean of the College of Veterinary Medicine, University of Illinois, Urbana.

The Division of Special Services for War Veterans

THE DIVISION OF SPECIAL SERVICES FOR WAR VETERANS WAS established to meet the varied needs of the men and women who served in the armed forces, the auxiliary services, or the merchant marine, of the United States or its allies. It is the agency through which the University helps the veteran, particularly the veteran who wishes to begin or continue his education, to prepare himself for life as a civilian. It is a pioneering educational venture breaking traditional educational policies, and allowing for such educational freedom as will serve the best interests of the veteran.

The Division attempts to discover and to meet the needs of the returning veteran. It supplies information to the veteran, and to the man or woman still in service, on the various services of the University, and will, at his request, help him to obtain the benefits which have been offered to him by the State and the Nation. It helps him determine his educational aims and assists him in attaining them. It aids him in making educational adjustments. It guides him in his search for the curriculum which will best satisfy his needs and helps him in arranging for modifications which he desires and which will be accepted by the Division.

For the veteran whose special needs can not be satisfied by existing curricula, the Division will arrange and administer educational programs equivalent in quantity and quality to the traditional curricula. Upon the successful completion of such a course of study, the veteran will be granted the degree of Bachelor of Science.

The veteran whose previous training has not fitted him for admission to the curriculum of his choice may, subject to the admission requirements of the Division, register in the Division, take such courses as will enable him to meet the requirements for admission to that curriculum, and transfer into it when he is adequately prepared to pursue it. Through the Registrar of the University, the veteran can ascertain to what extent he may meet entrance or graduation requirements by credit for service or for courses taken through the United States Armed Forces Institute. Credit in military science, physical education, and hygiene will be granted to any veteran, honorably discharged, who presents evidence that he has completed the basic training program in the Army, Navy, Marine Corps, or Coast Guard. Credit for work taken in college training programs, in technical schools, and in courses pursued while the veteran was in service may be transferred upon the basis of evaluation by the Registrar. For *admission*, see pages 99 and 108.

The veteran may register in the Division of Special Services for War Veterans:

- (1) If he so elects at the time of his first registration and is accepted by the Division.
- (2) If he is referred to the Division by any school or college, and is accepted.
- (3) If he voluntarily transfers to the Division from any school or college according to the usual University procedures.

The man or woman in service, as well as the veteran, is invited to bring or to send to the Division, before, during, or after the time he is an enrolled student, any questions concerning his plans for an education, and to make himself familiar with the services of the Division. An extended explanation of these services may be obtained from the office of the Director, 249 Armory, Champaign, Illinois.

University Council on Teacher Education

THE UNIVERSITY COUNCIL ON TEACHER EDUCATION IS RESPONSIBLE for the general development and coordination of teacher-training programs in the College of Agriculture, the College of Commerce, the College of Fine and Applied Arts, the College of Liberal Arts and Sciences, the School of Physical Education, and the Graduate School.

Committees on Areas of Specialization, cooperating with the Council, administer and supervise the curricula offered, and advise the students enrolled in the curricula. Four-year and five-year curricula leading to bachelors' and masters' degrees and meeting the new requirements for teacher certification are offered in the areas listed below. The chairman of each committee is listed also.

Agriculture (page 154). Dean ROBERT R. HUDELSON.

Art (page 202). Dean CYRUS EDMUND PALMER.

Commercial Teaching (page 165). Professor CHARLES F. SCHLATTER.

English (page 246) and Speech (page 262). Professor HENNING LARSEN.

Exceptional Children (page 263). Professor MARIETTA STEVENSON.

Foreign Languages: French (page 247), German (page 250), Latin (page 252),

Spanish (page 260). Professor JOSEPH FRANCIS JACKSON.

Home Economics (page 157). Professor J. LITA BANE.

Journalism (page 224). Director FREDRICK S. SIEBERT.

Mathematics (page 254) and Mathematics and the Physical Sciences (page 255).

Professor HENRY ROY BRAHANA.

Music (page 206). Professor DUANE ADAMS BRANIGAN.

Physical Education for Men (page 271). Director SEWARD CHARLE STALEY.

Physical Education for Women (page 275). Professor LOUISE FREER.

Science: Biology and General Science (page 242), Chemistry (page 244), Geography (page 249), Physical Sciences (page 258), Physics (page 257). Professor CARL GOTTFRIED HARTMAN.

Social Studies (page 258). Professor THEODORE CALVIN PEASE.

Council

COLEMAN ROBERTS GRIFFITH, Ph.D., LL.D., Provost, *Chairman*

HORACE MONTGOMERY GRAY, Ph.D., Associate Dean of the Graduate School

MATHEW THOMPSON McCLURE, Ph.D., Litt.D., Dean of the College of Liberal Arts and Sciences

WALTER SCOTT MONROE, Ph.D., Acting Dean of the College of Education

REXFORD NEWCOMB, A.M., M.Arch., Dean of the College of Fine and Applied Arts

HENRY PERLY RUSK, M.S., Dean of the College of Agriculture

HIRAM THOMPSON SCOVILL, A.B., C.P.A., LL.D., Acting Dean of the College of Commerce and Business Administration

SEWARD CHARLE STALEY, Ph.D., Director of the School of Physical Education

Coordinator of Teacher Education

CHARLES WILSON SANFORD, Ph.D., Associate Professor of Education

INSTITUTES

THE INSTITUTE OF AERONAUTICS

THE INSTITUTE OF AERONAUTICS IS THE ADMINISTRATIVE agency responsible for the fostering and correlation of the educational and research activities related to aviation in all parts of the University. It consists of an Executive Committee, appointed from departments having a part in the program, and the Director of the Institute, who is *ex officio* a member and chairman of the committee.

The Institute, in addition to academic instruction, flight training, and aeronautical research, is responsible for the management of the Airport which is owned and sponsored by the University. The Airport, with an area of 762 acres, is located near U. S. Route 45, six miles southwest of the Illini Union Building on the campus. Its purpose is to implement a comprehensive program of aviation education and research, and to provide commercial and private landing facilities for the promotion of American air transport and national defense. The Airport makes possible the effectuation of military aviation training programs at the University; provides students with an opportunity to engage in flying activities, both as a part of general education and in connection with professional objectives; and, through trunk and feeder airlines, will provide the University and the community with excellent air transportation. The administration, operation, and servicing activities of the airlines furnish students an opportunity for laboratory study and research.

The present completed facilities, financed by Federal funds through the Department of Commerce of the Civil Aeronautics Administration, consist of three concrete paved runways, each 5,300 feet long and 150 feet wide, one turfed runway, 4,000 feet long and 150 feet wide, a total of 12,000 feet of 50-foot wide concrete paved taxiways, and 89,000 feet of drainage. The land and rights-of-way for the Airport were purchased by the University from funds appropriated by the General Assembly of the State of Illinois. A hangar, 100 feet by 360 feet, together with appurtenant buildings and control tower covering an additional area of 11,000 square feet, provides facilities for making the Airport operative for both educational and commercial purposes.

Plans for the immediate future include the construction of an administration building and additional hangars, together with utilities, lighting, and communication, and other utilities.

THE INSTITUTE OF LABOR AND INDUSTRIAL RELATIONS

The Institute of Labor and Industrial Relations offers undergraduate and professional training at the University, extension service to civic, labor, and management groups, in cooperation with the Division of University Extension, and a research and information service for industry and labor.

The Institute cooperates with other departments and divisions of the University to offer training in labor-management relations to undergraduate and graduate students. This training program is designed to equip students for professional careers in government agencies, industrial organizations, labor unions, or in teaching.

Undergraduate students who wish to major in this field should take courses that furnish a comprehensive background in the development of western civilization and particularly American society. Undergraduates will register in the department of their choice for specialized training in business, engineering, and social sciences. The undergraduate's program should also include such "tool" courses as Elements of Statistics, Fundamentals of Accounting, Principles of Effective Speaking, and Business Letter Writing.

Students planning to carry on graduate study towards the Master of Arts or Doctor of Philosophy degree should arrange their undergraduate programs to comply with requirements for admission to the Graduate School. They should consult with members of the Institute staff regarding courses now offered at the University to provide specialized training in the field.

Four areas of emphasis have been outlined in the field of labor and industrial relations:

(1) *Human Relations in Industry*.—Sociological and psychological contacts of persons in business, commerce, and industry, including relations of management to management, management to labor, labor to labor, and both groups to the community.

(2) *Labor Economics*.—Collective bargaining, labor legislation, mediation and arbitration, social security, wage-price-profit relationships, labor market analysis, and related subjects.

(3) *Labor Union Organization and Administration*.—History of the labor union movement in the United States and in other countries; development of international labor organizations and movements; analysis of union organization, administration, programs, and activities.

(4) *Personnel Management*.—All aspects of industrial relations and personnel management in theory and practice in business, commerce, industry, and the service trades.

Some part-time employment of advanced undergraduates and graduate students is provided in field and library research. In addition, the Institute will establish an in-service training program to give graduate students in the field of labor and industrial relations an opportunity for summer or one-semester employment in union offices and industrial plants.

Details of the Institute's program and facilities are covered in a bulletin, *General Announcement 1947-1948*, available on request at the Institute office, 424 Mumford Hall, Urbana, Illinois.

COURSES OFFERED AT URBANA

EXPLANATION

THE PURPOSE OF THIS CATALOG IS NOT TO ANNOUNCE FUTURE courses of study but to constitute a record of the courses offered in the academic year ending in June, 1947. Prior to the date for registration of students in each term, the courses to be offered in all the Urbana departments of the University are announced in the "Time Table," copies of which may be obtained from the Information Office in the Administration Building. Separate circulars announcing courses are issued annually by the College of Law, the School of Journalism, the Library School, and the Graduate School. Announcements of correspondence courses and extramural courses are issued by the Division of University Extension (see page 464). Courses given during the current year in the Undergraduate Divisions at Chicago and Galesburg and in the professional colleges in Chicago are listed under those divisions.

The following list of courses offered at Urbana in 1946-1947 (including the 1946 summer session) is arranged in alphabetic order of departments. The courses offered by each department are listed numerically in groups with headings to indicate the students for whom they are designed. Special requirements for admission to certain courses are introduced by the word *prerequisite*. Each course that was not given in the current year is enclosed in brackets.

Terms of the year are represented by symbols: "S" for the summer term (8 weeks or 12 weeks), "I" for the first semester, and "II" for the second semester. Courses extending through both semesters are designated as "continuous through I and II." Some courses, indicated by the letter "S" before their serial numbers, are offered only in the summer session.

Credit for undergraduate students is counted in *semester hours*. A semester hour represents the work of one classroom period of fifty minutes each week through one semester, or the equivalent in laboratory or field work. In descriptions of courses the credit values are shown in parenthesis; for example, ("3") meaning three hours of credit each semester.

Credit for graduate students is counted in *units*. A unit course requires approximately ten hours of time each week through one semester, irrespective of the distribution of that time in class work, laboratory or field work, and private study. Four such courses constitute a student's normal program for one semester. In descriptions of courses for graduates, the unit values are stated in parenthesis. Courses in the intermediate groups, which are open to advanced undergraduates as well as to graduates, generally are evaluated for graduate credit as follows:

- (a) 1 *unit* for a 5-hour or 4-hour course, and $\frac{1}{2}$ *unit* for a 3-hour, 2-hour, or 1-hour course, to which *senior standing is prerequisite*.
- (b) $\frac{1}{2}$ *unit* for a 5-hour or 4-hour course, and $\frac{1}{4}$ *unit* for a 3-hour, 2-hour, or 1-hour course, to which *junior standing is prerequisite*.

Some courses have variable credit, as 3 to 5 hours or $\frac{1}{2}$ to 2 units. In registering for a course with variable credit, each student puts on his study-list the number of hours or units for which he intends to take the course.

AERONAUTICAL ENGINEERING

Courses for Undergraduates

1. AERODYNAMICS.—Fundamentals of aerodynamics as applied to the airplane and other means of flight; propeller selection, classical performance analysis, and principles of airplane stability. S, I, and II, (3). *Prerequisite*: Theoretical and Applied Mechanics 1.

2. AIRCRAFT MATERIALS AND PROCESSES.—Physical and chemical properties of materials used in aircraft construction; thermal and chemical treatments of aircraft materials; forming and fabrication. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 81 and 82; Theoretical and Applied Mechanics 3; Aeronautical Engineering 1.
- [3. AIRCRAFT CONSTRUCTION.—A study of the purpose and operation of aircraft parts, accessories, and assemblies. I and II, (3). *Prerequisite:* Sophomore standing in engineering; consent of instructor.]
11. AERODYNAMICS.—Special performance problems; seaplanes and flying boats; principles of airplane stability and control extended; flight testing for performance. S, I, and II, (3). *Prerequisite:* Aeronautical Engineering 1.
- [12. AIRPLANE PROPELLERS.—Propeller blade action theory; aerodynamic propeller testing; blade design and stress analysis; effect of the propeller on airplane performance. I and II, (2). *Prerequisite:* Aeronautical Engineering 1; Theoretical and Applied Mechanics 3.]
22. AIRCRAFT STRUCTURES.—Structural analysis as applied to aircraft; analysis of beams, columns, trusses, connections, and frames; allowable stresses. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63; Aeronautical Engineering 1.
23. AIRCRAFT STRUCTURES.—Continuation of Aeronautical Engineering 22. Buckling of plates; bending and torsion analysis of single and multi-cell shell structures; analysis of tension field beams and beam columns. S, I, and II, (3). *Prerequisite:* Aeronautical Engineering 22; Mathematics 16.
- [24. ADVANCED AIRCRAFT STRUCTURES.—Structural theory and design of aircraft; analysis of unsymmetrical sections, multiple cell structures with thin skin in bending and torsion, and stiffened flat and curved sheets; combined stresses; deflection of beams and trusses. I and II, (3). *Prerequisite:* Civil Engineering 62 and 63.]
25. ADVANCED AIRCRAFT STRUCTURES.—Analysis of trussed structures, space structures, and unsymmetrical sections; influence lines; deflections by graphical analysis; non-circular members in torsion. II, (3). *Prerequisite:* Aeronautical Engineering 23.
- [26. ADVANCED AIRCRAFT STRUCTURES.—Analysis of semi-tension field beams, beam columns, closed frames, curved beams, and indeterminate trusses; column analogy and moment distribution. I and II, (3). *Prerequisite:* Aeronautical Engineering 24 or 25.]
33. AIRCRAFT DETAIL DESIGN.—Layout and design of simple aircraft components; installation, assembly, and detail drawings; standards and specifications. S, I, and II, (2). *Prerequisite:* General Engineering Drawing 3; Aeronautical Engineering 22; Mechanical Engineering 32.
- [34. AIRCRAFT COMPONENT DESIGN.—Design and analysis of aircraft hydraulic, electrical, pneumatic, mechanical, de-icing, and heating systems. I and II, (3). *Prerequisite:* Mechanical Engineering 32; Electrical Engineering 18.]
43. AIRPLANE DESIGN.—Preliminary design of the airplane primarily from the aerodynamic standpoint; planning through to the three-view layout; weight and balance calculation, performance estimation, stability, and load determination. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 2; Aeronautical Engineering 22.
44. AIRPLANE DESIGN.—Airworthiness requirements, stress analysis procedure, and design of the airplane structure. S, I, and II, (3). *Prerequisite:* Aeronautical Engineering 2, 23, and 43.
51. AIRCRAFT POWER PLANTS.—A study of current engines and their construction, supercharging, performance, carburetion, ignition, cooling, engine installation, jet-propulsion engines, and rocket power plants. S, I, and II, (3). *Prerequisite:* Junior standing in engineering.
- [52. FUELS, LUBRICANTS, AND COMBUSTION.—Fuel specifications and tests; lubricants and lubrication; kinetics of flames and combustion. I and II, (2). *Prerequisite:* Chemistry 4; junior standing in engineering.]
53. AIRCRAFT INTERNAL COMBUSTION ENGINE DESIGN.—Internal combustion engine design applied to aircraft engines. II, (3). *Prerequisite:* Mechanical Engineering 9; Aeronautical Engineering 22; consent of instructor.

62. **AERODYNAMICS LABORATORY.**—Experimental aerodynamics illustrating basic principles; use and calibration of instruments; measurement of airflow; pressure distribution; wind tunnel tests of aircraft components and complete model airplane. I and II, (2). *Prerequisite:* Theoretical and Applied Mechanics 5; Aeronautical Engineering 43.
64. **AIRCRAFT STRUCTURES LABORATORY.**—Physical testing of aircraft components and assemblies; use and calibration of strain and deflection measuring devices; design of fixtures used for testing. S, I, and II, (1). *Prerequisite:* Aeronautical Engineering 23.
- [65. **AIRCRAFT PHYSICAL TESTING.**—Physical testing of structural members and assemblies; use and calibration of strain and deflection measuring devices; design of fixtures used for testing. I and II, (2). *Prerequisite:* Aeronautical Engineering 24.]
66. **AIRCRAFT ENGINE LABORATORY.**—Performance testing of aircraft engines; tests of volumetric efficiency, flame propagation, proper fuel distribution, fuel consumption, detonation, ignition, engine friction, and supercharging; installation. S, I, and II, (2). *Prerequisite:* Mechanical Engineering 9.
90. **SPECIAL PROBLEMS.**—Special problems relating to the theory, design, testing, operation, maintenance, or production of airframes or aircraft power plants. S and II, (2 to 4). *Prerequisite:* Senior standing in engineering; consent of instructor.
- [99. **INSPECTION TRIP.**—Visit to airplane manufacturing plants and research institutions. I, (no credit). *Prerequisite:* Senior standing.]

AERONAUTICS

Courses for Undergraduates

1. **PRIVATE PILOT.**—Civil Air Regulations; general service of aircraft; elementary navigation, meteorology, and radio communication. Qualifies students for C.A.A. Private Pilot Certificate. S, I, and II, (3). *Prerequisite:* Permission of the Director; sophomore standing.
- 1a. **PRIVATE PILOT (RESTRICTED).**—Same as course 1 except flying limited to non-spinnable aircraft. S, (3). *Prerequisite:* Permission of the Director.
2. **SECONDARY FLIGHT TRAINING.**—Advanced Civil Air Regulations; radio; meteorology. I and II, (3). *Prerequisite:* Institute of Aeronautics 1; permission of the Director.
- [3. **INTERMEDIATE FLIGHT TRAINING.**—Advanced air navigation including pilotage, dead reckoning, radio, and instrument; navigation instruments; practice navigation problems. I and II, (3). *Prerequisite:* Institute of Aeronautics 2; permission of the Director.]
- [4. **ADVANCED FLIGHT TRAINING.**—Aircraft and aircraft engines from the point of view of the commercial pilot. Qualifies students for C.A.A. Commercial Pilot Certificate. I and II, (3). *Prerequisite:* Institute of Aeronautics 2; permission of the Director.]
5. **FLIGHT INSTRUCTOR.**—Psychology and technic of Flight Instruction. Qualifies students for C.A.A. Flight Instructor Rating. S, I, and II, (3). *Prerequisite:* Commercial Pilot rating; junior standing; permission of the Director.
6. **INSTRUMENT FLIGHT TRAINING.**—Civil Air Regulations; meteorology; aircraft; navigation; instruments and instrument flight procedure. Qualifies students for C.A.A. Instrument Rating. I and II, (3). *Prerequisite:* Commercial Pilot Rating; junior standing; permission of the Director.

AGRICULTURAL ADMINISTRATION

Courses for Undergraduates

1. **AGRICULTURAL AND HOME ECONOMICS WRITING.**—Same as Journalism 24. Open to students in agriculture, home economics, and journalism. I, (3). *Prerequisite:* Junior standing.
6. **AGRICULTURAL EXTENSION.**—II, (2). *Prerequisite:* Junior standing.

AGRICULTURAL ECONOMICS

Courses for Undergraduates

1. INTRODUCTORY AGRICULTURAL ECONOMICS.—Historical basis of current farm problems; relation of production to domestic and foreign demand; marketing, prices, finance, taxation, farm records, social relationships. S, I, and II, (3). No credit for juniors and seniors.
12. RURAL ORGANIZATIONS.—Farmers' organizations, their origins, functions, structures; factors affecting participation of farm people; trends in development of organizations; motivating and stimulating forces; factors making for success or failure; relationships to national policies and rural life. II, (3). *Prerequisite:* Junior standing.
20. FARM MANAGEMENT.—Principles of farm planning for soil conservation and profit; farmstead arrangement; tenure and types of leases; interpretation of farm records; home farm problem. Field trips; estimated expense, \$2. S, I, and II, (3). *Prerequisite:* Sophomore standing.
30. MARKETING OF AGRICULTURAL PRODUCTS.—Methods followed and agencies engaged in marketing farm products; services performed; factors affecting prices; market channels used and ways of lowering costs. S, I, and II, (3). *Prerequisite:* Sophomore standing.
41. PROBLEMS IN AGRICULTURAL ECONOMICS.—Work may be taken in the following subjects: (a) agricultural marketing, (b) agricultural prices and statistics, (c) farm management, (d) land economics, (e) rural organization. I and II, (5). *Prerequisite:* Senior standing; approval of head of department.

Courses for Advanced Undergraduates and Graduates

6. AGRICULTURAL STATISTICS.—Statistical methods with special application to agricultural problems including price behavior. I, (3). *Prerequisite:* Junior standing.
7. RURAL SOCIOLOGY.—Same as Sociology 7. Rural groups and institutions; analysis of rural social problems; population, family, church, education, government, recreation, social welfare; rural social movements and policies. II, (3). *Prerequisite:* Junior standing.
8. AGRICULTURAL PRICES.—The behavior of agricultural prices, methods of price forecasting, and government policies as they affect prices. II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
10. ECONOMIC RELATIONSHIPS OF AGRICULTURE.—Changes affecting the place of farming in American life; the changing place of American agriculture in world economy. I, (3). *Prerequisite:* Economics 1 or 2; junior standing.
14. MANAGEMENT PROBLEMS OF FARMERS' COOPERATIVES.—Place of cooperatives in the economy; characteristics, history, problems, accomplishments; special attention to developments in Illinois. II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
15. FINANCING AGRICULTURE.—Capital and credit needs of farmers, agencies supplying credit needs, problems of borrowers and lenders. II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
18. LAND ECONOMICS.—Farm land prices, rents, taxes, tenancy, transfer; procedures in purchasing and improving land, for aiding conservation, and promoting sound uses. S and II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
22. TYPES AND SYSTEMS OF FARMING.—Factors determining important farming areas and systems in the United States and Illinois; area differences in crop and livestock systems, relation of farming types to income. Local field trips; estimated expense, \$3. I, (3). *Prerequisite:* Agricultural Economics 20.
25. ADVANCED FARM MANAGEMENT.—Planning the farm business for soil conservation and profit; fitting the livestock organization to the crop plan and market outlets; use of economic information; measures of farm efficiency. Field trips; estimated expense, \$5. I and II, (3). *Prerequisite:* Agricultural Economics 20; junior standing.
26. AGRICULTURAL LAW.—Relation of common law principles and statutory law to problems of land tenure, farm tenancy, farm labor, and farm management. I, (3). *Prerequisite:* Agricultural Economics 20; senior standing.

31. **GRAIN GRADING AND MARKETING.**—Same as Agronomy 14. Economic and marketing problems in handling grain; laboratory practice in grain grading. Inspection trip; estimated expense, \$10. I, (3). *Prerequisite:* Agronomy 1; Agricultural Economics 30, or consent of instructor; junior standing.
34. **MARKETING DAIRY PRODUCTS.**—The dairy industry in our national economy; factors affecting per capita consumption; expanding markets by reducing distribution costs; trade associations and labor unions; looking ahead in the milk business. Inspection trip; estimated expense, \$5. II, (2). *Prerequisite:* Agricultural Economics 30, or Business Organization and Operation 2, or twelve hours of dairy husbandry; junior standing.
- [36. **MARKETING HORTICULTURAL PRODUCTS.**—I, (3). *Prerequisite:* Agricultural Economics 30, or twelve hours of horticulture; senior standing.]
37. **MARKETING LIVESTOCK.**—Livestock market practice, as applied in current marketing operations. II, (2). *Prerequisite:* Agricultural Economics 30, or consent of instructor; junior standing.
42. **FARM APPRAISALS.**—Same as Agronomy 35. Valuation of farm real estate; soils, crops, management, buildings, drainage, land titles, prices, and taxes in relation to value. Local field trips; estimated expense, \$5. II, (5). *Prerequisite:* Agronomy 2, Agricultural Economics 20, or their equivalents.

Courses for Graduates

NOTE: Graduate students may take work in agricultural economics leading to the degrees of Master of Science and Doctor of Philosophy. Work is offered in marketing, prices, statistics, economic policies, and finance as applied to agriculture; farm management; land economics; international comparative agriculture; and rural sociology.

Students who desire to secure degrees in agricultural economics are required to have completed either (1) a course of study equivalent to that required for the degree of Bachelor of Science in Agriculture at the University of Illinois, and including twelve hours of agricultural economics and economics; or (2) twelve hours of undergraduate economics and agricultural economics, and in addition at least eight hours in accountancy, business organization and operation, history, political science, and sociology.

A candidate for the degree of Master of Science is required to register for at least two units in economics, including one unit of economic theory. For the degree of Doctor of Philosophy he is required to register for at least five units in economics, including economic theory and history of economic thought.

If approved by the Department of Agricultural Economics and the Dean of the Graduate School, the required work in economics may be treated as a part of the major field. Otherwise, the work in economics will be considered a first minor, in which case the program in that minor will require the approval of the Department of Economics. (See requirements in economics for a minor in that field.)

To take agricultural economics as a minor the student must have had at least twenty hours of undergraduate work in economic and agricultural subjects.

109. **SEMINAR. THESIS COURSE.**—All graduate students whose major is agricultural economics must register in this course, but only those writing theses acceptable for the degree of Master of Science will be given credit. S, I, and II, ($\frac{1}{2}$ to 2 units).
110. **INTERNATIONAL COMPARATIVE AGRICULTURE.**—Agricultural and major food problems of various countries; procedures, national and international, for improved standards. S and I, (1 unit).
- [111a. **AGRICULTURAL PRICES AND STATISTICS.**—Sources and methods of collection and analysis of prices and other agricultural statistics; trend fitting, linear and curvilinear multiple correlation, analysis of variance and sampling. I, (1 unit).]
- 111b. **AGRICULTURAL PRICES AND STATISTICS.**—Prices of agricultural products in the light of their history, value theory, monetary theory, and methods of statistical analysis. II, (1 unit). *Prerequisite:* Agricultural Economics 111a, or equivalent.
112. **AGRICULTURAL ECONOMICS RESEARCH.**—S, I, and II, (1 to 2 units). Credit is conditional on completion of acceptable report of investigation.
118. **LAND ECONOMICS.**—Land classification methods and principles; land tenure systems in modern societies; land deterioration and restoration as private and public problems. II, (1 unit).

119. ECONOMIC POLICIES AND PROGRAMS AFFECTING AGRICULTURE.—Review and critical analysis of governmental policies and programs relating to production, conservation, prices, land, marketing, credit, and nutrition. Major emphasis on developments in the United States with some attention to policies of foreign countries. I, (1 unit).
- 120a. FARM MANAGEMENT PRINCIPLES AND INVESTIGATIONAL METHODS.—Analysis of farm business records; evaluation of measures of efficiency; planning the cropping system for increased income and control of erosion; use of economic information in fitting livestock to the farm plan; efficient use of labor and power. S, (1 unit).
- 120b. FARM MANAGEMENT PRINCIPLES AND INVESTIGATIONAL METHODS.—History and development of farm management in the United States; critical analysis of research methods; use of random sampling; application of selected economic principles. I and II, (1 unit).
135. PROBLEMS IN MARKETING AGRICULTURAL PRODUCTS.—Factors influencing growth of markets; methods of cheapening and improving marketing processes; activities of governmental agencies; cooperative efforts. S and II, (1 unit).
140. SEMINAR IN RURAL SOCIOLOGY.—A survey of historical and current research and its application to the solution of rural social problems; family, community, education, health, welfare, etc., adapted to students in rural sociology, agricultural economics, and related fields. II, (1 unit).

AGRICULTURAL ENGINEERING

Courses for Undergraduates

1. INTRODUCTION TO AGRICULTURAL ENGINEERING.—Agricultural problems involving an application of engineering knowledge and methods; land engineering, power and machinery, buildings and equipment. Lectures, recitations, and laboratory. S, I, and II, (3). Seniors receive only two hours credit.
2. FIELD AND POWER-DRIVEN MACHINERY.—Theory of design and construction; operation and management of machines for soil and feed preparation; seeding, cultivating, and harvesting. Lectures, recitations, and laboratory. I, (3). *Prerequisite:* Agricultural Engineering 1.
3. GAS ENGINES AND TRACTORS.—Theory of construction and operation of engines, timing, ignition, carburetors; fuels, carburetion, lubrication, cost of operation, and trouble work. Lectures, recitations, and laboratory. II, (3). *Prerequisite:* Agricultural Engineering 1.
- 3s. GAS ENGINES AND TRACTORS.—Special ten-week course for practice teachers. Similar to Agricultural Engineering 3. Inspection trip costing \$3 to \$10 required. I and II, (3). *Prerequisite:* Agricultural Engineering 1.
6. TRACTORS AND FIELD MACHINERY.—The design, construction, and application of gas engines, tractors, and field machinery. Lectures, quiz, and laboratory. S and II, (3). *Prerequisite:* Sophomore standing.
7. FARM STRUCTURES AND SOIL AND WATER CONSERVATION.—Principles of plan, construction, and adaptation of structures to farm needs; study of drainage, soil erosion control, and water conservation on farms. Lectures, field work, and laboratory. S and I, (3). *Prerequisite:* Sophomore standing.

Courses for Advanced Undergraduates

4. FARM BUILDINGS.—Materials, construction, arrangement, design, and cost estimation. Lectures, recitations, and drafting. II, (3). *Prerequisite:* Agricultural Engineering I, or consent of instructor; junior standing.
5. SURVEYING, DRAINAGE, AND THE MECHANICS OF SOIL AND WATER CONSERVATION.—Chaining, mapping, leveling; drainage principles; setting grade stakes; laying tile, soil erosion control; water conservation. Lectures, field work, and drafting. II, (3). *Prerequisite:* Agricultural Engineering 1, or consent of instructor; junior standing.
12. FARM HOME EQUIPMENT.—Water supply, water systems, plumbing, and sewage disposal; house lighting and heating. Lectures, recitations, and laboratory. II, (3). *Prerequisite:* Agricultural Engineering 1, or consent of instructor; junior standing.

- 21s. **FARM SHOP WORK.**—Special ten-week course for practice teachers. Farm machinery and equipment repairs, simple construction jobs, care of tools, shop planning. Recitations and laboratory. S, I, and II, (3).
- [28. **ADVANCED GAS ENGINES AND TRACTORS.**—I, (3). *Prerequisite:* Agricultural Engineering 3; consent of instructor.]

Courses for Advanced Undergraduates and Graduates

24. **FARM HOME PLANNING IN RELATION TO FUNCTION.**—Same as Home Economics 24. A study of housing as affected by modern trends in family life and details involved in planning a functional house. S and II, (2). *Prerequisite:* Home Economics 10 or consent of instructor; junior standing.
42. **HYDRAULICS OF SOIL AND WATER CONSERVATION.**—Water sheds, run-off studies, cross sections of gullies; capacities of structures, terraces, and terrace outlets; design of structures; constructing terraces; machines used on erosion control; estimating costs and benefits of various methods of control. I, (3). *Prerequisite:* Civil Engineering 15; Theoretical and Applied Mechanics 4 and 64; credit or registration in Civil Engineering 50, 62, and 63.
43. **FARM POWER.**—History, development, transmission, measurement, efficiency, design, principles of operation, sources, adaptation. I, (3). *Prerequisite:* Mechanical Engineering 10 or 13.
44. **DESIGN OF AGRICULTURAL MACHINERY.**—Survey of needs and requirements, layout of design, estimation of cost, and study of production problems. II, (3). *Prerequisite:* Mechanical Engineering 41; senior standing; consent of instructor.
45. **ADVANCED FARM STRUCTURES.**—Materials, construction, planning, and design of shelter, storage, and residence buildings. Lectures, conferences, and drafting. I, (3). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63; Civil Engineering 61.
51. **SPECIAL PROBLEMS.**—Each student chooses a special problem for design, laboratory, or field work with special library research. S, I, and II, (3). *Prerequisite:* Senior standing; approval of head of department.

AGRONOMY

Courses for Undergraduates

1. **FARM CROPS.**—Production and harvesting of common farm crops; means of improvement; diseases, insects, weeds, and their control; seed purity and germination; market grades of grain. Lecture and discussion. S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* Botany 5.
2. **SOILS.**—General introductory course. Origin, formation, and nature of soils; kinds of soils and their properties; conservation and increase of productive capacity; fertilizers, management practices, and cropping systems. Lectures, quiz, and laboratory. S, I, and II, (5). *Prerequisite:* Chemistry 5; Geology 44.
3. **PRINCIPLES OF SOIL CONSERVATION.**—National and local implications of soil conservation and its relation to farming systems, land management, climate, and farming operation. II, (3). *Prerequisite:* Agronomy 1 and 2.
18. **INVESTIGATION WITH THESIS.**—Work may be taken in the following subjects: (a) soils, (b) crops. S and I, (5); credit toward graduation not given for either semester separately. *Prerequisite:* Senior standing; 20 hours pertinent to the thesis problem; approval of head of the department.

Courses for Advanced Undergraduates and Graduates

7. **CROP PRODUCTION AS AFFECTED BY ENVIRONMENTAL FACTORS.**—Ecological behavior of farm crops. Lectures and assigned readings. I, (3). *Prerequisite:* Agronomy 1; junior standing.
8. **FORAGE CROPS.**—Adaptation, culture, utilization, and preservation. Lectures, discussions, and readings. Field trip to be arranged; cost not to exceed \$1. II, (3). *Prerequisite:* Agronomy 1.
10. **GENESIS, MORPHOLOGY, CLASSIFICATION, AND GEOGRAPHY OF SOILS.**—Factors governing and processes active in soil development; physical and chemical properties of the soil groups of the world; classification and nomenclature of soil; soil geography. Lectures and assigned readings. Field trips to be arranged; cost not to exceed \$16. S and II, (3). *Prerequisite:* Agronomy 2; junior standing.

11. ROLE OF MICROORGANISMS IN SOIL FERTILITY.—Microorganisms of the soil in relation to fertility; nitrogen fixation, assimilation, and preservation. Lectures. I, (3). *Prerequisite:* Agronomy 2; Bacteriology 5a; junior standing.
13. SOIL PRODUCTIVITY, ITS VARIATION, MODIFICATION, AND CONSERVATION.—Factors affecting soil productivity and its conservation; soil type response; influence of cropping systems, fertilizers, and management practices on productivity trends. Lectures, discussions, and assigned readings. II, (3). *Prerequisite:* Agronomy 2; senior standing.
14. GRAIN GRADING AND MARKETING.—See Agricultural Economics 31.
22. IMPROVEMENT OF FARM CROPS BY BREEDING.—Heredity and variation in crop plants, effects of self-fertilization and cross-fertilization, principles and results of selection and hybridization in crop improvement. Lectures, readings, and demonstrations. I, (3). *Prerequisite:* Agronomy 1; junior standing.
29. PRINCIPLES OF FIELD PLOT EXPERIMENTATION.—Purpose, methods, principles of field experimentation; interpretation of results. Lectures, discussions, and problems. I, (3). *Prerequisite:* Senior standing.
30. METABOLISM OF SOIL MICROORGANISMS.—Chemistry and bacteriology of the nitrogen cycle; nitrogen fixation, nitrification, nitrate assimilation, denitrification, and synthesis of nitrogen compounds by microorganisms; relation of nitrogen to other cycles. Lectures and assigned readings. II, (3). *Prerequisite:* Bacteriology 5a-5b (or 20); Chemistry 32; junior standing.
32. PHYSICAL METHODS FOR SOIL CONSERVATION STUDIES.—Physical properties of soils affecting conservation, productivity, and drainage; their investigation by field and laboratory methods. Lecture, discussion, laboratory. I, (3). *Prerequisite:* Agronomy 2; junior standing. Given in alternate years.
33. CHEMISTRY OF FERTILIZERS AND THEIR SOIL REACTIONS.—Fertilizers and fertilizer materials; their sources, manufacture, chemical properties, uses, reactions with soils, and factors influencing their availability to growing crops. Lectures and discussions. I, (3). *Prerequisite:* Agronomy 2; junior standing.
35. FARM APPRAISALS.—See Agricultural Economics 42.
36. CORN BREEDING.—Principles and procedure involved in developing, testing, and production of inbred lines and hybrids; production and processing of hybrid seed corn; genetics of corn. II, (3). *Prerequisite:* Agronomy 22, or its equivalent; junior standing.

Courses for Graduates

NOTE: Candidates for the M.S. and Ph.D. degrees in agronomy may specialize in soil fertility, soil physics, soil biology, plant breeding, or crop production. For either degree, if two minors are chosen, the first should be, and both may be, taken in a department other than agronomy. If only one minor is chosen, it must be in some other department. A candidate for the master's degree in agronomy must present an acceptable thesis, and show proficiency in his work as demonstrated by suitable examinations, prescribed by the department. Students must have had the fundamental work in science prerequisite to the major and minor fields of study. Fifteen semester hours in agronomy and related subjects are prerequisite for a minor, and five additional hours for a major; but students with unusually good training in science may be exempted from certain of these requirements.

101. CHEMICAL PROPERTIES OF SOILS: THEIR RELATION TO SOIL DEVELOPMENT AND PLANT GROWTH.—Chemical properties of soils and soil materials; chemical aspects of soil development; their significance as factors in crop growth and plant nutrition. Discussion and assigned reading. I, (1 unit).
104. SEMINAR.—I and II, ($\frac{1}{4}$ unit).
108. PASTURE, RANGE, AND SOIL CONSERVATION RESEARCH.—Discussion and study of data and literature pertaining to pastures, range, and soil conservation. Application of research methods to the evaluation of forage species in the management and utilization of pasture and range, and to soil conservation. II, (1 unit). *Prerequisite:* Agronomy 1 and 7 or 8.
112. THEORY AND ANALYSIS OF PLANT BREEDING PROBLEMS.—Genetics of crop plants; problems in selection and hybridization. Lectures and problems. II, (1 unit).
114. PRINCIPLES UNDERLYING THE PRODUCTION OF CROPS.—Ecology, methods, and results of investigations. II, (1 unit).
118. RESEARCH.—Work may be taken in the following subjects: (a) soils, (b) crops. S, I, and II, ($\frac{1}{2}$ to 4 units).

ANIMAL HUSBANDRY**(Including Animal Nutrition)****Courses for Undergraduates**

1. INTRODUCTION TO ANIMAL HUSBANDRY.—Elementary livestock judging. Required of all students in the curriculum in general agriculture. I and II, (3). Juniors and seniors receive only two hours credit.
3. BREEDS AND MARKET CLASSES OF LIVESTOCK.—I, (5). *Prerequisite:* Animal Husbandry 1, or equivalent.
6. LIVESTOCK MANAGEMENT.—Breeding, feeding, and management of horses, beef cattle, sheep, and swine. S and II, (3). *Prerequisite:* Animal Husbandry 21.
10. FARM MEATS.—Slaughter, grading, cutting, and processing of meats. An inspection trip will be made to the Chicago Stock Yards and packing plants. The cost of the trip will be approximately \$15. II, (3). *Prerequisite:* Animal Husbandry 36.
12. SPECIAL PROBLEMS.—I and II, (3 or 5). *Prerequisite:* Senior standing; approval of head of department.
21. PRINCIPLES OF FEEDING.—Composition of feeds and of animal products; manurial value of feeds; how the animal utilizes its feed; balancing rations. S, I, and II, (3). *Prerequisite:* Chemistry 1 or 2.
36. SELECTION AND USE OF MEAT.—Physical and chemical composition; nutritive value; selection and utilization of cuts. Lectures and demonstrations. I, (2).
37. POULTRY MANAGEMENT.—Lectures, readings, quizzes, and laboratory. II, (3 or 4). Students may register for this course either with or without the laboratory. *Prerequisite:* Animal Husbandry 21.
38. POULTRY BREEDS AND JUDGING.—From the students taking or having had this course will be chosen the team to represent the University in the Annual Midwest Intercollegiate Student Poultry Judging Contest. I, (3). *Prerequisite:* Animal Husbandry 37.

Courses for Advanced Undergraduates and Graduates

- [22. ADVANCED STOCK JUDGING.—From the students in this class will be chosen the team to represent the University in the Annual Intercollegiate Student Judging Contest. I, (3). *Prerequisite:* Animal Husbandry 3.]
- [24. MEAT JUDGING AND SPECIAL PROBLEMS.—From the students in this class will be chosen the team to represent the University in the Annual Intercollegiate Student Judging Contest. I, (2 to 5). *Prerequisite:* Animal Husbandry 10 or 36.]
25. BEEF PRODUCTION.—Beef cattle on corn belt farms; breeding, feeding, management, and marketing. S, I, and II, (3). *Prerequisite:* Animal Husbandry 6.
26. PORK PRODUCTION.—The place of the swine enterprise on the farm; selecting, breeding, feeding, managing, and marketing of swine for greatest profit. S, I, and II, (3). *Prerequisite:* Animal Husbandry 21.
27. SHEEP HUSBANDRY.—The opportunities in sheep production on Illinois farms; breeds, feeding, and management. II, (3). *Prerequisite or concurrent:* Animal Husbandry 6.
28. HISTORY OF BREEDS OF LIVESTOCK.—In addition to lectures, discussions, and assigned readings dealing with the historical development of the various breeds, some judging practice will be used to illustrate different breed types. II, (3). *Prerequisite:* Animal Husbandry 3. It is recommended that this course precede Animal Husbandry 22.
33. LIGHT AND HEAVY HORSES: BREEDS, MANAGEMENT, JUDGING.—II, (3). *Prerequisite:* Animal Husbandry 21 or junior standing.
41. ANIMAL GENETICS.—The principles of heredity and their application to the problems of breeding. Lectures and demonstrations. II, (3). *Prerequisite:* Zoology 14.

Courses for Graduates

NOTE: Students entering graduate work in animal husbandry must have had a thorough training in the fundamental principles of the subject, either in connection with, or in addition to, a course of study in agriculture substantially equivalent to that offered in the University.

112. RESEARCH.—Work may be taken in the following subjects: (a) economic factors in meat production, (b) systems of livestock farming, (d) animal nutrition, (e) animal genetics, (f) poultry husbandry. I and II, ($\frac{1}{2}$ to 2 units).

117. ANIMAL GENETICS.—Physiology of reproduction, fertility, heredity. I and II, (1 unit).
 121. LABORATORY METHODS IN ANIMAL GENETICS.—I and II, ($\frac{1}{2}$ to 1 unit).

ANIMAL NUTRITION

Courses for Advanced Undergraduates and Graduates

51. INTRODUCTION TO ANIMAL NUTRITION.—For students whose major is not animal nutrition and who desire an introduction to the principles and the practical applications of the science to animal feeding. II, (3). *Prerequisite:* Animal Husbandry 21; Chemistry 32.

Courses for Graduates

101. PRINCIPLES OF ANIMAL NUTRITION.—Physical and chemical properties of food nutrients; digestibility, absorption, and metabolism of nutrients; functions served by foods and factors affecting food utilization; principles involved in the determination of food requirements. I, (1 unit).
 102. ADVANCED COURSE IN ANIMAL NUTRITION.—A factorial study of the nutrient requirements of animals and man, and of the net nutritive values of feeds and food materials; comparative nutrition. II, (1 unit). *Prerequisite:* Animal Nutrition 101, or consent of instructor.
 103. LABORATORY METHODS IN ANIMAL NUTRITION.—S, I, and II, ($\frac{1}{2}$ to 1 unit).
 104. METHODS OF VITAMIN ASSAY.—S and II, ($\frac{1}{2}$ to 1 unit). *Prerequisite:* Chemistry 50; consent of instructor.
 105. ANIMAL NUTRITION SEMINAR.—I and II, ($\frac{1}{2}$ unit).
 106. RESEARCH.—I and II, ($\frac{1}{2}$ to 3 units).
 107. VITAMINS IN NUTRITION.—Nutritional requirements for individual vitamins; physiological function; metabolism and deficiency symptoms in different species. I, ($\frac{3}{4}$ unit). A minimum of $\frac{1}{4}$ unit in Animal Nutrition 108 is required for registration in 107.
 108. LABORATORY METHODS IN VITAMIN NUTRITION.—Feeding experiments designed to acquaint students with the symptoms of vitamin deficiency and with recent methods of research in vitamin nutrition. I, ($\frac{1}{4}$ to 1 unit).

ARCHITECTURE

Courses for Undergraduates

13. ARCHITECTURE AND CIVILIZATION OF THE NEAR ORIENT.—An analysis of structural space and form in the Near Orient, from Egypt to Persia (Iran)—based on a study of the environmental influences and scientific achievement which governed the production in each area. Illustrated lectures, readings, sketches, and reports. I and II, (2). *Prerequisite:* Architecture 31 or 32, or sophomore standing.
 14. ARCHITECTURE AND CIVILIZATION OF GREECE AND ROME.—An analysis of structural space and form in the areas affected by the classical developments of Greece and Rome. The course follows the pattern of Architecture 13 in the consideration of environmental influences and scientific achievement as factors underlying classic structural form. Illustrated lectures, readings, sketches, and reports. II, (2). *Prerequisite:* Architecture 13.
 31-32. ARCHITECTURAL DESIGN.—Beginning study of architectural planning and designing. Fundamentals of sketching and presentation. S, I, and II, (3).
 33-34. ARCHITECTURAL DESIGN.—Continued study of architectural planning and designing; study of principles of plan, elevation, and section of small buildings. S, I, and II, (3). *Prerequisite:* Architecture 32.
 43. MATERIALS AND METHODS OF CONSTRUCTION.—Methods and materials of wood frame construction; manufacture and uses of allied materials; working drawings; detailing. I, (3). *Prerequisite:* Architecture 32.
 44. MATERIALS AND METHODS OF CONSTRUCTION.—Methods of masonry and fireproof construction; manufacture and uses of materials of such construction; working drawings; detailing. I and II, (3). *Prerequisite:* Architecture 43, or consent of instructor.
 45. STRUCTURAL ELEMENTS.—Graphical and algebraic analysis of forces; centroids;

- moments of inertia; bending moments, shear, and deflection in beam design; truss loadings and stresses; kerns, pressures, shear, and moments in masonry structures. Use of handbooks. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics I or 17.
46. THEORY OF STRUCTURAL DESIGN.—Analysis and design of timber trusses, riveted steel trusses, welded steel trusses, timber floor panels, steel floor panels, columns, plate girders, trussed beams, and application problems from actual professional practice. Use of handbooks. S, I, and II, (3). *Prerequisite:* Architecture 45.
55. BUILDING SANITATION.—Water supply and treatment, drainage systems, sewage disposal, plumbing fixtures and their installation. I and II, (1). *Prerequisite:* Junior standing in architecture.
56. BUILDING SANITATION.—Water supply and treatment, purification, pumping and storage, piping and drainage systems, plumbing fixtures and their installation, plumbing design. I and II, (2). *Prerequisite:* Junior standing in architecture.
- 65-66. STUDY OF MODERN PLANNING PROBLEMS.—Lectures and discussions. Continuous through I and II, (1). *Prerequisite:* Registration in Architecture 35 or 36.
- 71-72. ELEMENTS OF DRAWING AND DESIGN.—Not open to students expecting a degree in architecture. Architectural elements, rendering, and composition. I and II, (3).
75. FRAME CONSTRUCTION DETAILS.—For landscape architects. Not open to students expecting a degree in architecture. I, (2). *Prerequisite:* Consent of instructor.
76. MASONRY CONSTRUCTION DETAILS.—For landscape architects. Not open to students expecting a degree in architecture. II, (2). *Prerequisite:* Architecture 75.

Courses for Advanced Undergraduates and Graduates

- 15-16. ARCHITECTURE AND CIVILIZATION OF EUROPE FROM A.D. 300 to 1400.—An analysis of structural space and medieval form in Europe, based on a study of the environmental influences and scientific achievement which governed production during this epoch. Illustrated lectures, readings, and semester reports. I and II, (2). *Prerequisite:* Architecture 14.
17. ARCHITECTURE AND CIVILIZATION OF EUROPE SINCE 1400.—An analysis of structural space and form in Europe during the Renaissance, based on a study of the environmental influences and scientific achievement which governed the production of modified classic structural forms. Illustrated lectures, readings, sketches, and reports. I and II, (2). *Prerequisite:* Architecture 16.
18. ARCHITECTURE AND CIVILIZATION OF THE AMERICAS AND MODERN EUROPE.—An analysis of structural space and form in the Americas down to the present time, and in modern Europe, based on a study of environmental influences and modern scientific achievement, which have brought about a gradual change from traditional to modern methods of construction. Illustrated lectures, readings, sketches, and reports. I and II, (2). *Prerequisite:* Architecture 17, or senior standing in architecture.
- 35-36. ARCHITECTURAL DESIGN.—Principles of planning and design as comprised within the Class B programs of the Beaux Arts Institute of Design. S, I, and II, (5). *Prerequisite:* Architecture 34.
- 37-38. ARCHITECTURAL DESIGN.—Principles of planning and design as comprised within the Class A programs of the Beaux Arts Institute of Design. S, I, and II, (7). *Prerequisite:* Architecture 36; senior standing in architecture.
47. THEORY OF STRUCTURES.—Analysis of framework; industrial buildings; churches; arches; deflections; elastic theory. S, I, and II, (5). *Prerequisite:* Architecture 46; registration in Architecture 57.
48. ADVANCED STRUCTURES.—Theaters, assembly halls, and high buildings; continuous beams and trusses; rigid frames; statical indetermination. S, I, and II, (5). *Prerequisite:* Architecture 47; registration in Architecture 58.
57. REINFORCED CONCRETE THEORY.—Principles of reinforced concrete construction; theory of design of structural elements. S, I, and II, (3). *Prerequisite:* Architecture 46; registration in Architecture 47.
58. REINFORCED CONCRETE DESIGN.—Reinforced concrete building design; analysis of various types of modern fireproof construction. S, I, and II, (3). *Prerequisite:* Architecture 57; registration in Architecture 48.
68. SPECIFICATIONS.—Lectures and discussion of specifications for buildings; supplementary and general conditions of the contract; detailed specifications; supervision and superintendence; building laws and codes. I and II, (3). *Prerequisite:* Senior standing in architecture.

83. ARCHITECTURAL PRACTICE.—From school to practice; discussion of professional ethics and problems confronting the architect in the conduct of his business; procedure and control of work in the office and in the field; methods of making architectural estimates; contracts and contract documents; awarding of contracts. I and II, (2). *Prerequisite:* Senior standing in architecture.

Courses for Graduates

NOTE: The prerequisite for graduate work in architecture is the equivalent of the undergraduate courses required for the bachelor's degree in the branches of the subject in which registration is desired.

101. ARCHITECTURAL CONSTRUCTION.—Special problems. I and II, ($\frac{1}{2}$ to 2 units).
 103. ARCHITECTURAL CONSTRUCTION.—Theory and design. I and II, ($\frac{1}{2}$ to 2 units).
 104. ARCHITECTURAL DESIGN.—Advanced course. I and II, (1 to 3 units).
 106. ARCHITECTURAL HISTORY.—Special research. I and II, ($\frac{1}{2}$ to 2 units).

ART

Courses for Undergraduates

- 1a-1b. DESIGN.—For home economics students. Composition in line, pattern, monochrome, and color. I and II, (2). Seniors receive only one hour credit.
 2a-2b. WATER COLOR.—Still-life and outdoor sketching. S, I, and II, (2). *Prerequisite:* Art 26.
 4a-4b. INTERIOR DESIGN.—Continuous through I and II, (2). *Prerequisite:* Art 32a concurrently, or Art 1b.
 11. INTRODUCTION TO THE HISTORY OF FINE ARTS.—Cultural analysis of the interrelated fields of architecture, sculpture, painting, and other humanistic studies previous to the Italian Renaissance. I, (3). *Prerequisite:* Sophomore standing.
 12. SURVEY OF ART HISTORY.—Cultural analysis of the interrelated fields of architecture, sculpture, painting, and other humanistic studies beginning with the Italian Renaissance and continuous through the Modern Period. II, (3). *Prerequisite:* Art II; sophomore standing.
 13. HISTORY OF ART AND CULTURE: ANCIENT PERIOD.—Painting, sculpture, and minor arts from the Early Egyptian through the Assyrian, Babylonian, Persian, Pre-Greek, Greek, Etruscan, and Roman periods. S and I, (2). *Prerequisite:* Sophomore standing.
 14. HISTORY OF ART AND CULTURE: MEDIEVAL PERIOD.—Painting, sculpture, and minor arts of the Early Christian, Byzantine, Romanesque, and Gothic periods. I, (2). *Prerequisite:* For art students, Art 13; for non-art students, sophomore standing or consent of instructor.
 21a-21b. FREEHAND DRAWING.—Primarily for students in architecture and landscape architecture. Simple groups of block forms, still life, and casts in pencil and charcoal. S, I, and II, (2).
 22a-22b. FREEHAND DRAWING (CONTINUED).—Primarily for students in architecture and landscape architecture. Charcoal drawing from the cast; water color. S, I, and II, (2). *Prerequisite:* Art 21b.
 25-26. ART FORM.—Structure of graphic expression; drawing from cast and still life. Design; clay modeling; action sketch from model. Weekly lecture; demonstration on various phases of art. S, I, and II, (5). Seniors receive only four hours credit.
 25a. INTRODUCTION TO DESIGN.—Object drawing in pencil and charcoal. Elementary design in line, pattern, and color. I and II, (2).
 25b. FIGURE DRAWING AND MODELING.—Life drawing, clay modeling, and ornamental forms. I and II, (2).
 27-28. LIFE DRAWING.—Construction of the figure in charcoal and study of head from life, anatomy and figure sketch. S, I, and II, (5). *Prerequisite:* Art 26.
 27a-28a. LIFE DRAWING.—Primarily for students in industrial design curriculum, S, I, and II, (2). *Prerequisite:* Art 26.
 32a-32b. ELEMENTARY COMPOSITION.—Pictorial composition in line, pattern, and color. S, I, and II, (2). *Prerequisite:* Sophomore standing in art.
 41a-41b. STILL LIFE.—Painting from arranged groups. S, I, and II, (2). *Prerequisite:* Art 26.

50. SCULPTURE.—Anatomical and ornamental forms; plaster molds and models; wood and stone sculpture. Open to students in other colleges. S, I, and II, (2). *Prerequisite:* Consent of instructor.
- 51a-51b. SCULPTURE (CONTINUED).—S, I, and II, (2). *Prerequisite:* Art 26.
- 70a. CRAFT MATERIALS AND TECHNICS.—Introduction to the design and execution of craft projects in leather, wood, and metal. Primarily for students in occupational therapy curriculum and for recreation majors in physical education for men. S, I, and II, (2). *Prerequisite:* Sophomore standing, or consent of instructor.

Courses for Advanced Undergraduates

- 3a-3b. WATER COLOR.—I and II, (2). *Prerequisite:* Art 2b.
- 10a-10b. ART EDUCATION METHODS.—Public school art for the first eight grades and high school; organization, equipment, and administrative duties of the supervisor. S (10a only), and continuous through I and II, (2). *Prerequisite:* Art 32, or junior standing.
15. HISTORY OF ART AND CULTURE: ITALIAN RENAISSANCE.—Painting and sculpture considered against the cultural background; fourteenth through the eighteenth centuries. S and I, (2). *Prerequisite:* For art students, Art 14 or consent of instructor. For others, junior standing or consent of instructor.
- 19a-19b. HISTORY OF ART IN INDUSTRY.—Analysis of applied art in crafts and industrial procedure from early antiquity to the present. Inspection trip required. Continuous through I and II, (2). *Prerequisite:* Junior standing.
- 23a-23b. FREEHAND DRAWING (CONTINUED).—Arrangement of form and color; rhythm and sequence; harmony and contrast; charcoal, pen, pencil, and water color drawing from the cast and still life; outdoor sketching. Primarily for students in architecture. S, I, and II, (2). *Prerequisite:* Art 22b.
- 24a-24b. FREEHAND DRAWING (CONTINUED).—Figure drawing from the cast and from life. Primarily for students in architecture. I and II, (2). *Prerequisite:* Art 23b.
- 29-30. LIFE DRAWING AND PORTRAIT.—Study in charcoal from the figure; quick action poses and technic of sketch in various media; painting from head. S, I, and II, (5). *Prerequisite:* Art 28.
- 33a-33b. INTERMEDIATE COMPOSITION.—S, I, and II, (3). *Prerequisite:* Art 32b.
- 37a-37b. ILLUSTRATION.—Problems in the design and execution of book and periodical illustration. S, I, and II, (2). *Prerequisite:* Art 32b.
- 38a-38b. ADVANCED ILLUSTRATION.—S, I, and II, (2). *Prerequisite:* Art 37b.
- 47-48. LIFE PAINTING.—Painting full length from life. S, I, and II, (4). *Prerequisite:* Art 30.
- 52a-52b. ADVANCED SCULPTURE.—II, (2). *Prerequisite:* Art 51b.
61. PATTERNS AND LETTERING.—Application of design, lettering, and layout for industrial purposes. S, I, and II, (3). *Prerequisite:* Junior standing in art.
- 65-66. COMMERCIAL DESIGN.—Methods of drawing and painting for commercial purposes. S, I, and II, (3). *Prerequisite:* Art 28; Architecture 72.
- 67-68. ADVANCED COMMERCIAL DESIGN.—S, I, and II, (5). *Prerequisite:* Art 66.
- 70b. ADVANCED CRAFT MATERIALS AND TECHNICS.—Continuation of Art 70a. Principles of design and technical execution in the fields of metalry, book binding, pottery, and basic photography. S, I, and II, (4). *Prerequisite:* Art 70a.
- 71-72. MATERIALS AND TECHNICS.—Use and manipulation of basic materials in modern industry. S, I, and II, (2). *Prerequisite:* Junior standing in art.
- 77-78. ADVANCED INDUSTRIAL DESIGN.—S, I, and II, (5). *Prerequisite:* Art 76.

Courses for Advanced Undergraduates and Graduates

- 15b. NORTHERN RENAISSANCE ART.—Architecture, sculpture, painting, and the minor arts as related to the cultural backgrounds in France, Germany, Spain, and England, in the sixteenth, seventeenth, and eighteenth centuries. II, (3). *Prerequisite:* For art students, Art 12. For others, junior standing and consent of instructor. Given in alternate years.
16. HISTORY OF ART AND CULTURE: RENAISSANCE IN THE LOW COUNTRIES AND GERMANY.—Flemish, Dutch, and German painting and sculpture as related to the cultural backgrounds, fifteenth through eighteenth centuries. S and I, (2). *Prerequisite:* For art students, Art 15 or consent of instructor. For others, junior standing or consent of instructor.

17. HISTORY OF ART AND CULTURE: RENAISSANCE IN FRANCE, SPAIN, AND ENGLAND.—Fifteenth through eighteenth centuries. I, (2). *Prerequisite:* For art students, Art 16 or consent of instructor. For others, junior standing or consent of instructor.
- 18a. AMERICAN ART.—Architecture, sculpture, painting, and the minor arts as related to the cultural backgrounds of the Colonies and the United States. II, (3). *Prerequisite:* For art students, Art 12. For others, junior standing; consent of the instructor.
- 29a-30a. FIGURE DRAWING AND SKETCH.—Primarily for students in commercial design curriculum. S, I, and II, (3). *Prerequisite:* Art 28.
- 34a-34b. ADVANCED COMPOSITION.—S, I, and II, (4). *Prerequisite:* Art 33b.
62. PATTERNS AND LETTERING.—Application of design, lettering, and layout for industrial purposes. S, I, and II, (3). *Prerequisite:* Art 61.
- 75-76. INDUSTRIAL DESIGN.—Designing of objects for manufacture by the machine industries. S, I, and II, (3). *Prerequisite:* Architecture 72; Art 28.

Courses for Graduates

101. SEMINAR IN ART HISTORY.—Introduction to research. II, ($\frac{1}{2}$ to 1 unit).
102. SPECIAL PROBLEMS IN RESEARCH.—Individual direction in research and guidance in writing theses. II, ($\frac{1}{2}$ to 1 unit).

ASTRONOMY

Courses for Undergraduates

1. DESCRIPTIVE ASTRONOMY.—The solar system. I and II, (3). *Prerequisite:* Sophomore standing.
2. DESCRIPTIVE ASTRONOMY.—The stars. II, (3). *Prerequisite:* Sophomore standing.
5. NAVIGATION.—I, (3). *Prerequisite:* Mathematics 4.

Courses for Advanced Undergraduates and Graduates

7. CELESTIAL MECHANICS.—II, (3). *Prerequisite:* Mathematics 9.
- [SI4. OBSERVATIONAL ASTRONOMY.—S, (2). *Prerequisite:* Consent of instructor.]

Courses for Graduates

NOTE: The prerequisites for graduate study in astronomy are mathematics through the calculus, a year's course in descriptive astronomy, and a course in college physics.

101. SEMINAR.—I and II, (1 unit).

BACTERIOLOGY

Requirements for L.A.S. Students

- Major:* 20 hours chosen from courses offered by this department exclusive of Bacteriology 5a and 5b. Dairy Husbandry 10 (Advanced Dairy Bacteriology) may be counted in partial satisfaction of this requirement. At least five hours must be taken from the advanced group.
- Minors:* 20 hours chosen from one or two of the following subjects: agronomy, botany, chemistry, entomology, physiology, and zoology. At least eight hours must be taken in each subject, if two are chosen.

Courses for Undergraduates

3. BACTERIOLOGY FOR NURSES.—Fundamentals in general and medical bacteriology designed to give student nurses a foundation in bacteriology necessary for nursing practice. I and II, (5). *Prerequisite:* Enrollment in Burnham Hospital Nurses School.
- 5a. INTRODUCTORY BACTERIOLOGY.—Bacteria, yeasts, and molds; structure, morphology, and systematic relationships; general sanitation, communicable diseases, etc.

- Designed to accompany Bacteriology 5b, but may be elected without it. S, I, and II, (3). *Prerequisite:* Sophomore standing or consent of instructor.
- 5b. INTRODUCTORY BACTERIOLOGY LABORATORY.—Morphology and physiology of bacteria and related microorganisms, preparation of media and apparatus, staining, cultivation. Designed to accompany Bacteriology 5a. S, I, and II, (2). *Prerequisite:* Bacteriology 5a, or concurrent registration therein.
6. ADVANCED GENERAL BACTERIOLOGY.—General technic, special apparatus, and methods. II, (3). *Prerequisite:* Bacteriology 5a and 5b, or 20.

Courses for Advanced Undergraduates

- 7a-7b. RESEARCH AND SPECIAL PROBLEMS.—S, I, and II, (3 to 5). *Prerequisite:* Senior standing; twenty hours of bacteriology; consent of instructor.

Courses for Advanced Undergraduates and Graduates

8. FOOD AND APPLIED BACTERIOLOGY.—Microbiology of foods; preservation, technology, analysis; food poisoning and food-borne intoxications. Laboratory, lectures, discussions, readings, and reports. II, (5). *Prerequisite:* Junior standing; Bacteriology 5a and 5b; consent of instructor.
9. BACTERIAL NUTRITION AND VITAMIN ASSAYS.—S and I, (3). *Prerequisite:* Bacteriology 5a and 5b, or 20; organic chemistry.
10. EPIDEMIOLOGY.—Spread and control of communicable diseases. Lectures, readings, and problems. S and II, (2). *Prerequisite:* Junior standing; Bacteriology 5a or 20; consent of instructor.
20. GENERAL BACTERIOLOGY.—Laboratory, lectures, readings, and reports. S, I, and II, (5). *Prerequisite:* Two years of college chemistry; senior standing; consent of instructor. Students with credit in Bacteriology 5a and 5b will not be allowed credit for Bacteriology 20.
26. PATHOGENIC BACTERIOLOGY.—Pathogenic bacteria, diagnosis of communicable diseases, immunology and serology. Lectures, laboratory, and assigned readings. S and I, (5). *Prerequisite:* Bacteriology 5a and 5b, or 20; junior standing.
27. IMMUNOLOGY AND SEROLOGY.—II, (5). *Prerequisite:* Bacteriology 26; consent of instructor.

Courses for Graduates

NOTE: Students electing bacteriology as a major for an advanced degree must have had at least ten semester hours of bacteriology and fifteen semester hours of some other physical or biological science.

Bacteriology 8, 20, 26, 103, and 107, or their equivalents, are required for a master's degree. Each candidate is required to pass a general written examination toward the close of the second semester of residence.

Candidates for the Ph.D. degree in bacteriology are required to have a general knowledge of bacteriology as applied to plant pathology, dairy bacteriology, and soil biology; appropriate courses in these subjects will be counted toward the requirements for the degree. Those who select a first or second minor in bacteriology must offer at least three units for the first minor and two and one-half units for the second minor, exclusive of an introductory course (Bacteriology 20 or its equivalent), selected from the courses offered in this department or, for satisfactory reasons, from certain courses in the related subjects mentioned above, and must include Bacteriology 103 and one advanced laboratory course.

Attention is called to the following courses, some of which must be elected for advanced degrees in bacteriology: Agronomy 11, 30, 31; Botany 72, 79, 117, 171, 172; Chemistry 29b, 50, 86a; Dairy Husbandry 10, 106, 112, 113; Horticulture 51, 151, 152; Veterinary Pathology and Hygiene 3, 101, 102, 103; Zoology 18, 30, 31, 118, 131.

For a master's degree in the biological sciences, see page 297.

103. PHYSIOLOGY OF BACTERIA.—Fermentation, growth, and death. Lectures, readings, and reports. I, (1 unit).
107. RESEARCH.—S, I, and II, ($\frac{1}{2}$ to 4 units).
- 118a-118b. CURRENT LITERATURE.—Required of all graduate students whose major is bacteriology. Continuous through I and II, ($\frac{1}{4}$ unit). *Prerequisite:* Ten hours of bacteriology; consent of instructor.

BIOLOGICAL SCIENCES

Through the Division of the Biological Sciences (including bacteriology, botany, entomology, physiology, psychology, zoology) it is possible to arrange a program leading to the degree of Master of Science in the Biological Sciences, intended especially to serve the needs of high school teachers of biology. While the main emphasis is on botany and zoology, the candidate must have at least one unit in each of the following subjects: bacteriology, botany, entomology, physiology, and zoology. One unit in psychology (other than educational psychology) is strongly recommended. In planning his course of study the candidate should seek to attain the desired diversity by giving less emphasis to subjects in which he has already had considerable training, but at least one unit must be taken in courses of strictly graduate grade. No thesis is required, but at least one course should be included in which individual problems are assigned.

For the curriculum in the Teaching of the Biological Sciences and General Science, see page 242.

BOTANY

Requirements for L.A.S. Students

Major: 20 hours of botany, excluding Botany 1 and 5, and including Botany 3, 6, and 22, and at least five hours in courses listed for advanced undergraduates and graduates.

Minors: 20 hours in one or two departments chosen in consultation with the head of the department from the following list: agronomy, bacteriology, chemistry, entomology, geography, geology, horticulture, mathematics, physics, physiology, and zoology. At least eight hours must be taken in each department, if two are chosen.

Courses for Undergraduates

- 1a. **INTRODUCTORY BOTANY.**—Relation of the plant world to the physical and animal worlds; progressive development of the plant and its evolutionary significance; its part in the formation of soils, the production of food, and the maintenance of life. Lectures and demonstrational quiz. Designed to accompany Botany 1b, but may be elected without it. It is recommended that freshmen register in Botany 1a and 1b concurrently. S, I, and II, (3). Seniors receive only two hours credit.
- 1b. **INTRODUCTORY BOTANY (LABORATORY).**—Morphology, physiology, and ecology of representative groups of the plant world. One or two field trips. S, I, and II, (2). *Prerequisite:* Botany 1a, or concurrent registration therein.
3. **PLANT PHYSIOLOGY.**—Absorption of materials from the external world and their transformation within the organism; the production and use of food. S and I, (5). *Prerequisite:* Botany 1a-1b, or 5.
5. **BOTANY FOR STUDENTS IN AGRICULTURE.**—Lectures, discussions, and laboratory. S, I, and II, (3). Seniors receive only two hours credit.
6. **INTRODUCTORY SYSTEMATIC BOTANY (PLANT TAXONOMY).**—Classification and identification of flowering plants, with special reference to the local flora, and the needs of high school teachers. Occasional field trips required. II, (3). *Prerequisite:* Botany 1a-1b, 5, 15, or Division of General Studies 3.
15. **BOTANY-ZOOLOGY.**—A one-year sequence in the fundamental principles of the structure, physiology, reproduction, ecology, and evolution of plants and animals, with emphasis on their relations to human life. This course meets the general education requirement in the College of Liberal Arts and Sciences. I and II, (4).
16. **ECONOMIC BOTANY.**—Uses of plants and plant products by man; origin of cultivated plants and their relation to human history. II, (3). *Prerequisite:* Botany 1a-1b, 5, 15, or Division of General Studies 3.

Courses for Advanced Undergraduates

7. **PLANT PATHOLOGY.**—I, (3). *Prerequisite:* Junior standing; one year of plant science, including Botany 1a-1b or 5.
- [8. **FOREST ECOLOGY.**—American trees and their requirements; forest types, regions, and sites. II, (3). *Prerequisite:* One year of botany; junior standing, or registration in pre-forestry curriculum.]
- 90a-90b. **THESIS COURSE.**—I and II, (2). *Prerequisite:* Fifteen hours of botany; senior standing.

Courses for Advanced Undergraduates and Graduates

20. CYTOLOGY.—Structure and life history of plant cell. II, (3 or 5). *Prerequisite:* One year of botany, including Botany 45; junior standing.
22. GENERAL PLANT MORPHOLOGY.—Typical life histories of plants—algae to seed plants. I, (3). *Prerequisite:* Botany 1a-1b, 5, or Division of General Studies 3; senior standing, or consent of instructor.
33. PLANT PHYSIOLOGY.—I, (3 or 5). *Prerequisite:* Botany 3; junior standing. Given in alternate years.
- [35. PHYSIOLOGY: METABOLIC TRANSFORMATIONS.—II, (3 or 5). *Prerequisite:* One year of botany, including Botany 3; one year of chemistry; junior standing.]
36. BIOLOGY FOR TEACHERS.—Same as Zoology 36. Principles and methods of teaching general biology in high school or normal school. II, (3). *Prerequisite:* One course in zoology and one in botany; junior standing.
40. HISTOLOGICAL TECHNIC.—Survey of technics used in preparation of plant tissues for microscopical examination. II, (3). *Prerequisite:* One year of botany or ten hours of zoology; junior standing.
- [41. BRYOPHYTES.—II, (3 to 5). *Prerequisite:* Botany 1a-1b; junior standing.]
- [43. PTERIDOPHYTES.—II, (3 to 5). *Prerequisite:* One year of botany, including Botany 22; senior standing.]
45. PLANT ANATOMY.—Study of the internal structure of vascular plants with special emphasis on function and evolutionary history. I, (3). *Prerequisite:* One year of botany; junior standing.
46. HEREDITY AND EVOLUTION.—II, (3 or 5). *Prerequisite:* One year of botany; junior standing.
- [51. FRUIT DISEASES.—Same as Horticulture 51. I, (3). *Prerequisite:* Botany 7 or 72.]
52. VEGETABLE DISEASES.—Same as Horticulture 52. I, (3). *Prerequisite:* Botany 7 or 72.
56. PLANT GEOGRAPHY.—I, (3 to 5). *Prerequisite:* One year of botany; junior standing.
60. ADVANCED SYSTEMATIC BOTANY.—Phylogenetic study of flowering plants; relationship of the principal orders and families; problems of nomenclature; identification of species. S, (3 to 5). *Prerequisite:* Botany 6; junior standing.
72. GENERAL MYCOLOGY.—II, (4). *Prerequisite:* One year of botany, bacteriology, entomology, or zoology; junior standing.
77. DISEASES OF FIELD CROPS.—II, (3). *Prerequisite:* Botany 7; junior standing.
- [81. PLANT ECOLOGY.—I, (3). *Prerequisite:* One year of botany; junior standing.]

Courses for Graduates

NOTE: Candidates for advanced degrees in botany must have had at least twenty hours of undergraduate work in botany, including courses 3, 6, and 22, or fifteen hours in botany and five hours in a related subject acceptable to the department. Graduate students who elect botany for minor credit must have had fifteen hours in botany, or ten hours in botany and five hours in a related subject acceptable to the department.

Special programs leading to the degrees of M.S. and Ph.D. in plant pathology may be arranged for individual students, under the guidance of the interdepartmental committee.

For a master's degree in the biological sciences, see page 297.

100. RESEARCH.—Work may be taken in the following fields, subject to approval of one of the staff: (a) plant morphology, (b) plant physiology, (c) systematic botany of vascular plants and bryophytes, (d) mycology, (e) plant pathology, (f) plant ecology or geography, (g) plant anatomy. S, I, and II, ($\frac{1}{2}$ to 4 units).
110. BOTANICAL DISCUSSIONS.—Required of all graduate students in botany. S, I, and II, ($\frac{1}{4}$ unit, or no credit).
112. DISCUSSIONS IN PLANT MORPHOLOGY.—II, ($\frac{1}{4}$ unit).
113. SEMINAR IN ADVANCED PLANT PHYSIOLOGY.—Discussions of physicochemical aspects of photosynthesis. I and II, ($\frac{1}{4}$ unit). *Prerequisite:* Qualification for graduate study in plant sciences, physics, physical chemistry, or biochemistry.
117. DISCUSSIONS IN PLANT PATHOLOGY AND MYCOLOGY.—I and II, ($\frac{1}{4}$ unit).
- [133. ADVANCED PHYSIOLOGY OF GROWTH, RESPONSE, AND REPRODUCTION.—II, ($\frac{1}{2}$ unit).]
171. MYCOLOGY OF SPECIAL GROUPS.—II, ($\frac{1}{2}$ unit). *Prerequisite:* Consent of instructor.
172. EPIDEMIOLOGY OF PLANT DISEASES.—I, ($\frac{1}{2}$ unit). *Prerequisite:* Graduate standing with a major in botany, entomology, or bacteriology.
- [177. VIRUS DISEASES OF PLANTS.—Same as Horticulture 177. II, (1 unit). Given in alternate years.]

BUSINESS ORGANIZATION AND OPERATION

(Including Accountancy and Business Law)

ACCOUNTANCY

Courses for Undergraduates

- 1a. PRINCIPLES OF ACCOUNTING.—Simple transactions, accounts, books, statements; trial balances, adjustments; partnerships. Students who present one unit of book-keeping for entrance will not be allowed credit for Accountancy 1a and should register in Accountancy 1e. S, I, and II, (3). Seniors receive only two hours credit.
- 1b. ACCOUNTING PROCEDURE.—Relation of business documents to accounts; balance sheet and income statement. S, I, and II, (3). Seniors receive only two hours credit. *Prerequisite:* Accountancy 1a or 1e.
- 1e. PRINCIPLES OF ACCOUNTING.—Similar to Accountancy 1a, for those who present one unit of entrance credit in bookkeeping. Students who have failed in Accountancy 1a are permitted to register in Accountancy 1e and receive credit as in Accountancy 1a if their final grade is "C" or above. S, I, and II, (2). Seniors receive only one hour credit. *Prerequisite:* One unit of entrance credit in book-keeping.
- 2a. ELEMENTARY COST ACCOUNTING.—Departmental, process, sequential, and job lot cost; cost records and procedures; disposition of burden. S, I, and II, (3). *Prerequisite:* Accountancy 1b; registration or credit in Economics I or 2.
- 2b. INTERMEDIATE ACCOUNTING.—Depreciation; corporation accounts; interpretation of balance sheet and income statements. S, I, and II, (3). *Prerequisite:* Accountancy 2a.
- 2b-3a. INTERMEDIATE AND ADVANCED ACCOUNTING.—This consists of the regular course in Accountancy 2b offered the first half of the semester, followed by the regular course in Accountancy 3a the second half. It is offered for those students who wish to accelerate in the field of accountancy. II, (6). *Prerequisite:* Accountancy 2a; junior standing.

Courses for Advanced Undergraduates

12. FUNDAMENTALS OF ACCOUNTING.—Survey course for non-commerce students only. I and II, (3). *Prerequisite:* Junior standing.
[S15. TEACHING METHODS.—S, (2).]
- 90a-90b. HONORS COURSE.—Senior candidates for graduation with honors or high honors should elect one or the other of the following options: Option A—an acceptable thesis in accountancy. Option B—a comprehensive examination, six hours in length, covering a review of various aspects of accountancy. S, I, and II, (2 to 4).
- 91a-91b. INDEPENDENT STUDY.—Seniors registered in the College of Commerce and Business Administration who were awarded class or college honors in their junior year may do independent study for a total of not more than ten semester hours in this department or sixteen semester hours if divided between this department and any other department. S, and continuous through I and II, (3 to 5).

Courses for Advanced Undergraduates and Graduates

- 3a. ADVANCED ACCOUNTING.—Reserves, sinking funds, actuarial methods, investments, consolidated statements, foreign exchange, liquidation, estates. S, I, and II, (3). *Prerequisite:* Accountancy 2a-2b; junior standing; an average of "C" or better in Accountancy I and 2.
- 3b. AUDITING.—S, I, and II, (3). *Prerequisite:* Accountancy 3a; junior standing.
- 4a. COST ACCOUNTING.—Factory procedure, departmental burden, standard costs, cost control, cost reports, installation of cost systems. S, I, and II, (2). *Prerequisite:* Accountancy 2a; junior standing.
- 4b. ACCOUNTING SYSTEMS.—Systems used by banks, building and loan associations, insurance companies, brokers, department stores. S, I, and II, (2). *Prerequisite:* Accountancy 2a-2b; junior standing. Credit is given for either Accountancy 4a or 4b separately.
- 5a-5b. C.P.A. PROBLEMS.—Type problems and questions, including theory and auditing; consolidated statements; foreign exchange. S (5a only), and continuous through

- I and II, (3). *Prerequisite:* Credit or registration in Accountancy 3b; senior standing.
13. GOVERNMENTAL ACCOUNTING.—Accounts of institutions, municipalities, and of state and federal governments; organization; procedure, budget, accounts and records, reports, audits; purchasing and storekeeping. S, I, and II, (2). *Prerequisite:* Accountancy 2b; junior standing.
20. INCOME TAX PROCEDURE.—S, I, and II, (2). *Prerequisite:* Registration or credit in Accountancy 3b; senior standing.
30. BUDGETS AND ACCOUNTING CONTROL.—I and II, (3). *Prerequisite:* Accountancy 2b; junior standing.

Courses for Graduates

NOTE: Candidates for the M.S. or Ph.D. degree in accountancy must have had the equivalent of twenty hours of undergraduate work in accountancy and at least one course each in principles of economics and finance. Graduate students in other departments who choose accountancy as a minor must present similar courses, with fifteen instead of twenty hours in accountancy as a minimum.

101. CONCEPTS AND PRINCIPLES.—I, (1 unit).
103. INCOME DETERMINATION.—II, (1 unit).
- 104a-104b. ACCOUNTING SYSTEMS.—I and II, (1 unit).
106. COST ACCOUNTING.—II, (1 unit). *Prerequisite:* Accountancy 4a.
107. SURPLUS AND DIVIDENDS.—II, (1 unit).
109. ACCOUNTING HISTORY.—S and I, (1 unit).
- [110. ACCOUNTING REPORTS.—S and II, (1 unit). *Prerequisite:* Accountancy 3b.]
113. GOVERNMENTAL ACCOUNTING.—I, (1 unit).
- [S117. ACCOUNTING TECHNIQS.—S, (1 unit). Credit not allowed for this course in addition to credit for Accountancy 4a-4b and 13.]
120. INCOME TAX DEVELOPMENT.—I, (1 unit). *Prerequisite:* Accountancy 20.
129. THESIS.—S, I, and II, (1 unit). Credit not allowed for either semester separately.

BUSINESS ORGANIZATION AND OPERATION

Courses for Undergraduates

5. BUSINESS COMPUTATIONS.—Fundamental processes, annuities, bond valuations, installment sales, mark-ups and mark-downs, application of logarithms, metric system, simple algebraic and trigonometric computations. Primarily for students registered in the commercial teaching curriculum. I and II, (3).
- 12a, 12b, 12c. TYPEWRITING.—Beginning, intermediate, and advanced courses respectively for those who intend to apply their knowledge later in teaching the subject. Primarily for students in the commercial teaching field of concentration. To be taken concurrently with course 13a, 13b, 13c. Credit toward graduation is granted only to those registered in the curriculum in commercial teaching. I and II, (2).
- 13a, 13b, 13c. SHORTHAND.—Beginning, intermediate, and advanced courses respectively for those who intend to apply their knowledge later in teaching the subject. Primarily for students in the commercial teaching field of concentration. To be taken concurrently with course 12a, 12b, 12c. Credit toward graduation is granted only to those registered in the curriculum in commercial teaching. I and II, (2).

Courses for Advanced Undergraduates

1. INDUSTRIAL ORGANIZATION AND MANAGEMENT.—Organization and administrative policy; supervision and management of industrial units. S, I, and II, (3). *Prerequisite:* Economics I or 2; junior standing. Junior and senior engineering students admitted with consent of instructor.
2. MARKETING ORGANIZATION AND OPERATION.—Methods and problems in marketing raw materials and manufactured products. S, I, and II, (3). *Prerequisite:* Economics I or 2; junior standing.
3. RETAIL AND CHAIN STORE ORGANIZATION AND OPERATION.—I and II, (3). *Prerequisite:* Business Organization and Operation 2.
7. SALESMANSHIP.—Brief historical review of selling; fundamentals and technic of salesmanship today. S, I, and II, (2). *Prerequisite:* Business Organization and Operation 2.
- [15. PROBLEMS OF MANAGEMENT.—II, (3). *Prerequisite:* Business Organization and Operation 14.]

23. **MARKETING AND RETAILING.**—Phases of marketing and retailing of interest to students in journalism and home economics. This course may be used instead of Business Organization and Operation 2 as a prerequisite for other courses in marketing. II, (3). *Prerequisite:* Junior standing.
24. **PURCHASING.**—Organization and operation of the purchasing department, basic materials, substitutes, imitations, sources of supply, catalogs, terms, discounts, relation to salesmen. II, (2). *Prerequisite:* Business Organization and Operation 1 and 2; senior standing.
26. **ADVERTISING COPY AND LAYOUT I.**—Same as Journalism 26. Theory and practice in writing advertising copy for newspapers and magazines. S and II, (4). *Prerequisite:* Business Organization and Operation 10, or consent of instructor.
- [28. **LETTERING AND LAYOUT IN ADVERTISING.**—Same as Art 60. I, (2). *Prerequisite:* Business Organization and Operation 8 or 10.]
33. **ADVERTISING COPY AND LAYOUT II.**—Same as Journalism 33. Preparation of layout for newspaper advertising units; sales problems, advertising promotion, advertising research, marketing research, etc. S and I, (3). *Prerequisite:* Business Organization and Operation 26.
34. **ADVERTISING PROMOTION AND SALES.**—Same as Journalism 34. Preparation of layout for newspaper advertising units; sales problems, advertising promotion, advertising research, marketing research, etc. I and II, (3). *Prerequisite:* Business Organization and Operation 33.
44. **TYPOGRAPHY.**—Same as Journalism 4. Type faces, publishing, engraving, offset, etc. S, I, and II, (2). *Prerequisite:* Junior standing.
45. **OFFICE ORGANIZATION AND MANAGEMENT.**—Function of the office in the business organization; duties of office manager; systems and routines; form and form design; control of equipment, appliances, and supplies; office layout and working conditions; selection, training, and compensation of office personnel; filing; flow of work; office communications; mailing; office manuals; measurement and control of office work. II, (3). *Prerequisite:* Sophomore standing; registration in Commercial Teaching curriculum.
46. **OFFICE APPLIANCES.**—The functions, application, and limitations of various fundamental types of office equipment as related to modern business management. I, (2). *Prerequisite:* Senior standing, including nine hours in accountancy.
50. **AIRPORT MANAGEMENT.**—Organization of staff; problems of management, including personnel, insurance, budgets, ethics, business promotion, accounting control, and communications. I, (3). *Prerequisite:* Economics 1 or 2; junior standing.
52. **AIRLINE MANAGEMENT.**—General problems arising in the management of airlines, station organization, scheduling, personnel, purchasing, air express, air mail, advertising, interline traffic. II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
- 90a-90b. **HONORS COURSE.**—Senior candidates for graduation with honors or high honors should elect one or the other of the following options: Option A—an acceptable thesis in business organization and operation. Option B—a comprehensive examination, six hours in length, covering a review of various aspects of business organization and operation. S, I, and II, (2 to 4).
- 91a-91b. **INDEPENDENT STUDY.**—Seniors registered in the College of Commerce and Business Administration who were awarded class or college honors in their junior year may do independent study for a total of not more than ten semester hours in this department or sixteen semester hours if divided between this department and any other department. S, and continuous through I and II, (3 to 5).

Courses for Advanced Undergraduates and Graduates

4. **MANAGEMENT IN MANUFACTURING.**—Internal problems of production and efficient control in factories. I and II, (3). *Prerequisite:* Business Organization and Operation 1.
8. **INTRODUCTION TO ADVERTISING.**—S, I, and II, (3). *Prerequisite:* Business Organization and Operation 2, or (for non-commerce students) concurrent registration therein.
9. **TRADE ASSOCIATIONS AND COMMERCIAL ORGANIZATIONS.**—II, (2). *Prerequisite:* Business Organization and Operation 2; Business Law 1a; senior standing.

10. PRINCIPLES OF ADVERTISING.—Same as Journalism 10. For non-commerce students only. S, (3). *Prerequisite:* Junior standing; credit or registration in Business Organization and Operation 44.
14. TECHNIC OF EXECUTIVE CONTROL.—S and II, (3). *Prerequisite:* Credit or registration in Business Organization and Operation 4.
17. PROBLEMS IN SALES ADMINISTRATION.—Modern sales organization; selling problems of manufacturers, wholesalers, and retailers; management of salesmen. I and II, (2). *Prerequisite:* Credit or concurrent registration in Business Organization and Operation 7.
18. ADVERTISING CAMPAIGNS.—Same as Journalism 38. Planning of campaigns; choice of appeals; selection and use of media; sales promotion. I and II, (3). *Prerequisite:* Business Organization and Operation 8 or 10.
20. CREDITS AND COLLECTIONS.—I and II, (3). *Prerequisite:* Business Organization and Operation 2; junior standing.
22. MARKET RESEARCH AND POLICIES.—I, (3). *Prerequisite:* Business Organization and Operation 2.
27. ADVANCED SALESMANSHIP.—Intensive study of methods used to market selected products, such as automobiles, refrigerators, insurance. S and II, (2). *Prerequisite:* Business Organization and Operation 7.
29. PROBLEMS IN MARKETING RESEARCH.—Selected problems in the field of commercial research. II, (3). *Prerequisite:* Business Organization and Operation 22, or senior standing and permission of instructor.
30. ADVANCED PROBLEMS IN RETAIL STORE MANAGEMENT.—II, (2). *Prerequisite:* Business Organization and Operation 3.
32. CONTEMPORARY PROBLEMS IN MARKETING MANAGEMENT.—II, (3). *Prerequisite:* Business Organization and Operation 2; senior standing.

Courses for Graduates

NOTE: Work may be done in the field of business organization and operation for a major or a minor for the M.S. degree, and for a minor for the Ph.D. degree. To do major work in this field, a student must have completed at least twenty hours of undergraduate work in marketing, management, business administration, economics, business law, or accountancy. To do minor work in this field, a student must have had at least twelve hours of work in the subjects named above. To do work either in marketing or management, the student must have completed a course in the fundamentals of the subject.

- 102a-102b. MARKETING PRINCIPLES AND PROBLEMS.—Continuous through I and II, (1 unit).
- 104a-104b. SCIENTIFIC MANAGEMENT.—S, and continuous through I and II, (1 unit).
- 107a-107b. SALES CAMPAIGNS.—S (107a only), and continuous through I and II, (1 unit).
- [126. ANALYSIS OF CONSUMER MARKETS.—I, (1 unit).]
127. PRICES AND PRICE POLICIES.—S and II, (1 unit).
129. SEMINAR.—S, I, and II, (1 unit).

BUSINESS LAW

Courses for Undergraduates

- 1a-1b. GENERAL PRINCIPLES OF BUSINESS LAW.—Contracts, agency, sales of personal property, negotiable instruments, partnerships, and business corporations. S, and continuous through I and II, (3). *Prerequisite:* Economics 1; Accountancy 1b; junior standing.
2. ELEMENTARY LAW OF BUSINESS.—Contracts, leases, and property. For non-commerce students. I and II, (3). *Prerequisite:* Junior standing.

Courses for Advanced Undergraduates and Graduates

10. LAW OF SECURITY RELATIONS AND BANKING.—Suretyship, mortgages, pledges, personal property, real property, insurance, bankruptcy, banking, Federal Reserve Board. I and II, (3). *Prerequisite:* Senior standing; registration or credit in Business Law 1b.

CERAMIC ENGINEERING

Courses for Undergraduates

28. PYROCHEMICAL PROBLEMS.—The Phase Rule; graphic representation and interpretation of equilibria in ceramics. Lectures. II, (2). *Prerequisite:* Ceramic Engineering 14; Chemistry 40.
31. INTRODUCTION TO CERAMIC ENGINEERING.—Raw materials; classification and characteristics of ceramic products; methods of manufacture. Recitations and laboratory. S and I, (3). *Prerequisite:* Sophomore standing.
32. CERAMIC PROCESSES AND EQUIPMENT.—Sources, preparation of materials, and manufacturing processes and control. Recitations and field trip. S and II, (3).

Courses for Advanced Undergraduates

96. RESEARCH METHODS.—Procedures and planning of investigations in ceramic research. I, (1 to 3). *Prerequisite:* Senior standing in ceramic engineering.
- 97-98. THESIS.—Research on a selected subject. I, (1 to 3). *Prerequisite:* Ceramic Engineering 34 and 96; consent of head of department.
- [99. INSPECTION TRIP.—Visits to industrial plants. I, (no credit). *Prerequisite:* Senior standing.]

Courses for Advanced Undergraduates and Graduates

33. CERAMIC TECHNOLOGY.—Physical and chemical properties and reactions of ceramic materials and mixtures. Recitations and laboratory. I, (5). *Prerequisite:* Junior standing.
34. CERAMIC TECHNOLOGY.—Continuation of Ceramic Engineering 33. Recitations and laboratory. II, (5). *Prerequisite:* Ceramic Engineering 33.
35. PRINCIPLES OF DRYING.—Drying, drying equipment, construction and regulation of dryers. Recitations. I, (3). *Prerequisite:* Credit or registration in Ceramic Engineering 33.
36. KILNS, FURNACES, AND FIRING OPERATIONS.—The firing process, utilization of fuels, types of kilns and furnaces and their operation. Recitations. II, (3). *Prerequisite:* Credit or registration in Ceramic Engineering 34.
37. PYROMETRY.—Principles and methods used in high temperature measurement. Recitations and laboratory. S, I, and II, (2). *Prerequisite:* Junior standing.
38. DRYER AND FURNACE DESIGN.—Design of ceramic dryers, kilns, and furnaces. Laboratory. I, (2). *Prerequisite:* Theoretical and Applied Mechanics 3; Ceramic Engineering 35 and 36.
39. CERAMIC DESIGN.—Design of special ceramic equipment, factory planning and layout. Laboratory. II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3; Ceramic Engineering 35, 36, and 38.
40. CERAMIC BODIES AND GLAZES.—Materials, compositions, processing, properties, and tests. Recitations and laboratory. I, (5). *Prerequisite:* Ceramic Engineering 34.
41. REFRACTORIES.—Composition and properties of refractory materials and products, their manufacture and use. Recitations. II, (2). *Prerequisite:* Ceramic Engineering 34 and 36.
42. CERAMIC MICROSCOPY.—The application of microscopic methods for the study of ceramic materials, reactions, and products. Recitations and laboratory. S and II, (3). *Prerequisite:* Geology 6.
43. CEMENTS, LIMES, AND PLASTERS.—Composition, reactions, method of manufacture, and testing. Recitations. I, (2). *Prerequisite:* Ceramic Engineering 33 and 34.
44. ELEMENTARY GLASS TECHNOLOGY.—Preparation of glasses of various compositions, measurement of properties; methods of melting and forming used in industry. Recitations and laboratory. II, (3). *Prerequisite:* Junior standing.
45. ADVANCED GLASS TECHNOLOGY.—Constitution and physical and chemical properties of glasses. Recitations. I, (2). *Prerequisite:* Senior standing.
46. PORCELAIN ENAMELS.—Compositions, preparation, application, properties, and tests. Recitations and laboratory. II, (4). *Prerequisite:* Registration in Ceramic Engineering 34.

Courses for Graduates

NOTE: This department offers graduate work leading to the degrees of Master of Science in Ceramics, Master of Science in Ceramic Engineering, Doctor of Philosophy in Ceramics, and Doctor of Philosophy in Engineering.

Candidates for the degree of Doctor of Philosophy in Ceramics must have had the equivalent of at least twenty-five semester hours of satisfactory courses in general, analytical, physical, and organic chemistry; also calculus, one year of college physics, one semester of optical mineralogy, and at least eighteen semester hours or their equivalent in acceptable ceramic courses.

110. CERAMIC CHEMISTRY.—I, (1 unit). *Prerequisite*: Courses in chemistry and physics.
111. CERAMIC CHEMISTRY.—II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Courses in chemistry and physics.
112. DRYING.—II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 35, or equivalent.
- [113. PORCELAIN ENAMELS.—I and II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 46, or equivalent.]
- [114. FIRING.—I and II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 36, or equivalent.]
115. GLASS.—II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 44, or equivalent.
116. REFRACTORIES.—I and II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 41, or equivalent.
- [117. SPECIAL CERAMIC BODIES OR GLAZES.—I and II, (1 to 2 units). Include laboratory if taken for two units. *Prerequisite*: Ceramic Engineering 40, or equivalent.]
118. MATERIALS AND SPECIAL PROBLEMS.—Conference and laboratory. S, (1 to 2 units).
190. RESEARCH.—Candidates for the Master of Science or Doctor of Philosophy degree may elect research in any of the branches of Ceramics. S, I, and II, (1 to 2 units).

CHEMISTRY

(Including Chemical Engineering)

Requirements for L.A.S. Students

For the curricula in chemistry and chemical engineering, see page 236.

For special requirements for admission to graduate work, see pages 308 and 311.

Major: 20 hours in chemistry, excluding Chemistry 1, 2, 3, 4, 5, 6, 7a, 8a, 8b, and including courses in qualitative, quantitative, and organic chemistry. At least five hours must be taken from the advanced group.

Minors: 20 hours chosen from not more than two of the following: bacteriology, botany, ceramic engineering, entomology, geology, mathematics, philosophy, physics, physiology, psychology, and zoology. At least eight hours must be taken in each subject if two are chosen.

Honors: Students registered in Chemistry 90a or 90b or Chemical Engineering 90a or 90b are eligible for honors without examination. All other students in the chemistry or chemical engineering curriculum or majors in chemistry who have a 4.0 average or better are eligible to become candidates for honors, provided they signify their intentions in writing to the Head of the Chemistry Department during the senior year and not later than at the beginning of the second semester. Such students must pass a comprehensive examination to be given about May 1. Chemical engineers may offer, in place of this examination, the solution of an assigned problem in plant design.

Sequence of Courses

Students in the curriculum of chemistry, majors in chemistry, and all others who desire a thorough training in the fundamentals of chemistry and their applications to modern life, should select courses from the following, and usually in the sequence given: Chemistry 1 or 2, 6, 10, 24, 34, 36, 37, 40, 41, 42, 43, 50, and courses in the chemical engineering and miscellaneous groups. Students in the curriculum of chemical engineering who have had a thorough training in preparatory chemistry may be able to shorten the time spent in the foundational courses by taking the sequence Chemistry 8a, 8b, 24, 34, 36, 37, 40, 41, 42, and other advanced courses. Students in the College of Engineering (except ceramists, ceramic engineers, and those who desire to take Chemistry 40) should register in Chemistry 3 or 2, 4, 22.

Students who are compelled to meet chemical requirements briefly may register for the following sequence: Chemistry 1 or 2, 5, 22, 32 or 33. Students who find it

impossible to take more than one semester's work are requested to register in Chemistry 1 or 2 in the second semester rather than in the first.

Restrictions

With the exception of students in the College of Engineering and the College of Agriculture, registration of students in chemistry courses (other than Chemistry 1, 2, 3, 4, 5, 6, 8a, 8b, 10, 22, 23b, 24, 32, 33, 34) is restricted to those having a grade-point average of at least 3.5 in all subjects, exclusive of the basic courses in military training and the required work in physical education and hygiene, or an average of at least 3.5 in chemistry courses. Transfer students to be admitted must have a corresponding record in the institution from which they transfer and must maintain a similar average at the University of Illinois. A student in the College of Liberal Arts and Sciences who desires to minor in chemistry must maintain a 3.5 average in all chemistry courses. Should he fall below that average and his adviser deem certain chemistry courses essential to him, the head of his department may request in writing and secure his admittance, provided space is available.

Courses for Undergraduates

Inorganic Chemistry and Qualitative Analysis

1. INORGANIC CHEMISTRY.—For students who have no entrance credit for high school chemistry. S, I, and II, (5). Seniors receive only three hours credit. Students who have received entrance credit for high school chemistry are given only three hours credit for Chemistry 1. *Prerequisite*: One unit of entrance credit in physics, or $2\frac{1}{2}$ units of entrance credit in mathematics, or credit in Mathematics 2 or 3.
2. INORGANIC CHEMISTRY.—Lectures, recitations, and laboratory. For all students who have had one year of high school chemistry. S, I, and II, (3). Seniors receive only two hours credit. Students who have not used their high school chemistry for entrance may receive five hours credit for Chemistry 2 if they complete the course with a grade of "C" or higher. Students who have failed in Chemistry 1 are permitted to register for Chemistry 2 and will receive five hours credit if their final grade is "C" or higher. *Prerequisite*: One unit of entrance credit in chemistry. Students whose preparation proves to be inadequate for continuing this course will be required to change their registration to Chemistry 1 or 3.
3. INORGANIC CHEMISTRY.—Lectures, recitations, and laboratory. For engineering students who have had no chemistry. S, I, and II, (4). Seniors receive only three hours credit. Students who have received entrance credit for high school chemistry are given only three hours credit for Chemistry 3.
4. CHEMISTRY OF THE METALLIC ELEMENTS.—Lectures, recitations, and laboratory. Limited to students in the engineering curricula. S, I, and II, (4). Credit in Chemistry 4 will not be granted to students who have received credit in Chemistry 5 or Chemistry 6. Seniors receive only three hours credit. *Prerequisite*: Chemistry 1, 2, or 3.
5. INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS.—Lectures, recitations, and laboratory. For students who are not eligible for Chemistry 4 or 6. S, I, and II, (5). Credit in Chemistry 5 will not be granted to students who have received credit in Chemistry 4 or Chemistry 6. Seniors receive only three hours credit. *Prerequisite*: Chemistry 1, 2, or 3.
6. INORGANIC CHEMISTRY.—Metallic elements. For students in the curricula of chemistry, ceramics, and ceramic engineering, and chemistry majors who are not pre-medics. S, I, and II, (5). Credit in Chemistry 6 will not be granted to students who have received credit in Chemistry 4 or Chemistry 5. Seniors receive only three hours credit. *Prerequisite*: Chemistry 1, 2, or 3.
- 8a-8b. INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS.—For students in the curriculum of chemistry or chemical engineering. Lectures, recitations, and laboratory. I and II, (5). Seniors receive only three hours credit. *Prerequisite*: One unit of entrance credit in chemistry and a qualifying examination.
10. QUALITATIVE ANALYSIS.—Qualitative analysis of metals and inorganic compounds. Required of students whose major is chemistry and those registered in the curriculum of chemistry or chemical engineering except those who qualify for Chemistry 8a-8b. Lectures, recitations, and laboratory. S, I, and II, (5). *Prerequisite*: Chemistry 6.

Analytical Chemistry

22. ELEMENTARY QUANTITATIVE ANALYSIS.—Gravimetric and volumetric analysis, stoichiometrical relations, practical applications. Lectures, recitations, and laboratory. S, I, and II, (5). *Prerequisite:* Chemistry 4 or 5. For students in home economics and pre-medical courses and all others who have not followed the sequence Chemistry 1, 2 or 3, 6 and 10.
- 23a. QUANTITATIVE ANALYSIS FOR ENGINEERS.—Especially for metallurgical and ceramic engineers. Lectures and laboratory. I, (5). *Prerequisite:* Chemistry 5.
24. QUANTITATIVE ANALYSIS.—Gravimetric and volumetric analysis, modern advanced theory and practice. Lectures, recitations, and laboratory. S, I, and II, (5). *Prerequisite:* Chemistry 10 or satisfactory record in Chemistry 8a-8b.

Organic Chemistry

32. ELEMENTARY ORGANIC CHEMISTRY.—Especially for students in agriculture. Important compounds of carbon. Lectures, recitations, and laboratory. I and II, (3). *Prerequisite:* Chemistry 5 or 10.
33. ELEMENTARY ORGANIC CHEMISTRY.—For students in home economics and pre-medical courses. Lectures, recitations, and laboratory. S, I, and II, (5). *Prerequisite:* Chemistry 5 or 10.

Courses for Advanced Undergraduates*Organic Chemistry*

34. ORGANIC CHEMISTRY.—For students whose major is chemistry or for those registered in the curriculum of chemistry or chemical engineering. Lectures, recitations, and laboratory. S, I, and II, (5). *Prerequisite:* Chemistry 6, 10, and 24.

Physical Chemistry

47. ELEMENTARY PHYSICAL CHEMISTRY.—For pre-medical students only. Lectures and laboratory. S and II, (4). *Prerequisite:* Chemistry 22, 33; Physics 7b, 8b, or equivalent; junior standing.
- 48a-48b. ELEMENTARY PHYSICAL CHEMISTRY.—For engineers. Not open to chemistry majors. S, I, and II, (3). *Prerequisite:* Chemistry 22; Physics 1a-1b or 7a-7b; Mathematics 7 or 8a-8b.

Miscellaneous

- 90a-90b. THESIS.—Limited in general to seniors in the curriculum of chemistry or chemical engineering. Majors in chemistry in the general curriculum may register if they have completed a minimum of twenty-three hours of chemistry, which must include at least five hours from courses for advanced undergraduates. Any others must have the consent of the Head of the Department. Each student who desires research must obtain, before the time of registration, special written permission from the instructor under whom he is to work. Except under unusual circumstances, only those students registered in Chemistry 90a or 90b will be recommended for honors. All students taking this course must present a thesis in order to receive credit. S, I, and II, (2 to 6).
- 91b. ELEMENTS OF GLASS BLOWING.—Laboratory. Construction and repair of glass apparatus. II, (1). *Prerequisite:* Two years of work in chemistry.
92. CHEMICAL LITERATURE AND REFERENCE WORK.—Required of juniors in the chemistry curriculum; advised for juniors whose major is chemistry and for students in the curriculum of chemical engineering. I and II, (1). *Prerequisite:* Eighteen hours of chemistry; one year of French or German; junior standing.
- 93b. CHEMICAL LITERATURE AND REFERENCE WORK.—For those who have had one semester of Chemistry 92. Required of juniors in chemistry; advised for juniors whose major is chemistry and for students in the curriculum of chemical engineering. II, (1). *Prerequisite:* Chemistry 92.

Courses for Advanced Undergraduates and Graduates*Inorganic Chemistry*

15. INORGANIC CHEMISTRY.—Periodic relationship, preparation, and application of the common elements and compounds. Lectures and recitations. S, I, and II, (3). *Prerequisite:* Junior standing; fifteen hours credit in chemistry in addition to the elementary courses.

16. INORGANIC CHEMISTRY.—Laboratory. Preparation of the less easily produced inorganic compounds. S, I, and II, (2). *Prerequisite*: Registration or credit in Chemistry 15.

Analytical Chemistry

- 25b. A SURVEY OF ANALYTICAL CHEMISTRY.—For advanced undergraduate and graduate students requiring further training and review in analytical chemistry. Not open to students who have had Chemistry 10 or 24. S and II, (3). *Prerequisite*: Senior standing, or consent of instructor.
- 26a. CHEMICAL ANALYSIS AND TREATMENT OF WATER.—Chemical and instrumental methods for analysis of water and determination of quality; chemical principles and processes in water purification and conditioning, including chromatographic absorption; relationship of chemistry of water to municipal and industrial use. Lectures and demonstrations. I, (3). *Prerequisite*: Chemistry 24.
27. SPECIAL METHODS AND INSTRUMENTS IN QUANTITATIVE ANALYSIS.—Gas analysis; electrometric titration, optical methods, and other advanced analyses. I and II, (3). *Prerequisite*: Chemistry 24 and 34; registration or credit in Chemistry 40 and 41.
- 28a. QUALITATIVE MICROANALYSIS.—Laboratory and conferences. S, (3). *Prerequisite*: Chemistry 24, and 33 or 34.
- 29b. FOOD ANALYSIS.—Quantitative organic analysis of food products; alcohols, carbohydrates, fats and oils, cereals, nitrogenous bodies, preservatives, and colors. S and II, (5). *Prerequisite*: Chemistry 24, and 33 or 34.

Organic Chemistry

36. ORGANIC CHEMISTRY.—Second course. Lectures and recitations. S, I, and II, (3). *Prerequisite*: Chemistry 34.
37. ORGANIC CHEMISTRY.—Organic synthesis. Laboratory, to accompany Chemistry 36. S, I, and II, (2). *Prerequisite*: Chemistry 34; registration or credit in Chemistry 36.
38. SYSTEMATIC IDENTIFICATION OF ORGANIC COMPOUNDS.—S, I, and II, (3). *Prerequisite*: Chemistry 36 and 37.

Physical Chemistry

40. ELEMENTARY PHYSICAL CHEMISTRY.—Lectures and problems. S, I, and II, (3). *Prerequisite*: Chemistry 24; Physics 1a-1b or 7a-7b; Mathematics 7 or 8a-8b.
41. ELEMENTARY PHYSICAL CHEMISTRY.—Laboratory, to accompany Chemistry 40. S, I, and II, (1). *Prerequisite*: Chemistry 24; Physics 1a-1b or 7a-7b; Mathematics 7 or 8a-8b.
42. ELEMENTARY PHYSICAL CHEMISTRY.—Lectures. Continuation of Chemistry 40. I and II, (3). *Prerequisite*: Chemistry 40.
43. ELEMENTARY PHYSICAL CHEMISTRY.—Laboratory, to accompany Chemistry 42. S, I, and II, (1). *Prerequisite*: Chemistry 40 and 41; credit or registration in Chemistry 42.
- 44a. ADVANCED PHYSICAL CHEMISTRY.—Thermodynamics and free energy calculations. S and I, (2). *Prerequisite*: Chemistry 40 and 41.
- [46b. ADVANCED PHYSICAL CHEMISTRY.—Atomic structure. II, (2). *Prerequisite*: Chemistry 40 and 41.]
- 49b. CHEMISTRY OF COLLOIDS.—II, (3). *Prerequisite*: Chemistry 22 and 47, or equivalent.

Biochemistry

50. BIOCHEMISTRY.—Proteins, fats, and carbohydrates; tissues, digestion, intestinal putrefaction, and feces; quantitative analysis of gastric contents, blood, milk, and urine. Clinical aspects for prospective students of medicine. Lectures, demonstrations, conferences, laboratory, and readings. S, I, and II, (5). *Prerequisite*: Chemistry 24 or 22 and 33 or 34.
- 51b. BIOCHEMISTRY. PROBLEMS OF METABOLISM.—Micro-methods of blood and urine analysis, with their applications to metabolism and to the diagnosis and treatment of disease. Lectures, conferences, and laboratory. II, (3). *Prerequisite*: Chemistry 50.
- 52b. BIOCHEMISTRY OF VITAMINS AND HORMONES.—Lectures. S and II, (3). *Prerequisite*: Chemistry 50.

Chemical Engineering

- 60a. CHEMICAL ENGINEERING UNIT PROCESSES.—Heat and material balances and design problems. Lectures and recitations. I, (3). *Prerequisite:* Chemistry 63b.
- 61a-61b. PRINCIPLES OF CHEMICAL ENGINEERING.—Scientific principles in unit operations of chemical engineering. Lectures and laboratory. S, I, and II, (3). *Prerequisite:* Chemistry 63b.
- 62a. PRINCIPLES OF RESEARCH AND DEVELOPMENT.—S and I, (2). *Prerequisite:* Chemistry 63b or 67b.
- 63b. INTRODUCTION TO CHEMICAL ENGINEERING.—Unit operations, equipment, and calculations. Lectures. S, (3). *Prerequisite:* Junior standing; Chemistry 40.
- 68a-68b. UNIT OPERATIONS.—Laboratory. S, (2). *Prerequisite:* Registration or credit in Chemistry 61a. (68b not given in 1946-1947).

Miscellaneous

- 95a. HISTORY OF SCIENCE WITH PARTICULAR REFERENCE TO CHEMISTRY.—Lectures and readings. I, (2). *Prerequisite:* Twenty hours of laboratory science; junior standing.
97. RADIOCHEMISTRY.—For advanced undergraduate and graduate students in the fields of inorganic, analytical, or physical chemistry. Lectures. I and II, (2). *Prerequisite:* Chemistry 40 and 41; consent of instructor.
98. RADIOCHEMISTRY.—Laboratory to accompany Chemistry 97. II, (1). *Prerequisite:* Chemistry 40 and 41; consent of instructor.

Courses for Graduates

NOTE: Students who intend to take graduate work for an advanced degree in chemistry should include in their undergraduate preparation at least the equivalent of one full year of physics, one year of French, one year of German, and mathematics through differential and integral calculus. Any student without the necessary physics or mathematics may enter the Graduate School but will be required to spend part of his time in residence to remove the deficiency. In order to be admitted as a candidate for an advanced degree in chemistry a student must have had one year of college French or German (preferably German). Where the applicant has done two or three years of work in French or German in a secondary school, the requirement will be considered to be met provided at least one semester of the language more advanced than his secondary work has been done in college. Four years of French or German completed in a secondary school will be accepted in lieu of any college work in the subject. An applicant who has a knowledge of French or German, but who lacks formal credentials, may be examined to determine his language status. Such an applicant should correspond with the Registrar with reference to this examination.

Candidates for an advanced degree in chemistry must have had the equivalent of 25 semester hours in chemistry, properly distributed.

Candidates for the A.M. or M.S. degree with the principal work in chemistry must include among their courses Chemistry 40 and 41, or must have had the equivalent.

Candidates for the Ph.D. degree in any branch of chemistry must include among their courses Chemistry 40, 41, 42, and 43, or must have had the equivalent.

Graduate students whose major subject is in some department other than chemistry, before taking chemistry courses for graduate credit, must have had the equivalent of fifteen semester hours in chemistry, and the ground covered should include satisfactory work in general chemistry and in qualitative and quantitative analysis and elementary organic chemistry. Such students are advised to make selections from the following courses: Chemistry 40, 41, 42, 43, 27, 36, 37, 50, 60a, 15, 16, and 29b. Courses of a more special nature will not, as a rule, be accepted for graduate work unless preceded by one of the courses above.

Those who intend to take a first minor in chemistry or any branch of chemistry toward the Ph.D. degree must include among their courses Chemistry 40 and 41, or must have had the equivalent.

Inorganic Chemistry

- 101b. INORGANIC CHEMISTRY.—The less familiar elements and their relationship in the periodic system. Lectures and recitations. II, ($\frac{3}{4}$ unit).

- 102b. INORGANIC CHEMISTRY.—Inorganic preparations and qualitative analysis of the less familiar elements. Laboratory, to accompany or follow Chemistry 101b. S and II, ($\frac{1}{4}$ to $\frac{3}{4}$ unit).
- 105a-105b. INORGANIC CHEMISTRY.—Seminar. Required of all graduate students whose major is inorganic chemistry. I and II, ($\frac{1}{4}$ unit).
- 106a-106b. SPECIAL TOPICS IN INORGANIC CHEMISTRY.—Discussions and reports. S and I, ($\frac{3}{4}$ unit). (106b not given in 1946-1947).

Analytical Chemistry

- 123a. QUALITATIVE ANALYSIS.—Advanced principles, calculations, methods, and applications. Required of all graduate students whose major or minor is analytical chemistry. Lectures. I, ($\frac{1}{2}$ unit).
- 124b. QUANTITATIVE ANALYSIS.—Advanced principles, calculations, experimental methods, and applications. Required of all graduate students whose major or minor is analytical chemistry. Lectures. II, ($\frac{1}{2}$ unit).
- 124d. QUANTITATIVE ANALYSIS.—Laboratory. Optional, to accompany Chemistry 124b. II, ($\frac{1}{2}$ unit).
- 125a-125b. ANALYTICAL CHEMISTRY.—Seminar. Special topics in analytical chemistry. Required of all graduate students whose major or minor is analytical chemistry. I and II, ($\frac{1}{4}$ to 1 unit).
- 126a-126b. OPTICAL AND OTHER INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS.—Spectroscopy, polarimetry, refractometry, spectrophotometry, colorimetry, microscopy, polarography, potentiometric, amperometric, conductimetric titrations, mass spectrometry, dielectric and supersonic methods, electron microscopy and other selected topics. Lectures and laboratory. I and II, ($\frac{3}{4}$ unit).
- 127a-127b. APPLIED X-RAYS.—Lectures. I and II, ($\frac{1}{2}$ unit).
- 127c-127d. APPLIED X-RAYS.—Laboratory. Optional, to accompany Chemistry 127a-127b. I and II, ($\frac{1}{2}$ unit).

Organic Chemistry

- 130a. ORGANIC CHEMISTRY.—Survey of organic chemistry designed for first-year graduate students. S, I, and II, (1 unit).
- 132b. ORGANIC CHEMISTRY.—Advanced survey of organic chemistry (to follow Chemistry 130a). Lectures. II, (1 unit).
- 133a. ORGANIC CHEMISTRY.—Optical isomerism, *cis-trans* isomerism, tautomerism, chemistry of the carbohydrates, etc. Lectures. I, ($\frac{3}{4}$ unit).
- 134a. ORGANIC CHEMISTRY.—Advanced organic synthesis. Laboratory. S and I, ($\frac{1}{2}$ to 1 unit).
- 135a-135b. ORGANIC CHEMISTRY.—Seminar. Current literature. I and II, ($\frac{1}{4}$ unit).
- 136b. ORGANIC CHEMISTRY.—Newer methods in organic laboratory procedure. Lectures and laboratory. II, ($\frac{1}{4}$ to 1 unit).

Physical Chemistry

- [140a. PHYSICAL CHEMISTRY.—I, ($\frac{3}{4}$ unit).]
- 142a-142b. CHEMICAL THERMODYNAMICS.—Fundamental laws and calculation of thermodynamic qualities. Lectures. I and II, (1 unit).
- 144a-144b. PHYSICAL CHEMISTRY.—Kinetic theory, statistical mechanics, molecular dynamics. Lectures. I and II, ($\frac{3}{4}$ unit). (144a not given in 1946-1947.)
- 145a-145b. PHYSICAL CHEMISTRY.—Seminar. Recent developments. I and II, ($\frac{3}{4}$ unit).

Biochemistry

- 150b. BIOCHEMISTRY.—Chemistry of intermediary metabolism. Lectures, discussions, and readings. II, ($\frac{3}{4}$ unit).
- 152a-152b. BIOCHEMISTRY.—Difficult biochemical preparations; analytical methods. Chiefly laboratory. S, I, and II, ($\frac{1}{2}$ to 1 unit).
- 155a-155b. BIOCHEMISTRY.—Seminar. Current literature. Required of all graduate students whose major is biochemistry. I and II, ($\frac{3}{4}$ unit).

Chemical Engineering

- 161a. HEAT TRANSMISSION.—Lectures. Especially designed for first-year graduate students. S, ($\frac{1}{2}$ unit). *Prerequisite*: Chemistry 61a.

Miscellaneous

190a-190b. RESEARCH.—Candidates for the A.M. or M.S. degree who elect research are required to present a thesis. A thesis is always required of students taking the Ph.D. degree. Not all candidates for thesis work necessarily will be accepted. Students whose major is in departments other than chemistry must receive permission from the Head of the Chemistry Department to register in this course. S, I, and II ($\frac{1}{4}$ to 4 units). Work may be taken in the following fields, subject to the approval of one of the qualified staff members:

PHYSICAL CHEMISTRY.

ORGANIC CHEMISTRY.

INORGANIC CHEMISTRY.

WATER CHEMISTRY; ZYMOCHEMISTRY.

ANALYTICAL CHEMISTRY.

BIOCHEMISTRY.

FOOD CHEMISTRY AND PHYTOCHEMISTRY.

CERAMIC CHEMISTRY.

APPLIED X-RAYS AND ELECTRON MICROSCOPY.

192a. CHEMICAL LITERATURE AND REFERENCE WORK.—I, ($\frac{1}{4}$ unit).

CHEMICAL ENGINEERING

Courses for Undergraduates

61. STOICHIOMETRY.—Flow sheets with heat and material balances in batch and continuous processes. Lectures and recitations. I and II, (3). *Prerequisite:* Registration or credit in Chemistry 40 or 48.

Courses for Advanced Undergraduates

66a-66b. INSPECTION TRIP.—I and II, ($\frac{1}{2}$). *Prerequisite:* Senior standing in chemistry or chemical engineering.

90a-90b. THESIS.—Limited in general to seniors in the curriculum in chemical engineering. Any others must have the consent of the head of the department. All students taking this course must present a thesis in order to receive credit. I and II, (2 to 6).

Courses for Advanced Undergraduates and Graduates

70. CHEMICAL ENGINEERING THERMODYNAMICS.—The fundamental concepts and laws of thermodynamics, primarily for students in chemical engineering. Lectures and recitations. II, (3). *Prerequisite:* Chemical Engineering 61 or Chemistry 40.

71. PRINCIPLES OF CHEMICAL ENGINEERING.—Scientific principles in unit operations of chemical engineering. First course. Lectures and recitations. II, (4). *Prerequisite:* Chemical Engineering 70 or junior standing; Chemistry 40.

72. UNIT OPERATIONS.—First course. Laboratory to accompany Chemical Engineering 71. I and II, (2). *Prerequisite:* Registration or credit in Chemical Engineering 71, or Chemistry 61a.

74. UNIT OPERATIONS.—Second course. Laboratory to accompany Chemistry 61b. I and II, (2). *Prerequisite:* Registration or credit in Chemistry 61b.

79. CHEMICAL ENGINEERING PROJECTS.—Laboratory. Development of individual project in unit processes or unit operations. I and II, (2). *Prerequisite:* Senior standing in chemical engineering.

80. CHEMICAL ENGINEERING CALCULATIONS.—Numerical and graphical methods for problems in equilibria and kinetics. Lectures and recitations. II, (3). *Prerequisite:* Chemistry 34 and 44a.

82. HIGH PRESSURE REACTIONS.—Lectures and recitations. II, (2). *Prerequisite:* Chemistry 34 and 44a.

83. APPLIED ELECTROCHEMISTRY.—Lectures. I, (2). *Prerequisite:* Senior standing in chemistry or chemical engineering.

84. POWER PLANT AND BOILER WATER PROBLEMS.—Lectures. I, (2). *Prerequisite:* Senior standing in chemistry or chemical engineering.

87. FLOW OF FLUIDS.—Advanced course. I, (2). *Prerequisite:* Chemistry 61a, or equivalent; consent of instructor.

88. HEAT TRANSMISSION.—Advanced course. I, (2). *Prerequisite:* Chemistry 61a, or equivalent; consent of instructor.

89. CATALYSIS.—Reaction kinetics and design of industrial catalytic reactors. II, (2). *Prerequisite:* Chemical Engineering 73 or Chemistry 61b.

See also Chemistry 60a, 61a, 61b, 63b, 68a, and 68b.

Courses for Graduates

NOTE: Graduate students who are candidates for an advanced degree in chemical engineering should have had undergraduate training comparable to that offered at the University of Illinois, including mathematics through calculus, and year courses in physics, mechanics, and electrical engineering. Students who enter without the usual engineering courses prescribed in the undergraduate chemical engineering curricula will be required to make up their deficiencies to the extent prescribed by their adviser.

Candidates for an advanced degree in chemical engineering must have had the equivalent of 25 hours of chemistry, including organic and physical chemistry.

Candidates for the Master of Science degree in chemical engineering must include Chemical Engineering 87 and 88 among their courses.

Graduate students whose major subject is in some other department and who choose chemical engineering as a minor must take at least two units of work in this subject.

[163. EVAPORATION, DRYING, HUMIDIFICATION, AND DEHUMIDIFICATION.—Lectures. I, ($\frac{1}{2}$ unit). *Prerequisite:* Chemistry 61b. Given in alternate years.]

164. ABSORPTION AND EXTRACTION.—Lectures. I, ($\frac{3}{4}$ unit). *Prerequisite:* Chemistry 61b. Given in alternate years.

165a-165b. CHEMICAL ENGINEERING.—Seminar. Required of all graduate students whose major is chemical engineering. I and II, ($\frac{1}{4}$ unit).

166. FILTRATION AND SEPARATION.—Lectures. II, ($\frac{3}{4}$ unit). *Prerequisite:* Chemistry 61b. Given in alternate years.

[167. DISTILLATION.—Lectures. II, ($\frac{1}{2}$ unit). *Prerequisite:* Chemistry 61b. Given in alternate years.]

[168. ECONOMIC BALANCE AND PLANT DESIGN.—Lectures. II, ($\frac{1}{2}$ unit). *Prerequisite:* Chemistry 61b. Given in alternate years.]

190a-190b. RESEARCH.—Candidates for the master's degree who elect research are required to write a thesis. A thesis is always required for the degree of Doctor of Philosophy. Not all candidates for thesis work necessarily will be accepted. Any student whose major is in another department must receive permission from the Head of the Department to register in this course. S, I, and II, (14 to 4 units).

See also *Chemistry 161a*.

CIVIL ENGINEERING

Courses for Undergraduates

1. PLANE SURVEYING.—Use and care of instruments; practice in the common field methods of measuring distance, angles, and elevation; computations of areas and volumes; land survey and re-survey methods; legal principles; problems. At summer camp only, (3). *Prerequisite:* General Engineering Drawing I or 4; Mathematics 4.
2. TOPOGRAPHIC SURVEYING.—Contours, map construction and volumetric estimates from contour maps; astronomical determination of latitude and azimuth; transit-stadia methods of topographic surveying; survey and map of an assigned area. At summer camp only, (3). *Prerequisite:* Civil Engineering 1.
- 3a. ROUTE SURVEYING.—Horizontal and vertical alinement for railways and highways; grades and grade reduction; curves, turnouts, and earthwork, principles of economic location; surveys, plans, and estimates. S, I, and II, (3). *Prerequisite:* Civil Engineering 2, 15, or 18.
- 3b. ROUTE SURVEYING.—To be taken concurrently with Civil Engineering 3a or at preceding summer camp. S, I, and II, (1).
- [6. PHOTOGRAMMETRY.—Principles of perspective and stereoscopic vision; characteristics of aircraft and cameras for mapping work; photographic scales and displaced images; plotting map control from photographers by slotted templates; transferring photographic data by tracing and by projectors; drawing a topographic map from photographs using (a) a linear scale and (b) the stereocomparograph, the multiplex projector, and other photogrammetric instruments. I, (3). *Prerequisite:* Civil Engineering 2.]
15. GENERAL SURVEYING.—Use and care of surveying instruments; computations of areas and volumes; transit-stadia mapping methods; contour problems. For

- students in other departments. S, I, and II, (3). *Prerequisite:* General Engineering Drawing 1 or 4; Mathematics 4.
17. SURVEYING FOR LANDSCAPE ARCHITECTS.—Field problems; use of instruments, note-keeping, signals, basic surveying operations; office problems. I, (3). *Prerequisite:* Sophomore standing in landscape architecture.
 18. SURVEYING FOR LANDSCAPE ARCHITECTS.—Use and construction of contour maps; methods of mapping; computation of earthwork; office problems; actual surveys. II, (3). *Prerequisite:* Civil Engineering 17.
 19. CONSTRUCTION SURVEYING.—Principles of surveying as applied to construction work on bridges, buildings, tunnels, sewers, etc. II, (3). *Prerequisite:* Civil Engineering 3; Mathematics 7.
 20. HIGHWAYS.—Soils, drainage, and materials of construction for roads and pavements; construction of earth, gravel, and macadam roads; city and rural pavement construction, repairs and maintenance; accessories; resurfacing; width and capacity of roads and streets; estimates. S, I, and II, (3). *Prerequisite:* Civil Engineering 2, 15, 18, or consent of instructor.
 22. HIGHWAY AND MUNICIPAL DESIGN.—Road systems, city streets, pavement types; design, preparation of plans, specifications, and estimates of cost. S and I, (4). *Prerequisite:* Civil Engineering 20, or consent of instructor.
 23. TRAFFIC ENGINEERING.—Characteristics of highway traffic; vehicle dimensions and weights; speeds and speed limits; traffic surveys, types, methods, interpretations; traffic control devices, motor vehicle and traffic laws; enforcement; safety. II, (3). *Prerequisite:* Civil Engineering 20 or consent of instructor.
 24. AIRPORT DESIGN.—Requirements of site; arrangement of various facilities; location, soil studies, grading, drainage, and surfacing of runways; general features of hangars, shops, and other buildings. II, (3). *Prerequisite:* Senior standing in engineering or architecture.
 25. RAILWAY CONSTRUCTION AND MAINTENANCE.—Earthwork and rockwork; track materials; track stresses; and track design. II, (3). *Prerequisite:* Civil Engineering 3.
 26. RAILWAY LOCATION AND OPERATION.—Influence of volume of traffic, alinement, and gradient upon operating expenses. II, (3). *Prerequisite:* Civil Engineering 3.
 27. TERMINALS.—Design and operation of railway yards, freight terminals, and passenger stations. Bus and truck terminals and stations. I, (2). *Prerequisite:* Civil Engineering 3 or consent of instructor.
 29. SIGNALS.—Railway block and route signaling; automatic train control; interlocking; track circuits; signal equipment; highway fixed cycle and traffic actuated signals. II, (2). *Prerequisite:* Civil Engineering 3 and 20, senior standing, or consent of instructor.
 30. HIGHWAY MATERIALS LABORATORY.—Laboratory practice in testing of asphalts, tars, road oils, bituminous mixtures, stone, gravel, and paving brick. S, I, and II, (1). *Prerequisite:* Junior standing in engineering, architecture, or landscape architecture.
 - [31. ADVANCED HIGHWAY MATERIALS.—Advanced work in the examination and testing of bituminous materials and mixtures, Portland cement concrete, and soils for engineering purposes. Each student selects one material for special study. II, (2). *Prerequisite:* Civil Engineering 30, 32, or 35.]
 32. ENGINEERING PROPERTIES OF SOILS.—Origin, formation, development, classification, identification, and characteristics of soils; engineering soil surveys; sampling; compaction of embankments; frost action; and laboratory practice in testing of soils. II, (2). *Prerequisite:* Senior standing in engineering, or consent of instructor.
 35. PLAIN CONCRETE.—Tests for Portland cement; aggregates; field and laboratory examination and tests; proportioning. Laboratory practice. S, I, and II, (2). *Prerequisite:* Sophomore standing in engineering, architecture, or landscape architecture.
 36. CONSTRUCTION MATERIALS.—Manufacture, properties, and use of cast iron, wrought iron, steel, and other metals; brick and terra cotta; formation, properties, and use of stone; growth, properties, and use of timber. This course supplements Civil Engineering 30, 31, and 35. I and II, (1). *Prerequisite:* Sophomore standing in engineering, architecture, or landscape architecture.
 40. WATER SUPPLY.—Finances, hydraulics, demands, sources, reservoirs, pipe lines, pumping machinery, materials, distribution systems. S, I, and II, (4). *Prerequisite:* Theoretical and Applied Mechanics 3, 4, and 64; Mechanical Engineering 1.

41. SEWERAGE.—Sewerage systems, surveys and plants, hydraulics, house sewerage, rainfall and storm-water flow, size and capacity of sewers, appurtenances, estimates and specifications, construction. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 4 and 64.
44. WATER AND SEWAGE TREATMENT.—Principles, design, and operation of water purification and sewage treatment works. II, (3). *Prerequisite:* Bacteriology 5a; registration or credit in Civil Engineering 41.
- [45. PUBLIC HEALTH ENGINEERING.—Principles of sanitation, waste collections and disposal, sanitary regulations, biostatistics. I, (3). *Prerequisite:* Registration or credit in Bacteriology 5a and Chemistry 22.]
48. WATER SUPPLY AND SEWERAGE.—Development, design, construction, and maintenance of municipal water works and sewerage works not including water purification or sewage treatment. I and II, (4). *Prerequisite:* Theoretical and Applied Mechanics 4 and 64, or 5 and 65.
50. HYDROLOGY.—Precipitation, evaporation, transpiration, deep seepage, run-off, hydraulics of rivers and small streams; use of current meter, float, weir, etc. I, (3). *Prerequisite:* Senior standing in engineering.
- [51. DRAINAGE AND FLOOD CONTROL.—Land drainage, river improvement, flood control. II, (3). *Prerequisite:* Civil Engineering 50.]
- [52. WATER RESOURCES, PLANNING AND DEVELOPMENT.—Purposes and technics of planning water resources developments; methods of evaluating the engineering and economic aspects of water conservation projects developed through the examination of actual proposals. II, (3). *Prerequisite:* Registration or credit in Civil Engineering 50.]
55. WATER POWER.—Rainfall and stream flow records; estimate of available power; theory and testing of turbines; dams, power house, approach channels, draft tubes; relation of investment costs, auxiliary plants, and other factors to the value of projects. II, (3). *Prerequisite:* Theoretical and Applied Mechanics 4 and 64.
60. BRIDGE AND BUILDING CONSTRUCTION.—Materials, types of construction, and details for bridges and buildings. S, I, and II, (3). *Prerequisite:* Sophomore standing.
61. STRUCTURAL STRESSES.—Analysis of stresses in statically determinate structures. S, I, and II, (4). *Prerequisite:* Registration or credit in Theoretical and Applied Mechanics 3.
62. STRUCTURAL ANALYSIS.—An introduction to statically indeterminate structures. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3; Civil Engineering 61.
63. ELEMENTARY STRUCTURAL DESIGN.—An introduction to structural design; design of flexural members in steel, concrete, and timber. S, I, and II, (2). *Prerequisite:* Theoretical and Applied Mechanics 3; registration or credit in Civil Engineering 61.
64. STRUCTURAL DESIGN.—Theory of design and design of structures of steel, concrete, and timber. S, I, and II, (5). *Prerequisite:* Civil Engineering 62 and 63.
65. STRUCTURAL DESIGN.—An extension of Civil Engineering 64, devoted principally to bridges. S, I, and II, (4). *Prerequisite:* Civil Engineering 64.
66. EARTH AND MASONRY STRUCTURES.—Dams, retaining walls, bridge piers and abutments, and foundations. S, I, and II, (3). *Prerequisite:* Civil Engineering 61 and 63.
67. STATICALLY INDETERMINATE STRUCTURES.—Elastic theory and its applications to statically indeterminate structures. S and II, (3). *Prerequisite:* Registration or credit in Civil Engineering 64. Civil Engineering 67 is recommended for graduate students who have not had similar training.
68. STATICALLY INDETERMINATE STRUCTURES.—Continuation of Civil Engineering 67. I, (3). *Prerequisite:* Civil Engineering 67, or Civil Engineering 62 and consent of instructor.
86. ADVANCED AIRCRAFT STRUCTURES.—Structural theory and design of aircraft; analysis of unsymmetrical sections, multiple cell structures with thin skin in bending and torsion and stiffened flat and curved sheets; combined stresses; deflection of beams and trusses. II, (3). *Prerequisite:* Civil Engineering 62 and 63.
- [87. ADVANCED AIRCRAFT STRUCTURES.—Analysis of semi-tension field beams, beam columns, closed frames, curved beams and indeterminate trusses; column

- analogy and moment distribution. I and II, (3). *Prerequisite:* Aeronautical Engineering 25 or Civil Engineering 86.]
- [88. AIRCRAFT PHYSICAL TESTING.—Physical testing of structural members and assemblies; use and calibration of strain and deflection measuring devices; design of fixtures used for testing. I and II, (2). *Prerequisite:* Civil Engineering 86.]
- [89. STRUCTURAL ENGINEERING.—Design of steel, reinforced concrete, and timber structures. For students in other departments. I, (3). *Prerequisite:* Senior standing in engineering or architecture.]
90. CONTRACTS AND SPECIFICATIONS.—Engineering relations; the law of contracts; business and technical clauses used in specifications. S, I, and II, (2). *Prerequisite:* Senior standing in engineering or architecture.
91. ESTIMATES AND COSTS.—Economic selection; construction cost estimating; direct and overhead costs; cost keeping; construction by force account and contract; time schedules and progress charts; valuation. I and II, (2). *Prerequisite:* Senior standing in engineering or architecture.
- 93-94. PROFESSIONAL PRACTICE.—A series of lectures by distinguished engineers on various phases of civil engineering professional practice. Lectures will be given on alternate weeks. I and II, (no credit). *Prerequisite:* Senior standing in civil engineering.
- 95-96. SPECIAL PROBLEMS.—Individual investigations or studies of any phase of civil engineering selected by the students. I and II, (1 to 3). *Prerequisite:* Senior standing in civil engineering.
- [97-98. THESIS.—Investigation or design. May be substituted for certain technical subjects in any of the five options of the senior year. Continuous through I and II, (1 to 3). *Prerequisite:* Senior standing; consent of head of department.]
- [99. INSPECTION TRIP.—I, (no credit). *Prerequisite:* Senior standing.]

Courses for Graduates

- 120a. HIGHWAY ENGINEERING.—Highway transportation, airport design, street layouts, regional plans, and pavements for cities. I, (1 unit).
123. HIGHWAY TRAFFIC, TRANSPORT, AND SAFETY.—Traffic growth, characteristics, surveys, regulations, and signaling; private and commercial transportation by automobile, bus, and truck; transportation organization and regulation; accident surveys, analysis, and prevention. I and II, (1 unit).
124. AIRPORT DESIGN.—Requirements of site; arrangement of various facilities; location, soil studies, grading, drainage, and surfacing of runways; general features of hangars, shops, and other buildings. I and II, (1 unit).
125. RAILWAY LOCATION AND OPERATION.—Railway location; track capacity; tonnage ratings. II, (1 unit).
135. MUNICIPAL ENGINEERING.—City finances and budgets, the work of the city manager and city engineer, zoning, playgrounds and parks, street cleaning, smoke prevention, and fire prevention. II, (1 unit).
- 140a. WATER SUPPLY.—Design, pumping machinery, administration, operation. II, (1 unit).
143. SEWERAGE.—Sewer design, construction, maintenance, operation, and financing. II, (1 unit).
144. SEWAGE DISPOSAL, WASTES DISPOSAL, AND GENERAL SANITATION.—Principles and design of sewage treatment and waste disposal works. I, (1 unit).
146. PUBLIC HEALTH ENGINEERING.—Design of water purification works and principles of sanitation. I, (1 unit).
148. SANITARY ENGINEERING LABORATORY.—Tests of water supply, sewerage, water purification and sewage treatment equipment and processes. I, (1 to 2 units).
150. HYDROLOGY AND FLOOD CONTROL.—Magnitude and frequency of flood flow of streams, minimum flow of streams and regulation of flow by storage reservoirs, intense rainfall and the development of intensity curves for use in rational run-off formula, unit-graph method of computing flood run-off, flood control and prevention by channel improvement, levees, and reservoirs. I, (1 unit).
- [152. WATER RESOURCES PLANNING AND DEVELOPMENT.—Purposes and technics of planning water resources developments; methods of evaluating the engineering and economic aspects of water conservation projects developed through the examination of actual proposals. II, (1 unit).]
155. WATER POWER.—Preliminary investigations, selection of site, storage requirements, structures, machinery, etc. II, (1 unit).

161. STRUCTURAL THEORY AND DESIGN.—General theory of continuity; moment distribution; the column analogy; rigid frame bridges and buildings; fixed and continuous arches; classification of structures from viewpoint of design. S, I, and II, (1 or 2 units).
162. STRUCTURAL THEORY AND DESIGN.—Statically indeterminate trusses; continuous trusses; steel arches; secondary stresses; suspension bridges; long-span roofs; skeleton steel buildings. S, I, and II, (1 to 2 units).
164. REINFORCED CONCRETE DESIGN.—Theories of action of beams, slabs, and columns of reinforced concrete; codes and specifications and their influence on design; effect of continuity. S, I, and II, (1 unit).
165. STEEL DESIGN.—Design of steel members; codes and specifications for buildings; riveted and welded connections; evolution of bridge specifications; loads and working stresses; economic proportions. I and II, (1 unit).
169. WOOD STRUCTURES.—Theory and practice in the design of modern wood structures; the effect of the plant origin and physical structure of wood on its mechanical strength; fasteners and their significance in design and the development of design formulae. I, (1 unit).
170. EARTH AND MASONRY STRUCTURES.—Design and construction of dams, retaining walls, abutments and piers, culverts, grain elevators and bins. S and II, (1 unit).
173. SOIL MECHANICS.—Physical properties of soils; identification and description of soils; permeability, compressibility, consolidation, and shearing resistance; deformation and drainage characteristics. Theories of soil mechanics; earth pressure, stability, settlement, seepage, and consolidation. I, (1 unit).
174. SOIL MECHANICS.—Practical considerations; boring, sampling, testing; retaining walls, open cuts, slides, dams, and embankments; foundations, settlements due to excavation and other causes; field observations. Limitations and alternatives to conventional procedures of design and construction. Further study in any phase of this course can be pursued under Civil Engineering 190. II, (1 unit).
181. ADVANCED STRUCTURAL ANALYSIS: APPROXIMATE METHODS.—Methods of successive approximations and numerical procedures for the solution of complex problems, with applications to bridges, buildings, and aircraft structures. Method of successive relaxation of constraints, energy methods, difference equations, numerical integration procedures, method of collocation, method of least squares, and Galerkin's method. I, (1 to 2 units).
182. ADVANCED STRUCTURAL ANALYSIS: BUCKLING, VIBRATIONS, AND IMPACT.—Elastic and inelastic instability of bars, plates, and plates with stiffeners. Vibrations of structures including earthquake effects. Action of simple structural elements and of more complex structures subjected to dynamic loads, with applications to bridges, buildings, and aircraft structures. II, (1 to 2 units).
185. ANALYTICAL STUDY OF TESTS OF STRUCTURAL STEEL MEMBERS.—Planning tests, limitations of experimental methods, interpretation of results in terms of design practice. II, (1 unit).
186. ADVANCED AIRCRAFT STRUCTURES.—Analysis and design of frames and individual members of aircraft structures. I and II, (1 to 2 units).
190. SPECIAL PROBLEMS.—Individual investigations or studies of any phase of civil engineering selected by the student. S, I, and II, ($\frac{1}{2}$ to 2 units).
198. THESIS.—S, I, and II, (1 to 2½ units).

CLASSICS

Undergraduate Major in Greek

Major: 20 hours in Greek, excluding Greek 1a-1b, 15, 16, and 18.

Minors: 20 hours chosen from not more than two of the following: foreign language (Latin being especially recommended), English literature, history, and philosophy. At least eight hours must be taken in each subject, if two are chosen.

Undergraduate Major in Latin

Major: 20 hours in Latin, excluding Latin 1a-1b, 6, 11a-11b, 13, and including six hours in translation courses for advanced undergraduates and graduates.

Minors: 20 hours chosen from not more than two of the following: foreign language (Greek being especially recommended), English literature, history, and philosophy. At least eight hours must be taken in each subject, if two are chosen.

Undergraduate Major in the Classics

Major: 20 hours in Greek and Latin, excluding Greek 15, 16, and 18, and Latin 1a-1b, 6, 9, 11a-11b, and 13. At least six hours must be taken in the secondary language and the remaining hours in the primary one.

Minors: 20 hours chosen from not more than two of the following: foreign language, English literature, history, and philosophy. At least eight hours must be taken in each subject, if two are chosen.

Graduate Major in the Classics

Major: For the degree of Master of Arts in the Classics, the major may be either Greek or Latin. For the degree of Doctor of Philosophy in the Classics, the major may be either Greek or Latin, but whichever language is taken as a major, the other must be taken as a minor.

CLASSICS IN TRANSLATION

Introductory Courses for Undergraduates

NOTE: The following courses presuppose no knowledge of the Greek or Latin languages and are open to all students. They are not to be counted towards a major or a minor in Greek, Latin, or the Classics.

1. INTRODUCTION TO GREEK LITERATURE IN ENGLISH TRANSLATION.—This course meets the general education requirement in the College of Liberal Arts and Sciences. I, (3).
2. INTRODUCTION TO LATIN LITERATURE IN ENGLISH TRANSLATION.—This course meets the general education requirement in the College of Liberal Arts and Sciences. II, (3).
17. GREEK DRAMA IN ENGLISH TRANSLATION.—II, (2).
20. MYTHOLOGY OF GREECE AND ROME.—Lectures and readings. I, (2).

GREEK

Courses for Undergraduates

NOTE: Greek 1a-1b is intended for students who can not present Greek for entrance to the University but who desire to begin the study of the language. The normal sequence of the translation courses is Greek 3, 4, 5 or 7, 6 or 8.

Knowledge of Greek is not required in courses 15, 16, and 18a-18b.

See also Latin 13.

- 1a-1b. ELEMENTARY GREEK.—I and II, (4).
3. SECOND YEAR GREEK.—Xenophon. I, (3). *Prerequisite:* Greek 1a-1b.
4. SECOND YEAR GREEK.—Homer, selections from the *Iliad*. II, (3). *Prerequisite:* Greek 3, or equivalent.
15. GREEK AND ROMAN SPORTS.—Lectures and readings. I and II, (2).

Courses for Advanced Undergraduates and Graduates

5. HERODOTUS AND THE LYRIC POETS.—I, (3). *Prerequisite:* Greek 4, or equivalent.
6. THUCYDIDES AND PLATO.—II, (3). *Prerequisite:* Greek 5, or equivalent.
- [7. GREEK DRAMA.—I, (3). *Prerequisite:* Greek 4, or equivalent.]
- [8. ORATORY AND ARISTOTLE.—II, (3). *Prerequisite:* Greek 5 or 7, or equivalent.]
18. GREEK ART AND ARCHAEOLOGY.—I, (2). *Prerequisite:* Junior standing.

Courses for Graduates

NOTE: Students desiring to do graduate work in Greek should have at least three years of college Greek and two years of college Latin, or the equivalent. A reading knowledge of French and German is required of candidates for the doctor's degree. The study of history and philosophy is especially recommended.

104a-104b. HOMER.—I and II, (1 unit).

[106a. GREEK DRAMA: TRAGEDY.—I, (1 unit).]

[106b. GREEK DRAMA: COMEDY.—II, (1 unit).]

- 110a-110b. BIBLIOGRAPHY AND CRITICISM.—Thesis course. Same as Latin 110a-110b. Continuous through I and II, (1 unit).
 [120. THEOCRITUS.—I, (1 unit).]
 [125. PLATO.—II, (1 unit).]

LATIN

Courses for Undergraduates

NOTE: Students who have not taken Latin in high school should enroll in Latin 11a. Those who have completed two or three years of high-school Latin should register for Latin 6; those who have completed four years, for Latin 12a. The full sequence of undergraduate courses in Latin literature is the following: Latin 6, 1b, 12a, 12b, 3, 4, 21 or 23, 22 or 24; in Latin composition: Latin 5a, 5b, and 10.

Knowledge of Latin is not required in course 13.

See also Greek 15, 16, and 18a-18b.

- [1a. OVID.—I, (4). *Prerequisite*: Two or three entrance units in Latin, or Latin 11b, or Latin 6.]
 1b. VERGIL.—II, (4). *Prerequisite*: Three entrance units in Latin, or Latin 6, or 1a.
 3. LUCRETIOUS AND HORACE (*Odes*).—I, (3). *Prerequisite*: Latin 12a-12b, or equivalent.
 4. HORACE (*Satires*) AND VERGIL (*Ecloques* and *Georgics*).—S and II, (3). *Prerequisite*: Latin 12a-12b, or equivalent.
 5a-5b. LATIN COMPOSITION.—Grammatical drill and practice in the simpler forms of expression. Required of those receiving the recommendation of the department as teachers. Continuous through I and II, (2). *Prerequisite*: Three entrance units in Latin, or registration in Latin 6. (5b not given in 1946-1947.)
 6. INTERMEDIATE LATIN.—S, (2); I, (4). *Prerequisite*: Two entrance units in Latin, or Latin 11a-11b.
 11a-11b. ELEMENTARY LATIN.—Continuous through I and II, (4). Seniors receive only three hours credit.
 12a. PLAUTUS, TERENCE, CATULLUS.—I, (4). *Prerequisite*: Four entrance units in Latin, or Latin 1a-1b.
 12b. SALLUST AND CICERO (*De Senectute*).—II, (4). *Prerequisite*: Four entrance units in Latin, or Latin 1a-1b.
 13. ROMAN PRIVATE LIFE.—Social organization, marriage, education, amusements. Lectures (illustrated) and readings. II, (1). *Prerequisite*: Sophomore standing.
 S20. MYTHOLOGY OF GREECE AND ROME.—Lectures and readings. S, (2). *Prerequisite*: Sophomore standing.

Courses for Advanced Undergraduates

- 30a-30b. HONORS COURSE.—Thesis or a special course of study approved by the department. Continuous through I and II, (2). *Prerequisite*: Senior standing; fourteen hours of Latin acceptable for a major.

Courses for Advanced Undergraduates and Graduates

10. LATIN COMPOSITION.—Required of those receiving the recommendation of the department as teachers. II, (2). *Prerequisite*: Twelve hours of Latin acceptable for a major, including Latin 5a-5b, or equivalent.
 21. TACITUS (*Annales*) AND JUVENAL.—I, (3). *Prerequisite*: Twelve hours of Latin acceptable for a major.
 22. MARTIAL, SUETONIUS, AND APULEIUS.—II, (3). *Prerequisite*: Twelve hours of Latin acceptable for a major.
 [23. LIVY, TIBULLUS, AND PROPERTIUS.—I, (3). *Prerequisite*: Twelve hours of Latin acceptable for a major.]
 [24. OVID (*Elegy*) AND SENECA (*Epistles*).—II, (3). *Prerequisite*: Twelve hours of Latin acceptable for a major.]

Courses for Graduates

NOTE: Students desiring to do graduate work in Latin should have at least three years of college Latin or the equivalent. A reading knowledge of French and German is important. Some acquaintance with Greek is desirable, and the study of history and philosophy is especially recommended.

102. ROMAN ORATORY.—I, (1 unit).
 [104. PALAEOGRAPHY.—I, (1 unit).]
 [106. TERENCE.—II, (1 unit).]
 [109. VERGIL.—S, (1 unit).]
 110a-110b. BIBLIOGRAPHY AND CRITICISM.—Thesis course. Same as Greek 110a-110b. S, and continuous through I and II, (1 unit).
 114. CAESAR.—S, (1 unit).
 116. LATIN SATIRE.—II, (1 unit).
 118. LATIN ROMANCE.—I, (1 unit).
 [119. Suetonius.—II, (1 unit).]
 S127. LUCAN.—S, (1 unit).
 [150. CICERO'S LETTERS.—I, (1 unit).]

DAIRY HUSBANDRY

Courses for Undergraduates

1. CHEMICAL CONTROL METHODS FOR DAIRY PLANTS.—Lectures, recitations, problems, and laboratory. S, I, and II, (3). *Prerequisite:* Chemistry 1.
 2a. DAIRY CATTLE BREEDING AND FEEDING.—Lectures, recitations, and problems. S, I, and II, (3). *Prerequisite:* Dairy Husbandry 24a and sophomore standing, or junior standing.
 2b. DAIRY CATTLE JUDGING.—Lectures, recitations, and laboratory. S, I, and II, (2). *Prerequisite:* Dairy Husbandry 24a, or junior standing.
 †9. DAIRY PRODUCTS JUDGING.—Judging market grades of dairy products. II, (2). *Prerequisite:* Dairy Husbandry 24b.
 11. GENERAL DAIRY BACTERIOLOGY.—Bacterial flora of milk and milk products; milk sanitation. S and II, (2). *Prerequisite:* Sophomore standing; Bacteriology 5a and 5b.
 12. GENERAL DAIRY BACTERIOLOGY.—Contamination and control; pure culture study. S and II, (3). *Prerequisite:* Dairy Husbandry 11, or registration therein.
 24a. INTRODUCTION TO DAIRY PRODUCTION.—Survey of the industry; breeds of dairy cattle; selection, feeding, and management of herds. Lecture, quiz, and laboratory. I and II, (3). Juniors and seniors receive only two hours credit.
 24b. INTRODUCTION TO DAIRY TECHNOLOGY.—I and II, (3). Juniors and seniors receive only two hours credit.
 [33. DAIRY PRODUCTION.—For students specializing in the teaching of vocational agriculture. I, (2). *Prerequisite:* Dairy Husbandry 24a; junior standing.]

Courses for Advanced Undergraduates and Graduates

- †4. ICE CREAM MANUFACTURE.—I, (3). *Prerequisite:* Dairy Husbandry 1, 11, and 12.
 [5. COMPOSITION OF DAIRY PRODUCTS.—II, (3). *Prerequisite:* Chemistry 32; junior standing.]
 †7. CREAMERY BUTTERMILK AND FACTORY MANAGEMENT.—II, (3). *Prerequisite:* Dairy Husbandry 1, 11, and 12.
 †8. FLUID MILK PLANT OPERATIONS.—Production, transportation, processing, plant management, and distribution of milk. II, (3). *Prerequisite:* Dairy Husbandry 1, 11, and 12; junior standing.
 10. ADVANCED DAIRY BACTERIOLOGY.—Bacteriology of milk and milk products. I, (4). *Prerequisite:* Bacteriology 5a and 5b; junior standing.
 †14. MILK CONDENSING.—Manufacturing condensed milk and milk powder. II, (3). *Prerequisite:* Dairy Husbandry 1, 11, and 12; junior standing.
 17. ADVANCED STUDY OF DAIRY BREEDS.—I, (3). *Prerequisite:* Dairy Husbandry 2a; junior standing.
 20. PROBLEMS IN DAIRY FARMING.—Dairy farm management, including field and building arrangement, cropping systems, herd management, sanitary milk production, and farm marketing problems. Recitations, problems, assigned readings. S and I, (3). *Prerequisite:* Dairy Husbandry 24a, 2a, 2b; junior standing.
 †22. CHEESE MANUFACTURE.—I, (3). *Prerequisite:* Dairy Husbandry 1, 11, and 12.

† All students specializing in dairy manufactures are expected to make an inspection trip in either the junior or senior year. The trip covers dairy manufacturing plants and wholesale markets. Expenses are about \$20-\$25.

25. ADVANCED STUDY OF DAIRY CATTLE FEEDING.—S, (2). *Prerequisite:* Dairy Husbandry 2a; junior standing.
27. SPECIAL PROBLEMS.—I and II, (5). *Prerequisite:* Senior standing; approval of head of department.
32. PLANT MANAGEMENT.—II, (3). *Prerequisite:* Junior standing in dairy technology.

Courses for Graduates

NOTE: Candidates for advanced degrees in dairy husbandry must have had adequate undergraduate training in dairy husbandry and should have had courses in the following subjects, depending on the field of specialization: bacteriology, chemistry, economics, genetics, mathematics, physics, and zoology.

Dairy husbandry may be elected as a major subject for the M.S. or Ph.D. degree. For either degree, a first minor must be taken outside the department, preferably outside the college; if a second minor is elected, it may be chosen in the department.

101. ECONOMIC MILK PRODUCTION.—S and II, ($\frac{1}{2}$ to 2 units).
105. DAIRY MANUFACTURES.—S, I, and II, ($\frac{1}{2}$ to 2 units).
106. DAIRY BACTERIOLOGY.—Assigned problems. S, I, and II, ($\frac{1}{2}$ to 2 units).
107. DAIRY CHEMISTRY.—Assigned problems. I and II, ($\frac{1}{2}$ to 2 units).
108. PHYSIOLOGY OF LACTATION.—II, ($\frac{1}{2}$ to 2 units).
112. RESEARCH.—Work may be taken in the following subjects: (a) dairy bacteriology, (b) dairy chemistry, (c) dairy cattle breeding, (d) dairy cattle feeding, (e) dairy production, (f) dairy manufactures. Graduate students writing a thesis should so indicate when registering. S, I, and II, (1 to 4 units).
113. SEMINAR.—Current literature in dairy bacteriology, dairy chemistry, and dairy manufactures. S, ($\frac{1}{2}$ unit).
- [114. SEMINAR.—Current literature relating to various phases of milk production. I and II, ($\frac{1}{2}$ unit).]
115. PRINCIPLES OF DAIRY TECHNOLOGY.—Physical chemical study of milk and milk products. I, (1 unit).

DIVISION OF GENERAL STUDIES (L.A.S.)

Courses for Undergraduates

NOTE: Each course listed below, except 1a-1b, meets the general education requirement in the College of Liberal Arts and Sciences. Course 1a meets the University requirement for Rhetoric 1, and 1b the University requirement for Rhetoric 2.

- 1a-1b. VERBAL EXPRESSION.—Oral and written communication. I and II, (4). *Prerequisite:* A passing grade on the Rhetoric 1 placement examination, or a passing grade in Rhetoric 0.
- 2a-2b. HISTORY OF CIVILIZATION.—Survey of the social, economic, political, and intellectual life of the Western World from the earliest times to the present. I and II, (4).
- 3a-3b. GENERAL BIOLOGY.—Introduction to the biological sciences, their aims, content, and methods, with especial reference to their application to human life and civilization. I and II, (4).
- 4a-4b. PHYSICAL SCIENCE.—Survey of the sciences of astronomy, physics, chemistry, and geology; their importance in a scientific age and their influence on modern life. I and II, (4).
- 5a-5b. SOCIAL SCIENCE.—Organization of the major social groups in which an individual in contemporary America finds himself involved; resources; social relations; institutions and institutional change; dominant contemporary issues. I and II, (4). *Prerequisite:* Sophomore standing.
- 6a-6b. LITERATURE AND FINE ARTS.—Introduction to the general principles of art by analysis of selected works of literature, music, painting, sculpture, and architecture. I and II, (4). *Prerequisite:* Sophomore standing.
- [7a-7b. PSYCHOLOGY AND PHILOSOPHY.—Investigation of the essential elements of action; analysis of the individual's capacities to think and to act; discussion of a pattern for integrating the fields of knowledge. I and II, (4).]

ECONOMICS

Requirements for L.A.S. Students

Major: For students in the College of Liberal Arts and Sciences, 20 hours made up of Economics 1 and other courses in economics for which it is a prerequisite.

Minors: 20 hours in any one or two of the following subjects: geography, geology, history, mathematics, philosophy, political science, psychology, social welfare administration, and sociology. At least eight hours must be taken in each subject, if two are chosen. The curriculum on international affairs will be accepted as a minor.

Courses for Undergraduates

NOTE: Economics 1 is the fundamental course in economics and is prerequisite for most of the advanced courses. Students expecting to do advanced work in economics should take Economics 1 in their sophomore year.

Economics 2, though open to all students who have had one year of university work, is primarily for students in the Colleges of Agriculture and Engineering and in courses in home economics, chemistry, and other sciences.

1. PRINCIPLES OF ECONOMICS.—Value, price, money, exchange, distribution, consumption, and other fundamental concepts. S, I, and II, (5). *Prerequisite:* One year of university work.
2. ELEMENTS OF ECONOMICS.—A briefer presentation of the matter covered in Economics 1. For non-commerce students. S, I, and II, (3). *Prerequisite:* One year of university work.
22. ECONOMIC HISTORY OF THE UNITED STATES.—Explorations and settlements; colonization; growth of industry, agriculture, commerce, transportation, and labor. Open to freshmen only. S and I, (3).
27. INTRODUCTION TO BUSINESS.—Survey of principles and practices, from the point of view of the business manager. Open to freshmen who have had one semester of university work. I and II, (3).
70. ELEMENTS OF STATISTICS.—Methods of collection, presentation, and interpretation of quantitative economic data; averages, dispersion, index numbers, time series analysis, and simple correlation. S, I, and II, (3). *Prerequisite:* Economics 1 or 2; sophomore standing.

Courses for Advanced Undergraduates

- [35. CORPORATION FINANCE.—For non-commerce students. I, (3). *Prerequisite:* Economics 1 or 2.]
- 90a-90b. HONORS COURSE.—Senior candidates for graduation with honors or high honors should elect one or the other of the following options: Option A—an acceptable thesis in economics. Option B—a comprehensive examination, six hours in length, covering a review of various aspects of economics. I and II, (2 to 4).
- 91a-91b. INDEPENDENT STUDY.—Seniors registered in the College of Commerce and Business Administration who were awarded class or college honors in their junior year may do independent study for a total of not more than ten semester hours in this department or sixteen semester hours if divided between this department and any other department. S (91a only), I, and II, (3 to 5).

Courses for Advanced Undergraduates and Graduates

NOTE: Courses in economics may be grouped in several rather distinct fields in which students may find it profitable to concentrate in their junior and senior years. The following fields are suggested: economic theory, history, and statistics; public and private finance, including insurance; labor; foreign trade; public utilities and transportation.

3. MONEY, CREDIT, AND BANKING.—S, I, and II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
- [5. FINANCIAL HISTORY OF THE UNITED STATES.—I, (3). *Prerequisite:* Economics 1 or 2; junior standing.]
6. PRINCIPLES AND PRACTICES OF INVESTMENT BANKING.—I, (3). *Prerequisite:* Economics 3; junior standing.

- [8. MONEY, PRICES, AND FOREIGN EXCHANGES.—II, (3). *Prerequisite*: Economics 3; junior standing.]
9. COMPARATIVE BANKING SYSTEMS AND PRACTICES.—Banking practice in the United States. II, (3). *Prerequisite*: Economics 3; junior standing.
10. CORPORATION FINANCE AND MANAGEMENT.—Corporations, their promotion and organization; capital and capitalization; working capital and income administration; operating and dividend policy; expansion, reorganization, and consolidation. S, I, and II, (3). *Prerequisite*: Economics 1; Accountancy 1a and 1b; junior standing.
11. INDUSTRIAL CONSOLIDATION.—Growth of monopoly; monopoly prices and methods; effect of trusts on prices, wages, interest, and profits of monopolies; control of trusts. II, (3). *Prerequisite*: Economics 10.
15. CONSUMER ECONOMICS.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
19. ECONOMIC DEVELOPMENT OF THE UNITED STATES BEFORE 1860.—I, (3). *Prerequisite*: Economics 1 or 2; junior standing.
20. ECONOMIC DEVELOPMENT OF THE UNITED STATES SINCE 1860.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
23. CURRENT ECONOMIC PROBLEMS (NATIONAL AND INTERNATIONAL).—A survey of the important economic problems arising from the prosecution of the war such as the role of money and banking, methods of finance, priorities, price control, labor, transportation, and international trade. S, I, and II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
- [24. ECONOMIC DEVELOPMENT OF MODERN EUROPE, I.—I, (3). *Prerequisite*: Economics 1 or 2; junior standing.]
- [25. ECONOMIC DEVELOPMENT OF MODERN EUROPE, II.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.]
29. FOREIGN COMMERCE AND COMMERCIAL POLICIES.—International trade relations and attempts to solve them; changes in theories and in policies; customs tariffs, commercial treaties, export trade. II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
- [30. WORLD MARKETS.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.]
31. ORGANIZATION OF INTERNATIONAL COMMERCE.—Exporting and importing; foreign trade-promoting institutions; financing shipments. I, (3). *Prerequisite*: Economics 1 or 2; junior standing.
36. INVESTMENTS.—Nature of saving, investment, and speculation; forms of investment; institutions for facilitating investment. II, (3). *Prerequisite*: Economics 10; senior standing.
39. ECONOMICS OF SOCIAL SECURITY.—I, (3). *Prerequisite*: Economics 1 or 2; junior standing.
40. LABOR AND THE LAW.—II, (3). *Prerequisite*: Economics 41.
41. LABOR PROBLEMS.—Economic, legal, and social position of the wage-earner; risks and uncertainties of the worker; problems involved in marketing his labor. S, I, and II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
- [42. TRADE UNIONISM.—History, purposes, problems, and activities of labor movements in the United States and Great Britain. II, (3). *Prerequisite*: Economics 1 or 2; junior standing.]
43. PERSONNEL ADMINISTRATION.—Management and the problems of labor administration; job analysis; labor turnover; selection, training, promotion, transfer, and dismissal of workers; wage systems and financial incentives; industrial accidents; employee representation plans; collective bargaining and recent legislation. S, I, and II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
44. COMPARATIVE ECONOMIC SYSTEMS.—Economics of capitalism, socialism, communism, and fascism. S, I, and II, (3). *Prerequisite*: Economics 1 or 2; senior standing.
51. PUBLIC FINANCE.—Public expenditures, financial administration, taxation, public debts. I and II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
52. FISCAL SYSTEM OF ILLINOIS.—I and II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
- [54. ECONOMICS OF INSURANCE.—An analysis of the economic principles which underlie insurance. I, (3). *Prerequisite*: Economics 1 or 2; junior standing.]
55. LIFE INSURANCE.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.
56. PROPERTY INSURANCE.—II, (3). *Prerequisite*: Economics 1 or 2; junior standing.

61. ECONOMIC THEORY.—Leading economic theories, particularly value and distribution. I, (3). *Prerequisite:* Economics 1 or 2; senior standing.
62. HISTORY OF ECONOMIC THOUGHT.—A survey of the principles advocated by the different schools of economic thought. II, (3). *Prerequisite:* Economics 1 or 2; senior standing.
- [65. SOCIAL CONTROL OF BUSINESS.—I, (3). *Prerequisite:* Economics 1 or 2; junior standing.]
71. BUSINESS STATISTICS.—Analysis of business data through the use of statistical methods. The normal curve and sampling; construction and use of special purpose index numbers; analysis of changing seasonal factors; curvilinear trend analysis; multiple and partial correlation, with special reference to market analysis. I, (3). *Prerequisite:* Economics 1 or 2, and 70; junior standing.
72. BUSINESS BAROMETRICS.—Analysis of types of variation in individual industry series and the economy as a whole; use of various indicators of economic conditions. II, (3). *Prerequisite:* Economics 70 and 71.
- [81. ECONOMICS OF PUBLIC UTILITIES.—I, (3). *Prerequisite:* Economics 1 or 2; junior standing.]
- [82. REGULATION OF PUBLIC UTILITIES.—II, (3). *Prerequisite:* Economics 1 or 2, and 81.]
- [83. PUBLIC UTILITY RATES.—II, (3). *Prerequisite:* Economics 1 or 2; junior standing.]
92. ECONOMICS OF TRANSPORTATION.—Economics of the railroad industry and of other transportation agencies; problems of regulation. I and II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
93. INDUSTRIAL TRAFFIC MANAGEMENT.—II, (3). *Prerequisite:* Economics 1 or 2; junior standing.
95. ECONOMIC PROBLEMS OF AIR TRANSPORTATION.—I, (3). *Prerequisite:* Economics 1 or 2; junior standing.
- [96. CURRENT TRANSPORTATION PROBLEMS.—II, (3). *Prerequisite:* Economics 92 or 95, or consent of instructor.]

Courses for Graduates

NOTE: Students who wish to make economics their major subject for an advanced degree must have had at least 27 hours of undergraduate work in social science, 15 of which must have been in economics; the work in economics must include a course in principles of economics, a course in statistics, and other courses for which the course in principles is a prerequisite. Students in other departments who wish to take a minor in economics must have had at least twelve hours in social science, eight hours of which must have been in economics, consisting of a course in principles of economics and other courses for which the course in principles is a prerequisite. Students who can not meet these requirements may register for graduate work but, unless specially exempted for reasons satisfactory to the adviser in charge, must remove any deficiencies during the first year of residence by taking prescribed courses without graduate credit.

A first-year student whose major is economics must take either Economics 101 or 103 throughout the year. If a minor is taken outside the department, two units of work will ordinarily be required. Undergraduate courses that are approved for graduate credit may be taken in lieu of graduate courses but not to exceed a total credit of two units.

A student who wishes to become a candidate for the Ph.D. degree with a major in economics must pass a preliminary examination showing: (1) a detailed knowledge of economic theory and its history; (2) a detailed knowledge of certain special fields of economics or allied fields, the number and selection of which is to be determined by the adviser in consultation with the student; and (3) a general acquaintance with the subject matter and bibliography of other branches of economics. In the work offered in some related field outside the department the student will be expected to satisfy the examiners as to his proficiency in that subject.

A student who chooses economics as a minor for the Ph.D. degree must take at least two units of work in this department.

101. ECONOMIC THEORY.—For students whose minor is economics and other students who have had only the minimum preparation for graduate study in economics. S, I, and II, (1 unit).
102. MONETARY THEORY AND HISTORY.—I and II, (1 unit).

- [103. ECONOMIC THEORY.—For students whose major is economics and others who have had a thorough training in economics. I, (1 unit).]
- [104a. THEORIES AND POLICIES OF INTERNATIONAL COMMERCE.—I, (1 unit).]
- [104b. THEORIES AND POLICIES OF INTERNATIONAL TRADE.—II, (1 unit).]
105. PUBLIC FINANCE.—I and II, (1 unit).
- [109. THEORY AND PRACTICE OF CENTRAL BANKS.—I and II, (1 unit).]
110. CORPORATION FINANCE.—I and II, (1 unit).
112. LABOR PROBLEMS.—I and II, (1 unit).
118. SEMINAR.—Thesis course. All graduate students writing theses in economics must register in this course; registration for other students is optional. S, I, and II, ($\frac{1}{2}$ to 4 units).
120. HISTORY OF ECONOMIC THOUGHT.—Evolution of economic thought from early times to the present. S, I, and II, (1 unit).
122. ECONOMIC HISTORY OF THE UNITED STATES.—I and II, (1 unit).
123. INDUSTRIAL AND FINANCIAL ORGANIZATION OF SOCIETY.—S, I, and II, (1 unit).
- S127. CONTEMPORARY ECONOMIC PROBLEMS AND LITERATURE.—S, (1 unit).
- [136. INVESTMENTS.—I and II, (1 unit).]
- [140. COMPARATIVE ECONOMIC SYSTEMS.—I, (1 unit).]
- [165. SOCIAL CONTROL OF BUSINESS.—I and II, (1 unit).]
170. ECONOMIC STATISTICS.—I and II, (1 unit).
192. ECONOMICS OF TRANSPORTATION.—I and II, (1 unit).

EDUCATION

(Including Agricultural and Industrial Education)

Introductory Courses

1. THE AMERICAN PUBLIC SCHOOL.—Introduction to the study of education. Required of all students who apply for the teacher's certificate in Illinois after September 1, 1945. S, I, and II, (2). *Prerequisite:* Sophomore standing.
25. EDUCATIONAL PSYCHOLOGY.—S, I, and II, (3). *Prerequisite:* Psychology 1.

Courses for Advanced Undergraduates

2. HISTORY OF EDUCATION.—S, I, and II, (3). *Prerequisite:* Junior standing.
5. COMPARATIVE EDUCATION.—I and II, (3). *Prerequisite:* Junior standing.
- 6a. PRINCIPLES OF ELEMENTARY EDUCATION.—S, I, and II, (3). *Prerequisite:* Education 25.
- 6b. PRINCIPLES OF SECONDARY EDUCATION.—S, I, and II, (3). *Prerequisite:* Education 25.
- 10a. TECHNIC OF TEACHING IN THE ELEMENTARY SCHOOL.—S, I, and II, (3). *Prerequisite:* Education 25 and 6a; concurrent registration in Educational Practice 25 or 34.
- 10b. TECHNIC OF TEACHING IN THE SECONDARY SCHOOL.—S, I, and II, (3). *Prerequisite:* Education 6; concurrent registration in Educational Practice. Students concurrently registered in Educational Practice 8, 11, 11a, 15, 27, 29, or 32 receive four hours credit.
- 10c. TECHNIC OF TEACHING MENTALLY RETARDED CHILDREN.—Technic of teaching the mentally handicapped; consideration of a suitable type of education for the mentally handicapped. S, (2). *Prerequisite:* Consent of instructor.

Courses in Educational Practice

The following courses in practice teaching are given in both semesters and are open to seniors in the University who have credit for Education 6. A scholastic average of 3.5 is required for admission to these courses. Courses 5 (Agricultural Education) and 14 (Home Economics Education) are offered in schools outside Urbana and Champaign.

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| 1. PHYSICAL EDUCATION FOR MEN.—(2 to 4). | 6. BIOLOGY.—(5). |
| 2. PHYSICAL EDUCATION FOR MEN.—(2 to 4). | 7. CHEMISTRY.—(5). |
| 3. PHYSICAL EDUCATION FOR WOMEN.—(3). | 8. CIVICS.—(5). |
| 4. PHYSICAL EDUCATION FOR WOMEN.—(3). | 9. DRAWING, ART.—(5). |
| 5. AGRICULTURAL EDUCATION.—(3 to 5). | 11. ENGLISH.—(5). |

- 11a. SPEECH.—(5).
 12. FRENCH.—(5).
 13. GENERAL SCIENCE.—(5).
 14. HOME ECONOMICS EDUCATION.—(5).
 15. HISTORY.—(5).
 16. INDUSTRIAL EDUCATION.—(5).
 17. LATIN.—(5).
 19. MATHEMATICS.—(5).
 20a. MUSIC IN THE ELEMENTARY SCHOOL.—(2).
 20b. MUSIC IN THE SECONDARY SCHOOL.—(3).
 21. PHYSICS.—(5).
 23. SPANISH.—(5).
 24. STENOGRAPHY AND TYPEWRITING.—(5).
 25. ELEMENTARY EDUCATION.—(5).
 26. BOOKKEEPING.—(5).
 27. ECONOMICS.—(5).
 28. GERMAN.—(5).
 29. GEOGRAPHY.—(5).
 32. SOCIOLOGY.—(5).
 34. MENTALLY RETARDED.—(2 to 5).
 35a. SPEECH CORRECTION.—(1 to 3).
 35b. SPEECH CORRECTION.—(1 to 3).

Courses for Advanced Undergraduates (continued)

- [S22. VISUAL AND AUDITORY INSTRUCTIONAL AIDS.—S, (2). *Prerequisite:* Senior standing, experience in teaching, or consent of instructor.]
 69. PRINCIPLES AND METHODS IN REMEDIAL READING.—I and II, (3). *Prerequisite:* Education 25; junior standing.
 99a-99b. THESIS.—S, I, and II, (2). *Prerequisite:* Senior standing.

Related Courses in the Teaching of Special Subjects

NOTE: For courses for librarians and teacher-librarians, see Library Science 7, Reading Guidance in Adolescent Literature (4); Library Science 8, Reading Guidance in Children's Literature (4); and Library Science 9, School Library Management (4). *Prerequisite:* Junior standing.

The following courses given by departments not in the College of Education may be presented as meeting in part the requirements for the twenty hours in education for graduation, for the sixteen hours in education for the State High School Certificate, or for the hours in education necessary as a qualification for teachers in the North Central Association accredited schools.

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| Art 10a.—(2). | History 18.—(2). | P.E. for Men 18.—(3). |
| Art 10b.—(2). | Home Economics 11.—(3). | P.E. for Men 73.—(3). |
| Botany 36.—(3). | Home Economics 56.—(3). | P.E. for Men 74.—(3). |
| Chemistry 94b.—(2). | Journalism 47.—(3). | P.E. for Women 95a.—(4). |
| English 41.—(2). | Latin 9.—(2). | P.E. for Women 95b.—(4). |
| English 42.—(2). | Mathematics 35.—(3). | Psychology 16.—(3). |
| French 25.—(3). | Music 25.—(2). | Psychology 21.—(3). |
| Geography S9.—(2½). | Music 26.—(2). | Spanish 25.—(3). |
| German 25.—(2). | Music 27.—(2). | Speech 12.—(2). |
| | Physical Education 71.—(2). | Zoology 36.—(2). |

Courses for Advanced Undergraduates and Graduates

- [11. ANCIENT AND MEDIEVAL EDUCATION.—II, (2). *Prerequisite:* Senior standing, or Education 2 or 30.]
 [18. EDUCATIONAL MEASUREMENTS.—I, (3). *Prerequisite:* Education 25.]
 30. HISTORY OF AMERICAN EDUCATION.—S, (2); I and II, (3). *Prerequisite:* Senior standing, or Education 2 or 11.
 41. PRINCIPLES OF VOCATIONAL EDUCATION.—Same as Industrial Education 41. S, I, and II, (3). *Prerequisite:* Senior standing.
 42. EDUCATION OF HANDICAPPED CHILDREN.—S and II, (3). *Prerequisite:* Senior standing, or consent of instructor.
 [43. MENTAL TESTS (GENERAL PRINCIPLES AND GROUP TESTING).—II, (3). *Prerequisite:* Education 25; junior standing.]
 [46. RECENT DEVELOPMENTS IN THE TEACHING OF ELEMENTARY SCHOOL SUBJECTS.—I, (3). *Prerequisite:* Senior standing.]
 [47. IMPROVEMENT OF INSTRUCTION IN ELEMENTARY SCHOOL SUBJECTS.—S and I, (3). *Prerequisite:* Education 6a or 6b; junior standing.]
 [52. PART-TIME AND EVENING SCHOOLS.—Same as Industrial Education 52. I, (3). *Prerequisite:* Junior standing.]

53. PROBLEMS OF INDUSTRIAL EDUCATION.—Same as Industrial Education 53. II, (3).
Prerequisite: Junior standing, or consent of instructor.
55. PRINCIPLES AND PRACTICES IN VOCATIONAL GUIDANCE.—Same as Industrial Education 55. I and II, (3). *Prerequisite:* Senior standing.
- S60. CURRICULUM PROBLEMS AND TRENDS IN HIGH SCHOOL ENGLISH.—S, (2). *Prerequisite:* Secondary school teaching, supervisory or administrative experience in English, or consent of instructor.
- [S61. CURRICULUM PROBLEMS AND TRENDS IN HIGH SCHOOL SOCIAL STUDIES.—S, (2).
Prerequisite: Secondary school teaching, supervisory or administrative experience in the social studies, or consent of instructor.]
64. CHILD DEVELOPMENT AND PROBLEMS IN EDUCATION.—I, (3). *Prerequisite:* Junior standing; Education 25.
66. SOCIOLOGY OF EDUCATION.—Same as Sociology 80. II, (3). *Prerequisite:* Sociology 1; junior standing.
- S68. CURRICULUM PROBLEMS AND TRENDS IN ART EDUCATION.—S, (2). *Prerequisite:* Undergraduate major in art education, or experience as teacher or supervisor of art in either elementary or secondary schools, or consent of instructor.

Courses for Graduates

NOTE: In addition to complying with the general rules of the Graduate School, candidates for the degree of Master of Arts or Master of Science in Education must meet the following requirements: (1) Students who began their graduate work in the summer of 1941, or thereafter, must select and follow an approved curriculum and consult with a designated adviser for that curriculum in planning their programs. (2) Education 6 and 25, or their equivalents, are prerequisites for all graduate courses. (3) Education 125 is a required course for all students. (4) For students who began their graduate work prior to the summer of 1940 and have not taken an undergraduate or graduate course in the history of education, Education 11 or 30 is required. Those who began their work under this requirement may elect to finish under the following requirement. (5) For all students who began their graduate work in the summer of 1940, or thereafter, there is required a graduate course in either the history of education or the philosophy of education.

Programs leading to the professional degrees of Master of Education (Ed.M.) and Doctor of Education (Ed.D.) are now offered, with requirements as follows: A minimum of two years of approved professional experience and the completion of the requirement for the degree of Master of Arts or Master of Science, or the equivalent, is required for admission to the curriculum leading to the degree of Master of Education. In addition, the candidate must be recommended by the college committee on admission of graduate students in education as showing promise of superior professional competence. One year of graduate study (8 units) is required for the degree.

The requirements for the degree of Doctor of Education include: (1) graduate residence equivalent to two full years beyond the degree of Master of Arts or Master of Science (one full year beyond the degree of Master of Education), and (2) a field study or other type of professional investigation. In a typical case the candidate who is employed in professional work during the school year will devote a minimum of three summer sessions and two academic years to the field study or the professional investigation.

101. PHILOSOPHY OF EDUCATION.—Philosophical basis of educational theory. S, I, and II, (1 unit).
- [102. RESEARCH IN THE HISTORY OF EDUCATION.—I and II, (1 unit).]
- [S103. SCHOOL LAW.—S, (1 unit).]
104. EDUCATIONAL ADMINISTRATION.—S and I, (1 unit).
105. ELEMENTARY SCHOOL ORGANIZATION AND ADMINISTRATION.—S and I, (1 unit).
106. ADMINISTRATION OF JUNIOR AND SENIOR HIGH SCHOOLS.—S and I, (1 unit).
- [S107. PUBLIC SCHOOL BUILDINGS.—S, (1 unit).]
109. PSYCHOLOGY OF ADOLESCENCE FOR TEACHERS.—II, (1 unit).
- [110. RECENT RESEARCH IN THE TEACHING OF HIGH SCHOOL SUBJECTS.—S, (1 unit).]
- [S111. PROBLEMS OF RURAL EDUCATION.—S, (½ unit).]
112. SUPERVISION OF HOME ECONOMICS EDUCATION.—S and I, (1 unit).
114. CURRICULUM PROBLEMS AND TRENDS IN HOME ECONOMICS EDUCATION.—S and I, (1 unit).

- [115. EDUCATION AND THE PROBLEMS OF PERSONALITY.—II, (1 unit).]
 116. SEMINAR IN HOME ECONOMICS EDUCATION.—I and II, (1 unit).
 [S117. ADULT EDUCATION.—S, (1 unit).]
 [S118. BEHAVIOR PROBLEMS OF SCHOOL CHILDREN.—S, (1 unit).]
 119. TRENDS AND TECHNIQS IN CURRICULUM MAKING.—I, (1 unit).
 120. SUPERVISION OF JUNIOR AND SENIOR HIGH SCHOOLS.—S and II, (1 unit).
 121. EDUCATIONAL MEASUREMENTS.—S, I, and II, (1 unit).
 122. EDUCATIONAL AND VOCATIONAL GUIDANCE.—S, I, and II, (1 unit).
 123. EDUCATIONAL STATISTICS.—S, I, and II, (1 unit).
 124. TECHNIQS IN EDUCATIONAL RESEARCH.—S and II, (1 unit).
 125. ADVANCED EDUCATIONAL PSYCHOLOGY.—S, I, and II, (1 unit).
 [S126. ADMINISTRATION AND SUPERVISION OF VOCATIONAL EDUCATION.—S, (1 unit).]
 127. CURRICULUM DEVELOPMENT IN SECONDARY SCHOOLS.—S and II, (1 unit).
 129. JUNIOR COLLEGE.—S and II, (1 unit).
 134. CURRICULUM PROBLEMS AND TRENDS IN ELEMENTARY SCHOOL READING AND THE LANGUAGE ARTS.—S and II, (1 unit).
 135. CURRICULUM PROBLEMS AND TRENDS IN ELEMENTARY SCHOOL SOCIAL STUDIES.—S and I, (1 unit).
 136. DIAGNOSTIC AND REMEDIAL PROGRAMS OF THE SCHOOL.—S and I, (1 unit).
 [S137. CURRICULUM PROBLEMS AND TRENDS IN ELEMENTARY SCHOOL SCIENCE AND ARITHMETIC.—S, (1 unit).]
 138. SUPERVISION OF THE ELEMENTARY SCHOOL.—S and II, (1 unit).
 139. SEMINAR IN CURRICULUM PROBLEMS.—S and II, (1 unit).
 [S142. SEMINAR IN WARTIME PROBLEMS AND TRENDS OF DISTRIBUTIVE EDUCATION.—S, (1 unit).]
 150. THESIS.—Only students of superior scholarship are permitted to register in this course. The student must present in writing an outline describing the proposed thesis. This outline, when approved by the faculty member under whose direction the thesis is to be written, must be submitted to the dean of the college for his approval. S, I, and II, ($\frac{1}{2}$ to 2 units).
 170. PUBLIC SCHOOL FINANCE AND BUSINESS ADMINISTRATION.—S and II, (1 unit). *Prerequisite:* Education 104 or 106.
 175. THE HIGH SCHOOL PROGRAM OF AGRICULTURAL EDUCATION.—S and II, ($\frac{1}{2}$ unit).
 176. ADULT EDUCATION IN AGRICULTURE.—S and I, ($\frac{1}{2}$ unit).
 177. COMMUNITY PROGRAMS OF AGRICULTURAL EDUCATION.—For agricultural teachers, teacher-trainers, and supervisors and school administrators. II, (1 unit).
 178. SEMINAR IN AGRICULTURAL EDUCATION.—I, ($\frac{1}{2}$ unit). *Prerequisite:* Education 175, 176, and 177.
 180. SEMINAR IN ELEMENTARY EDUCATION.—S and II, (1 unit).
 S181. SEMINAR IN EDUCATIONAL AND VOCATIONAL GUIDANCE.—S, (1 unit).
 184. SEMINAR IN SCHOOL ADMINISTRATION.—S and II, (1 unit). *Prerequisite:* Three units of graduate work in education, including Education 104 or 106; consent of instructor.
 185. SEMINAR IN EDUCATIONAL PSYCHOLOGY.—S, I, and II, (1 unit). *Prerequisite:* Education 125; consent of instructor.
 186. SEMINAR IN SECONDARY EDUCATION.—S and I, (1 unit). *Prerequisite:* Education 106 or 120, or consent of instructor.
 187. SEMINAR IN INDUSTRIAL EDUCATION AND GUIDANCE.—S and I, (1 unit).
 188. CURRICULUM PROBLEMS AND TRENDS IN INDUSTRIAL EDUCATION.—S, I, and II, (1 unit).
 189. ADMINISTRATION AND SUPERVISION OF INDUSTRIAL EDUCATION.—S and II, (1 unit).
 190. RESEARCH IN EDUCATION.—Students who wish to register in this course are required to present in writing a proposal describing the research project which they wish to undertake. This proposal, when approved by the faculty member under whose direction the research is to be done, is then submitted to the dean of the college for his approval. S, I, and II, (1 unit). *Prerequisite:* Three units of graduate credit in education.
 [192. THE AMERICAN COLLEGE.—II, (1 unit).]
 [S193. PUBLIC RELATIONS OF THE SCHOOLS.—For experienced teachers and administrators. S, ($\frac{3}{4}$ to 1 unit).]
 200. EDUCATION AND THE INDIVIDUAL.—Open only to students who have been admitted to the curriculum for the Master of Education and Doctor of Education degrees. S and I, (1 unit).

201a-201b. THE SCHOOL AND SOCIETY.—Open only to students who have been admitted to candidacy for the degree of Master of Education or Doctor of Education and by special permission to approved advanced students who are candidates for the degree of Doctor of Philosophy in education. S, I, and II, (1 unit).

AGRICULTURAL EDUCATION

Courses for Undergraduates

1. INTRODUCTION TO AGRICULTURAL EDUCATION.—Field trips; estimated travel expense, \$2. I and II, (2). *Prerequisite:* Sophomore standing.
50. PRACTICE TEACHING IN AGRICULTURE.—Same as Educational Practice 5. S, (1 to 3); I and II, (5). *Prerequisite:* Senior standing; registration in Agricultural Education 51.
51. PROGRAMS AND PROCEDURES IN AGRICULTURAL EDUCATION.—Equivalent to Education 10. Required of vocational teachers. S, I, and II, (5). *Prerequisite:* Education 6; Agricultural Education 1; senior standing. Field trips required; estimated expense, \$5.

For Graduate Courses in Agricultural Education, see Education 175, 176, 177, 178.

INDUSTRIAL EDUCATION

Courses for Undergraduates

1. INDUSTRIAL ARTS.—First course in woodworking. S, I, and II, (4). Seniors receive only three hours credit.
2. INDUSTRIAL ARTS.—Advanced woodworking. S and II, (4).
3. INDUSTRIAL ARTS.—The general shop. S and II, (4). Seniors receive only three hours credit.
4. INDUSTRIAL ARTS.—Advanced bench metal. I, (4).

Related Courses in Special Subjects

The following courses given by departments not in the College of Education may be presented as meeting in part the requirements for the 32 hours in Industrial Education:

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|-------------------------------------|----------------------------------|
| Architecture 43.—(3). | Agricultural Engineering 3.—(3). |
| Architecture 44.—(3). | Journalism 4.—(2). |
| General Engineering Drawing 1.—(4). | Mechanical Engineering 81.—(3). |
| General Engineering Drawing 2.—(4). | Mechanical Engineering 85.—(3). |
| General Engineering Drawing 4.—(4). | Mechanical Engineering 88.—(3). |

Courses for Advanced Undergraduates and Graduates

41. PRINCIPLES OF VOCATIONAL EDUCATION.—Same as Education 41. I and II, (3). *Prerequisite:* Senior standing.
- [52. PART-TIME AND EVENING SCHOOLS.—Same as Education 52. I, (3). *Prerequisite:* Junior standing.]
53. PROBLEMS OF INDUSTRIAL EDUCATION.—Same as Education 53. II, (3). *Prerequisite:* Junior standing, or consent of instructor.
55. PRINCIPLES AND PRACTICES IN VOCATIONAL GUIDANCE.—Same as Education 55. I and II, (3). *Prerequisite:* Senior standing.
62. HISTORY AND ORGANIZATION IN INDUSTRIAL ARTS.—I and II, (3).

For Graduate Courses in Industrial Education, see Education 187, 188, 189.

Extramural Courses in Industrial Education

- E41. SURVEY OF VOCATIONAL EDUCATION.—Same as Industrial Education 41. I and II, (1 to 3).
- E51.¹ SPECIAL METHODS IN INDUSTRIAL EDUCATION.—I and II, (1 to 3).
- E52.¹ TEACHING RELATED TRADE SUBJECTS.—Same as Industrial Education 52. I and II, (1 to 3).

¹ Courses E51 and E52 satisfy the requirements of Methods of Teaching Industrial Subjects for the Limited State Vocational Certificate.

- E53. PROBLEMS OF INDUSTRIAL EDUCATION.—Same as Industrial Education 53. I and II, (1 to 3).
- E54. PROBLEMS AND METHODS OF THE PART-TIME SCHOOL.—I and II, (1 to 3).
- E54a. PROBLEMS AND METHODS OF THE PART-TIME SCHOOL.—Continuation of E54. I and II, (1 to 3).
- E55. PROBLEMS OF VOCATIONAL GUIDANCE.—Same as Industrial Education 55. I and II, (1 to 3).
- E55a. TESTS AND MEASUREMENTS IN INDUSTRIAL EDUCATION.—Continuation of E55. I and II, (1 to 3).
- E56.¹ TEACHING SHOPWORK.—I and II, (1 to 3). *Prerequisite:* Two years of trade or industrial experience beyond the apprenticeship; completion of high school curriculum.
- E56a.¹ TEACHING SHOPWORK.—Continuation of E56. Preparation of instructional material. I and II, (1 to 3).
- E58. PROBLEMS IN ADMINISTRATION AND SUPERVISION OF INDUSTRIAL EDUCATION.—II, (2 to 3).

ELECTRICAL ENGINEERING

Courses for Undergraduates

- 4a. DIRECT AND ALTERNATING CURRENT CIRCUITS AND MACHINES.—(Formerly E.E. 4). Fundamental principles of electrical circuits and machines. For students in agricultural, ceramic, civil, and mining engineering. S, I, and II, (2). *Prerequisite:* Physics 1a, 1b, 3a, 3b; Mathematics 8b or 9; registration in Electrical Engineering 4b.
- 4b. DIRECT AND ALTERNATING CIRCUITS AND MACHINES LABORATORY.—(Formerly E.E. 64). To accompany Electrical Engineering 4a. S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 4a.
- 5a. APPLICATIONS OF ELECTRICAL EQUIPMENT.—(Formerly E.E. 5). Applications of electricity for industrial uses. For students in ceramic and mining engineering. S, I, and II, (2). *Prerequisite:* Electrical Engineering 4a, 4b; registration in Electrical Engineering 5b.
- 5b. ELECTRICAL EQUIPMENT LABORATORY.—(Formerly E.E. 65). S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 5a.
- 5bN. ELECTRON TUBES AND CIRCUITS.—This course may be used as the equivalent of Electrical Engineering 50. S and I, (3). *Prerequisite:* Registration in Electrical Engineering 25.
- 6bN. ELECTRON TUBES AND CIRCUITS.—S, I, and II, (3). *Prerequisite:* Electrical Engineering 5bN.
- [10a. TRANSIT ENGINEERING.—For students in engineering departments other than Electrical. II, (3). *Prerequisite:* Electrical Engineering 4a, 11a, or 30a and 4b, 11b or 30b.]
- 11a. DIRECT AND ALTERNATING CURRENT CIRCUITS.—(Formerly E.E. 11). Fundamental electric and magnetic units, direct and alternating current circuit analysis, complex numbers and vector diagram solutions. For students in agricultural, chemical, general, and mechanical engineering and in industrial administration. S, I, and II, (3). *Prerequisite:* Physics 3a, 3b; Mathematics 8b or 9; registration in Electrical Engineering 11b.
- 11b. DIRECT AND ALTERNATING CURRENT LABORATORY.—(Formerly E.E. 61). Circuits. S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 11a.
- 12a. DIRECT AND ALTERNATING CURRENT APPARATUS.—(Formerly E.E. 12). Generators and motors, transformers, rectifiers and electronic devices. S, I, and II, (3). *Prerequisite:* Electrical Engineering 11a, 11b; registration in Electrical Engineering 12b.
- 12b. DIRECT AND ALTERNATING CURRENT LABORATORY.—(Formerly E.E. 62). Machines. S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 12a.
- 14a. WIRING AND ILLUMINATION.—Fundamentals of commercial and industrial illumination and wiring practice. S, I, and II, (3). Not open to students in electrical engineering. *Prerequisite:* Sophomore standing or permission of instructor.

¹ Courses E56 and E56a satisfy the requirements of Trade Analysis and Course Organization for the Limited State Vocational Certificate.

- 19a. ELECTRICAL EQUIPMENT FOR AIRCRAFT AND AIRPORTS.—II, (3). For students in Aeronautical Engineering. *Prerequisite*: Electrical Engineering 4a, 4b.
- 20a. ILLUMINATING ENGINEERING AND SECONDARY POWER DISTRIBUTION.—(Formerly E.E. 14). Fundamentals of illuminating engineering and lighting installation design; theory and design of branches, sub-feeders, and feeders for power and light distribution systems. S, I, and II, (3). Open only to students in electrical engineering. *Prerequisite*: Sophomore standing in electrical engineering.
- [21a. INTRODUCTION TO ELECTRODYNAMICS.—Study of units and relations in electrostatic, magnetostatic, and electromagnetic circuits; characteristics of circuit parameters singly and in combinations. S, I, and II, (3). *Prerequisite*: Physics 1a, 3a; Mathematics 7; registration in Physics 1b, 3b, Mathematics 9.]
- 30a. INTRODUCTION TO CIRCUIT ANALYSIS.—(Formerly E.E. 25). Detailed and analytical solution of periodic current circuits; special problems in alternating current networks including polyphase and coupled circuits; power and power measurement; wave analysis. S, I, and II, (4). *Prerequisite*: Electrical Engineering 21a; registration in Mathematics 19, 16, or 18; registration in Electrical Engineering 30b.
- 30b. CIRCUIT LABORATORY.—(Formerly E.E. 75). Study and analysis of direct and alternating current circuits by laboratory observations and technics. S, I, and II, (2). *Prerequisite*: Registration in Electrical Engineering 30a.
- 31b. MEASUREMENTS IN ELECTRICAL ENGINEERING.—(Formerly E.E. 9aN). Precise measurement of electrical quantities and the application of precise measurement methods to engineering problems. S, I, and II, (3). *Prerequisite*: Electrical Engineering 21 and 30a.
- 32a. ELECTRICAL MACHINERY.—Transformers, motors and generators, converters and electronic power equipment. For electrical engineering students selecting the options in communication and electronics or in illumination. II, (4). *Prerequisite*: Electrical Engineering 30a, 30b; registration in Electrical Engineering 32b.
- 32b. ELECTRICAL MACHINERY LABORATORY.—Laboratory to accompany Electrical Engineering 32a. II, (2). *Prerequisite*: Registration in Electrical Engineering 32a.
- 35a. ALTERNATING CURRENT APPARATUS.—(Formerly E.E. 35). Transformers and generators. For electrical engineering students selecting the option in power. S, I, and II, (4). *Prerequisite*: Electrical Engineering 30a, 30b; registration in Electrical Engineering 35b.
- 35b. ALTERNATING CURRENT APPARATUS LABORATORY.—(Formerly E.E. 85). Laboratory to accompany Electrical Engineering 35a. S, I, and II, (2). *Prerequisite*: Registration in Electrical Engineering 35a.
- [40a. ELECTRONICS.—High vacuum electron tubes, tube characteristics, electron ballistics, rectifiers and filters, amplifiers, equivalent plate circuit. For students selecting the option in communication and electronics. Not open to students with credit in Electrical Engineering 60a. S, I, and II, (3). *Prerequisite*: Electrical Engineering 30a, 30b; registration in Electrical Engineering 48a, 48b, and 40b.]
- [40b. ELECTRONICS LABORATORY.—Laboratory to accompany Electrical Engineering 40a. Not open to students with credit in Electrical Engineering 60b. S, I, and II, (1). *Prerequisite*: Registration in Electrical Engineering 40a.]
- 48a. COMMUNICATION NETWORKS AND LINES.—(Formerly E.E. 48). Four-terminal networks, reactance networks, general transmission line equations, low-loss lines, reflections, filters. S, I, and II, (3). *Prerequisite*: Electrical Engineering 30a, 30b; registration in Electrical Engineering 48b.
- 48b. COMMUNICATION NETWORKS AND LINES LABORATORY.—Laboratory to accompany Electrical Engineering 48a. S, I, and II, (1). *Prerequisite*: Registration in Electrical Engineering 48a.
- 50a. ALTERNATING CURRENT APPARATUS.—Synchronous, induction, and commutator motors; rotary converters, single phase motors, special types of alternating current dynamo machines. For electrical engineering students selecting the option in power. Not open to students with credit in Electrical Engineering 32a. S, I, and II, (3). *Prerequisite*: Electrical Engineering 35a, 35b; registration in Electrical Engineering 50b.
- 50b. ALTERNATING CURRENT APPARATUS LABORATORY.—Laboratory to accompany Electrical Engineering 50a. S, I, and II, (2). *Prerequisite*: Registration in Electrical Engineering 50a.

- 51a-52a. SEMINAR.—Papers and discussion of current engineering topics. S, I, and II, (1). *Prerequisite:* Senior standing in electrical engineering.
- 53a. DIRECT CURRENT APPARATUS.—Theory and characteristics of standard and special direct current apparatus. S, I, and II, (3). *Prerequisite:* Electrical Engineering 50a, 50b; registration in Electrical Engineering 53b.
- 53b. ELECTRICAL DYNAMO LABORATORY.—Analysis of the operation and characteristics of direct current rotating equipment by laboratory methods. S, I, and II, (2). *Prerequisite:* Registration in Electrical Engineering 53a.
- 55c. ELECTRICAL DESIGN.—(Formerly E.E. 55). Fundamental principles of electrical power apparatus design with particular application to transformers and generators. Properties of materials in common use; construction of coils; magnetic attraction; stored energy; field mapping; heat dissipation; temperature rise and rating of apparatus. For students selecting the option in power. S, I, and II, (3). *Prerequisite:* Electrical Engineering 35a, 35b; registration in Electrical Engineering 50a, 50b.
- [57a. PRINCIPLES OF ILLUMINATING ENGINEERING.—Concepts and units in light calculations; calculation of illumination from point, line, and surface sources; interpretation of photometric and test data. S and I, (4). *Prerequisite:* Electrical Engineering 20a; Mathematics 19; Physics 71a, 72a; registration in Electrical Engineering 57b.]
- [57b. ILLUMINATION DESIGN LABORATORY.—Laboratory to accompany Electrical Engineering 58a. Checking and constructing equipment and installation designs in lighting. S and II, (1). *Prerequisite:* Registration in Electrical Engineering 58a.]
- 58a. ILLUMINATION DESIGN AND ECONOMICS.—Design of lighting systems for natural and artificial illumination, applications for interiors and exteriors, in both commercial and industrial installations; economic studies of lighting installations; design of reflectors and lighting equipment. S and II, (4). *Prerequisite:* Electrical Engineering 57a, 57b; registration in Electrical Engineering 58b.
- 58b. ILLUMINATION DESIGN LABORATORY.—Laboratory to accompany Electrical Engineering 58a. Checking and constructing equipment and installation designs in lighting. S and II, (1). *Prerequisite:* Registration in Electrical Engineering 58a.
- [59a. ILLUMINATION SOURCES.—Study of natural and artificial light sources covering combustion, incandescent, and gaseous lamps with emphasis on fundamental laws. Radiation measurements and colorimetry. S and II, (3). *Prerequisite:* Registration in Electrical Engineering 58a, 58b.]
- [60a. ELECTRONICS.—Characteristics and applications of high vacuum and gas filled electron tubes, circuits, electric circuit interruption. For students selecting the options in illumination and in power. Not open to students with credit in Electrical Engineering 40a or 62a. S, I, and II, (4). *Prerequisite:* Electrical Engineering 30a and 35a; registration in Electrical Engineering 50a and 60b.]
- [60b. ELECTRONICS LABORATORY.—Experimental study to accompany Electrical Engineering 60a. Not open to students with credit in Electrical Engineering 40b or 62b. S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 60a.]
- 61a. COMMUNICATION ENGINEERING I.—(Formerly E.E. 51). Fundamentals of coupled circuits, impedance transformation, reactance network synthesis as applied to radio frequencies; modulation and demodulation, radio frequency amplifiers and oscillators; principles of receivers and transmitters. S, I, and II, (3). *Prerequisite:* Electrical Engineering 48a, 48b and 40a, 40b; registration in Electrical Engineering 61b.
- 61b. COMMUNICATION ENGINEERING LABORATORY.—Laboratory to accompany Electrical Engineering 61a. S, I, and II, (1). *Prerequisite:* Registration in Electrical Engineering 61a or consent of instructor.
- [62a. ELECTRONICS.—Oscillators, trigger circuits, gas filled electron tubes, phototubes; characteristics and applications; electric circuit interruption. Not open to students with credit in Electrical Engineering 60a. S, I, and II, (3). *Prerequisite:* Electrical Engineering 40a, 40b; registration in Electrical Engineering 62b.]
- [62b. ELECTRONICS LABORATORY.—Laboratory to accompany Electrical Engineering 62a. Not open to students with credit in Electrical Engineering 60b. S, I, and II, (1). *Prerequisite:* Electrical Engineering 40b; registration in Electrical Engineering 62a.]
- 63a. COMMUNICATION ENGINEERING II.—(Formerly E.E. 53). Continuation of Electrical Engineering 61a with emphasis on very high frequencies and microwaves. Theory

- of VHF and microwave generators. Electromagnetic fields, radiation and propagation of electromagnetic energy, radiating systems. S, I, and II, (3). *Prerequisite*: Electrical Engineering 61a; registration in Electrical Engineering 63b.
- 63b. COMMUNICATION ENGINEERING LABORATORY.—Laboratory to accompany Electrical Engineering 63a. S, I, and II, (1). *Prerequisite*: Registration in Electrical Engineering 63a, or consent of instructor.
- 64c. COMMUNICATION DESIGN.—(Formerly E.E. 52). Design, construction, and complete test of a radio transmitter or receiver. S, I, and II, (3). *Prerequisite*: Electrical Engineering 61a.
- 69a. ECONOMICAL DESIGN OF ELECTRICAL SYSTEMS.—Fundamental principles of engineering economy applied to the design and operation of electrical systems. Interest, depreciation, economic selection of equipment, economic life, most favorable time to replace equipment, load curves and their analysis, plant location, load division. S, I, and II, (3). *Prerequisite*: Senior standing in electrical engineering.
- 71-72. ELECTRICAL ENGINEERING PROBLEMS.—I and II, (1 to 3). *Prerequisite*: Approval of written application to department.
- 73a. ELECTRICAL ENERGY MEASUREMENTS AND SYSTEM PROTECTION.—Transmission equipment, meters, relays. I and II, (3). *Prerequisite*: Registration or credit in Electrical Engineering 50a, or consent of instructor.
- 73b. ENERGY MEASUREMENT AND PROTECTION LABORATORY.—Laboratory to accompany Electrical Engineering 73a. I and II, (1). *Prerequisite*: Registration in Electrical Engineering 73a.
- [74a. POWER TRANSMISSION AND DISTRIBUTION CIRCUITS.—Advanced analysis of circuits used for power transmission and distribution. I and II, (3). *Prerequisite*: Electrical Engineering 30a.]
- [97-98. THESIS.—First semester, preliminary reading and investigation; second semester, completion. Continuous through I and II, (0 to 3).]
- [99. INSPECTION TRIP.—I, (no credit). *Prerequisite*: Senior standing.]

Courses for Graduates

NOTE: The prerequisite for graduate work in electrical engineering is the equivalent of the undergraduate courses required for the degree of Bachelor of Science in electrical engineering in the branches of the subject in which registration is desired. Graduate students who wish to take a minor in electrical engineering must have had differential and integral calculus, and one year's work in college physics.

The separate courses under the general numbers 101, 102, 103, and 104 may be taken simultaneously.

101. ADVANCED COURSES IN ALTERNATING CURRENTS.—I and II, ($\frac{1}{2}$ to 2 units).
- GRADUATE SEMINAR.—Required of all graduate students. (No credit).
 - CIRCUIT TRANSIENTS.
 - MACHINE TRANSIENTS.
 - SYMMETRICAL COMPONENTS.
 - ADVANCED COMMUNICATION NETWORKS.
 - ADVANCED ALTERNATING CURRENT MACHINERY.
 - ENGINEERING ANALYSIS.
 - MICROWAVE CIRCUITS.
102. WAVES, GENERATION AND UTILIZATION.—I and II, ($\frac{1}{2}$ to 2 units).
- ELECTROMAGNETIC FIELDS AND RADIATING SYSTEMS.
 - ELECTROACOUSTICAL SYSTEMS.
 - BOUNDARY VALUE PROBLEMS IN ELECTROMAGNETIC FIELD THEORY.
103. ELECTRIC DESIGN.—I and II, (1 to 3 units).
- POWER PLANT DESIGN.
 - MACHINE DESIGN.
 - ILLUMINATION PRACTICE AND DESIGN.
 - POWER TRANSMISSION SYSTEMS.
 - PRINCIPLES OF SERVO-MECHANISMS AND AUTOMATIC CONTROL DEVICES.
104. VACUUM TUBES AND ELECTRONIC CONTROL.—I and II, (1 unit).
- ELECTRON AND ION DYNAMICS.
 - VACUUM TUBE CIRCUIT ANALYSIS.
105. ELECTRICAL ENGINEERING RESEARCH.—S, I, and II, (1 to 3 units).

ENGINEERING

Courses for Undergraduates

NOTE: Each of the following courses may be used as an approved or non-technical elective in all engineering curricula.

10. ENGINEERING ECONOMICS.—Evolution and growth of industry; basic industrial principles; ownership and securities; standardization; valuation and depreciation; comparison and selections of engineering projects. I, (3). *Prerequisite:* Sophomore standing in engineering.
20. HISTORY OF ENGINEERING.—Study of the important elements in the growth of the art and science of engineering from ancient times to the present. Lives of some of the men who have been leaders. Effect of engineering on the social conditions of the various periods. I and II, (2). *Prerequisite:* Junior standing in engineering.
39. INDUSTRIAL RELATIONS.—History of the development of industry; the factory system; manufacturers' organizations; labor organizations; works management; trade unions; wage systems; personnel problems; labor legislation. I and II, (3). *Prerequisite:* Junior standing.
40. TRANSPORTATION.—Survey course covering highway and marine transportation. Historical development and essential technical considerations. I, (2). *Prerequisite:* One year entrance credit in high school algebra and plane geometry.
41. TRANSPORTATION.—Survey course covering railways, city transit, and air transport. Historical development and essential technical considerations. I and II, (3). *Prerequisite:* Mathematics 2 or 3, and 4.
92. ENGINEERING LAW.—Contracts, evidence, torts, equity, real property, corporations, agency, sales, negotiable instruments, water rights, patent rights, special assessments, contract letting, general conditions. I and II, (3). *Prerequisite:* Senior standing in engineering or architecture.

ENGLISH

(Including Rhetoric and Speech)

ENGLISH LANGUAGE AND LITERATURE

Requirements for L.A.S. Students

Major: 20 hours in English, excluding Rhetoric 0, 1, 2, 5, 9, 10, 21, 22, English 10a, 10b, 11a, 11b, 20a, 20b, 41, 42, and courses in speech, and including at least ten hours in English literature, at least three hours in composition, and two courses chosen from the advanced groups in English literature.

Minors: 20 hours in (a) Latin or Greek or French or German or Spanish or Italian or Portuguese; or (b) in any two of those languages; or (c) in one of those languages and philosophy; or (d) in one of those languages and history; or (e) in history and philosophy. No language courses may be regarded as satisfying the minor requirements if they are excluded from the majors of the language departments (excepting elementary courses in Greek and Latin, French 2a, Italian 2a, and Spanish 2a). At least eight hours must be taken in each subject, if two are chosen.

Program of Study: The following courses are called to the special attention of English majors: English 23, 12, 13, Rhetoric 3, English 54a, 54b, at least one period course (e.g., English 39, 29, 27, 31, 33, 34, 50a, or 50b), at least one author course (e.g., English 25, 5, 63, 52, 43, or 56), and English 55a, 55b.

Rhetoric 3 (Exposition) is preferred over Rhetoric 4 (Narration and Description) as a course to take in satisfying the departmental requirements in composition.

Courses for Undergraduates

- 10a. TYPES OF POETRY.—Intended primarily for those who expect to do considerable work in literature, in English or in any other language. S, I, and II, (3). Credit is not given for English 11a or 11b in addition to English 10a, or for any of these courses in addition to English 20a and 20b. Seniors receive only two hours credit. *Prerequisite:* The minimum entrance requirements in English.

- 10b. STUDY OF THE DRAMA.—Intended primarily for those who expect to do considerable work in literature, in English or in any other language. S, I, and II, (3). See note under English 10a. Seniors receive only two hours credit. *Prerequisite:* English 10a or 11a.
- 11a. CHRONOLOGICAL STUDY OF MASTERPIECES.—Beginning to 1800. S, I, and II, (3). See note under English 10a. Seniors receive only two hours credit. *Prerequisite:* The minimum entrance requirements in English.
- 11b. CHRONOLOGICAL STUDY OF MASTERPIECES.—Eighteenth and nineteenth centuries. S, I, and II, (3). See note under English 10a. Seniors receive only two hours credit. *Prerequisite:* English 11a.
12. AMERICAN LITERATURE.—S and I, (3). *Prerequisite:* Sophomore standing, or exemption from Rhetoric 2.
13. AMERICAN LITERATURE.—II, (3). *Prerequisite:* Sophomore standing, or exemption from Rhetoric 2.
- 20a. CHIEF ENGLISH WRITERS OF THE NINETEENTH CENTURY.—Nineteenth-century men of letters on religion, politics, economics, conduct, and social life. For students in professional and technical courses. S, I, and II, (4). Credit is not given for English 20a in addition to English 10a-10b or 11a-11b. *Prerequisite:* Sophomore standing.
- 20b. CHIEF ENGLISH WRITERS BEFORE 1800.—S, I, and II, (4). Credit is not given for English 20b in addition to English 10a-10b or 11a-11b. *Prerequisite:* Sophomore standing.
23. INTRODUCTION TO SHAKESPEARE.—S, I, and II, (3). *Prerequisite:* Sophomore standing, or exemption from Rhetoric 2.
44. CONTEMPORARY POETRY.—S and II, (3). *Prerequisite:* Six hours of English literature, or junior standing.

Courses for Advanced Undergraduates

Junior standing is prerequisite to all the following courses unless otherwise specified.

4. ENGLISH POETICS.—I, (2).
[5. SHAKESPEARE.—I and II, (3).]
16. MODERN ENGLISH GRAMMAR.—Definition and meaning; the use of dictionaries and grammars; a survey of syntax, etc. S, I, and II, (3).
21. LITERARY STUDY OF THE BIBLE.—I, (3). *Prerequisite:* Six hours of English literature.
27. THE AGE OF DRYDEN.—A study of Dryden in relation to the writers of the later seventeenth century and to the literary, social, and religious forces of the period. II, (3).
- 30a-30b. TENDENCIES IN AMERICAN FICTION SINCE 1870.—S, I, and II, (3).
31. ENGLISH LITERATURE FROM 1688 TO 1789.—Swift, Defoe, Steele, Addison, Dryden, Pope, Gray, Goldsmith, Johnson. I, (3).
33. ENGLISH LITERATURE FROM 1789 TO 1837.—Wordsworth, Scott, Coleridge, Byron, Shelley, Keats. S and I, (3).
39. INTRODUCTION TO THE LITERATURE OF THE MIDDLE AGES.—I, (3).
41. TEACHING OF ENGLISH LITERATURE.—S and I, (2). *Prerequisite:* Nine hours of English literature.
42. TEACHING OF ENGLISH COMPOSITION.—S and II, (2). *Prerequisite:* Nine hours of English composition.
43. BROWNING.—Intensive reading of the principal poems. II, (3).
45. DEVELOPMENT OF THE MODERN DRAMA.—Reading and lectures. I, (3).
- 50a. VICTORIAN LITERATURE FROM 1832 TO 1859.—I, (3).
- 50b. VICTORIAN LITERATURE FROM 1859 TO 1901.—II, (3).
51. GREAT NOVELISTS OF THE EIGHTEENTH CENTURY.—Defoe, Richardson, Fielding, Smollett, Sterne, Goldsmith, etc. II, (3).
52. GREAT ENGLISH NOVELISTS OF THE NINETEENTH CENTURY.—II, (3).
56. TENNYSON AND HIS CONTEMPORARIES.—I, (3).
57. GREAT FOREIGN NOVELISTS IN RELATION TO THE ENGLISH NOVEL.—Goethe, Hugo, Balzac, Flaubert, Zola, Turgenyev, Dostoevski, Tolstoi. I, (3).
- 59a. SCANDINAVIAN DRAMA IN ENGLISH TRANSLATION.—A study of Ibsen's plays and his influence on American and English drama. S and I, (2).
- 59b. SCANDINAVIAN DRAMA IN ENGLISH TRANSLATION.—A study of Scandinavian dramatists since Ibsen, with emphasis on Strindberg's plays and his influence on American drama. II, (2).

- 60a-60b. THESIS AND HONORS.—S, I, and II, (credit to be arranged). *Prerequisite:* Senior standing.
 [62. ENGLISH LITERATURE FROM 1588 TO 1660.—I, (3).]

Courses for Advanced Undergraduates and Graduates

Junior standing is prerequisite to all the following courses unless otherwise specified.

17. HISTORY OF THE ENGLISH LANGUAGE.—I, (3). *Prerequisite:* Consent of instructor.
 25. CHAUCER.—S and II, (3).
 26. SPENSER.—II, (3).
 [35. ENGLISH DRAMA (PREVIOUS TO SHAKESPEARE).—From the beginning to 1600. I, (3).]
 36. ENGLISH DRAMA (EXCLUSIVE OF SHAKESPEARE).—From 1600 to 1700. S and I, (3).
 [38. DEVELOPMENT OF ARTHURIAN ROMANCE.—II, (3 or 4).]
 54a. INTRODUCTION TO COMPARATIVE LITERATURE.—Comparative study of the greatest Greek, Latin, Italian, and Spanish authors. I, (3).
 54b. INTRODUCTION TO COMPARATIVE LITERATURE.—Survey of the greatest French, German, and English authors. II, (3).
 55a-55b. SURVEY OF ENGLISH LITERATURE.—S (55b only), I, and II, (3). *Prerequisite:* Senior standing.
 63. POETRY OF MILTON.—Origin, forms, artistic and ethical values; Milton's place in English literary history. II, (3).
 65a-65b. HISTORY AND PRINCIPLES OF LITERARY CRITICISM.—I and II, (3). *Prerequisite:* Senior standing.

Courses for Graduates

NOTE: Students who enter graduate work with English as their major subject are required to give evidence of their ability to write good English. They must present the equivalent of fourteen hours of undergraduate work in English literature, the required college work in rhetoric, and the equivalent of four semesters of college work in Latin, or Greek, or French, or German. After the first year of graduate work a knowledge of French and German is indispensable. Students making English their minor may be admitted to such courses as in the judgment of the instructor in charge they are qualified to pursue.

101. RESEARCH IN SPECIAL TOPICS.—Guidance in writing theses for advanced degrees. S, I, and II, (1 to 2 units).
 108. OLD ENGLISH (ANGLO-SAXON).—I, (1 unit).
 109. OLD ENGLISH (ANGLO-SAXON).—Beowulf. II, (1 unit).
 112. SEMINAR IN CHAUCER.—I, (1 unit).
 125. MIDDLE ENGLISH.—II, (1 unit).
 [128a-128b. LITERATURE OF THE SIXTEENTH CENTURY.—S (128b only), and continuous through I and II, (1 unit).]
 129a-129b. ENGLISH LITERATURE FROM THE NORMAN CONQUEST TO 1400.—Continuous through I and II, (1 unit).
 [130a-130b. TRAGEDY.—Continuous through I and II, (1 unit).]
 135a-135b. AMERICAN LITERATURE AND THOUGHT.—S (135a only), and continuous through I and II, (1 unit).
 138a-138b. THE ROMANTIC MOVEMENT.—S (138a only), and continuous through I and II, (1 unit).
 139a-139b. PROBLEMS IN AMERICAN LITERATURE AND CULTURAL HISTORY.—Continuous through I and II, (1 unit).
 [140a-140b. INVESTIGATIONS IN MODERN ENGLISH LITERATURE.—Continuous through I and II, (1 to 3 units).]
 141a-141b. LITERATURE OF THE SEVENTEENTH CENTURY.—Continuous through I and II, (1 unit).
 143a-143b. SEMINAR IN THE HISTORY AND THEORY OF PROSE FICTION.—Continuous through I and II, (1 unit).
 145a-145b. LITERATURE OF THE EIGHTEENTH CENTURY.—S (145b only), and continuous through I and II, (1 unit).
 146a-146b. SEMINAR IN MILTON AND HIS AGE.—Continuous through I and II, (1 unit).
 [147a-147b. SHAKESPEARE AND ELIZABETHAN DRAMA.—Continuous through I and II, (1 unit).]
 [148. SEMINAR IN ELIZABETHAN DRAMA.—II, (1 unit).]
 [149a-149b. DEVELOPMENT OF TUDOR DRAMA.—Continuous through I and II, (1 unit).]
 150a-150b. STUDIES IN VICTORIAN LITERATURE.—Continuous through I and II, (1 unit).

- 151a-151b. STUDIES IN THE HISTORY OF THE EIGHTEENTH CENTURY NOVEL.—Continuous through I and II, (1 unit).
 [157. SEMINAR IN SPENSER.—II, (1 unit).]

RHETORIC

Courses for Undergraduates

NOTE: Division of General Studies 1a and 1b (Verbal Expression) may be substituted for Rhetoric 1 and 2 wherever the latter constitute a prerequisite.

0. RHETORIC AND COMPOSITION.—Open to students who fail the placement test for admission to Rhetoric 1. Intensive review of fundamentals, with considerable practice in composition. Students passing this course will be admitted to Rhetoric 1 without further examination. S, I, and II, (no credit).
- 1-2. RHETORIC AND COMPOSITION.—This course provides elementary training and practice in the comprehension and in the expression of both written and oral English. S, I, and II, (3). Seniors receive only two hours credit. *Prerequisite*: A passing grade on the Rhetoric 1 placement examination or a passing grade in Rhetoric 0. These courses are not counted toward a major in English.
3. EXPOSITION.—I and II, (3). *Prerequisite*: Rhetoric 1 and 2; sophomore standing.
4. NARRATION AND DESCRIPTION.—Elements of narrative writing. S, I, and II, (3). *Prerequisite*: Rhetoric 1 and 2; sophomore standing.
5. RHETORIC AND COMPOSITION.—Only for students who have failed the qualifying examination in English. (See page 115 for complete rule.) S, I, and II, (3).
- 9a. ENGLISH AS A FOREIGN LANGUAGE.—Practice on oral and written composition and essentials of grammar and structure for students whose native language is not English. II, (3).
10. BUSINESS LETTER WRITING.—S, I, and II, (2). This course is not counted toward a major in English. *Prerequisite*: Rhetoric 1 and 2.

Courses for Advanced Undergraduates

Junior standing is prerequisite to all the following courses unless otherwise specified.

6. ADVANCED NARRATIVE COMPOSITION.—Short-story writing. Intended for those who have some aptitude for literary work. S, I, and II, (3). *Prerequisite*: Consent of instructor.
7. ADVANCED NARRATIVE COMPOSITION.—II, (3). *Prerequisite*: Consent of instructor.
8. ADVANCED COMPOSITION.—Criticism, theory, and practice. Essay writing. I, (3).
21. ADVANCED BUSINESS WRITING.—Advertising copy, direct-mail campaigns, and copy for house magazines. I, (2).
22. ADVANCED BUSINESS WRITING.—Business reports and articles for business magazines. S, I, and II, (2). *Prerequisite*: Rhetoric 10.

Courses for Graduates

105. THE THEORY AND PRACTICE OF ENGLISH COMPOSITION.—An examination of modern prose style and a consideration of problems confronting writers and teachers of writing at the college level. I and II, (1 unit).

ENTOMOLOGY

Requirements for L.A.S. Students

Major: 20 hours in entomology, excluding Entomology 1a, 1b, 2, and 31. At least five hours must be taken from the advanced group.

Minors: 20 hours in not more than two of the following subjects, with at least eight hours in each subject if two are chosen: agronomy, bacteriology, botany, chemistry, horticulture, physiology, and zoology.

Courses for Undergraduates

NOTE: Entomology 1a and 1b are open to freshmen, and 2 and 31 to sophomores, without prerequisites. Either 1a and 1b or both 2 and 9 are prerequisite to all other courses in the department. Recommended sequences of courses are 1a, 1b, 8, 14, 20, and 31, for those desiring strictly practical or economic work; 2, 9, and 21, for those

interested in the cultural or biological values of insect study. For students whose major is entomology, a desirable, though not required, sequence is: Entomology 1a, 1b, 9, 7, 3, 4, 8, 10, 14, 20, 21.

- 1a. DESTRUCTIVE AND USEFUL INSECTS.—Fundamentals of methods of injury and benefit by insects, their morphology, physiology, metamorphosis, classification, and control; recognition, nature of injury, life-history, habits, and control of the most destructive pests of field crops, vegetables and fruits, household and stored products, domestic animals and man. Lectures and discussions. To accompany Entomology 1b, but may be taken alone. S, I, and II, (3). Seniors receive only two hours credit.
- 1b. DESTRUCTIVE AND USEFUL INSECTS.—Study of actual specimens of insects, insecticides, etc., illustrating their external and internal anatomy, the various types of mouth parts, their metamorphosis, training in the keying out and classifying of insects to order and family, and control measures; experience in the recognition of the specific pests discussed in Entomology 1a and the damage they do. S, I, and II, (2). *Prerequisite:* Entomology 1a, or concurrent registration therein.
2. THE LIFE OF INSECTS.—Non-technical, cultural course of readings and illustrated lectures, with exhibits. Orders of insects, their manner of life and development, feeding and nesting; how they protect themselves; their relation to animals and flowers; disease transmission; injuries and benefits; recognition and control. I, (2). *Prerequisite:* Sophomore standing. Not open to students who have credit in Entomology 1a.
3. CLASSIFICATION OF INSECTS (ORDERS WITH GRADUAL METAMORPHOSIS) AND PRINCIPLES OF SYSTEMATIC ENTOMOLOGY.—I, (5). *Prerequisite:* Entomology 9, or equivalent; sophomore standing. Given in alternate years.
4. CLASSIFICATION OF INSECTS (ORDERS WITH COMPLETE METAMORPHOSIS) AND PRINCIPLES OF SYSTEMATIC ENTOMOLOGY.—II, (5). *Prerequisite:* Entomology 9, or equivalent; sophomore standing. Given in alternate years.
- 7a-7b. INSECT MORPHOLOGY.—S and I, (5). *Prerequisite:* Entomology 1a or 9; sophomore standing. Given in alternate years.
- [9. COLLECTION AND CLASSIFICATION OF INSECTS.—Discussions and laboratory. I and II, (3). *Prerequisite:* Credit or registration in Entomology 1a or 2.]
- [S11a-11b. FACTS WHICH EVERY CITIZEN SHOULD KNOW ABOUT INSECTS.—Especially important for teachers of biology, zoology, general science, and agriculture, and for workers in the biological and medical sciences, agriculture, and horticulture. S, (2½).]
31. ESSENTIALS OF BEEKEEPING.—Structure of the honeybee; behavior as a basis for seasonal management. Lectures, laboratory, and general apiary manipulations. S, I, and II, (1 or 2). *Prerequisite:* Sophomore standing.

Courses for Advanced Undergraduates and Graduates

6. SPECIAL PROBLEMS.—Open to seniors ready to take up some special investigation which may be completed as an undergraduate study or be a beginning of a thesis problem for an advanced degree. S, I, and II, (2 to 5). *Prerequisite:* Any of the following: Entomology 3, 4, 7, 8, 10, 14, 20, 21, 22, or 31; senior standing.
8. INSECT PESTS OF FIELD CROPS.—II, (3). *Prerequisite:* Entomology 1a or 9; junior standing. Given in alternate years.
- [10a-10b. MORPHOLOGY AND TAXONOMY OF IMMATURE INSECTS.—I and II, (3). *Prerequisite:* Entomology 7a; senior standing. Given in alternate years.]
- [S12. ENTOMOLOGY FOR TEACHERS.—S, (3). *Prerequisite:* An elementary course in entomology, zoology, or biology; senior standing.]
14. MEDICAL AND VETERINARY ENTOMOLOGY.—II, (4 to 5). *Prerequisite:* Entomology 1a or 9. Given in alternate years.
20. INSECT CONTROL.—Chemical, physical, cultural, biological, and legal control measures used against insects, with actual practice in their application. Intended to prepare students for professional or commercial work as entomologists, pest control operators, or agricultural and horticultural agents in insect suppression and research. I, (4). *Prerequisite:* Entomology 1a or 9; senior standing.
- [21. INSECT BIONOMICS.—Relations of insects to each other, to plants, to animals; their environment, social life, food, behavior, reproduction, protection. II, (3). *Prerequisite:* Entomology 1 or 9; senior standing. Given in alternate years.]

Courses for Graduates

NOTE: The prerequisite for graduate work in entomology is two years of undergraduate biology, including zoology and entomology. A student who chooses entomology as a major for an advanced degree must have had at least six hours of undergraduate courses in entomology. A reading knowledge of French or German is required by the beginning of the second year.

For a master's degree in the biological sciences, see page 297.

100. RESEARCH.—Work may be taken in the following subjects: (a) morphology and embryology of insects, (b) economic entomology, (c) systematic entomology, (d) biology and ecology of insects. S, I, and II, (½ to 4 units).
107a-107b. INSECT ANATOMY.—S and I, (1 unit). Given in alternate years.

FORESTRY

Courses for Undergraduates

1. GENERAL FORESTRY.—The forest as a renewable natural resource; the aims and scope of forestry; economic and social importance of forests to the nation; the principles of forest management and protection; the development of public and private forestry in the United States; forestry as a profession. II, (3). *Prerequisite*: Sophomore standing, or registration in the pre-forestry curriculum.
2. FARM FORESTRY.—A study of those phases of forestry which are applicable on Illinois farms. For students preparing for work in agricultural extension, soil conservation, teaching of vocational agriculture, and for those in the general agriculture curriculum. II, (2). *Prerequisite*: Registration in College of Agriculture, College of Education, or permission of instructor.

FRENCH

(Including Russian)

Requirements for L.A.S. Students

Major: 20 hours of French excluding French 1a, 1b, 2a, 6a, and 6b, and including at least five hours from the group for advanced undergraduates and graduates.

Minors: 20 hours in not more than two of the following subjects, with at least eight hours in each subject if two are chosen: education, English (excluding Rhetoric 1 and 2), German, Greek, history, Italian, Latin, philosophy, Portuguese, Spanish.

Courses for Undergraduates

- 1a. ELEMENTARY FRENCH.—Grammar, pronunciation, reading of modern authors, composition, conversation. For students who have had no work in French. S, I, and II, (4). Seniors receive only three hours credit. No credit toward graduation is given for French 1a without French 1b.
- 1b. ELEMENTARY FRENCH (CONTINUED).—S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite*: French 1a, or one year of high school French.
- 2a. MODERN FRENCH.—Rapid reading of modern authors; syntax and composition. S, I, and II, (4). *Prerequisite*: French 1b, or two years of high school French.
- 2b. MODERN FRENCH (CONTINUED).—Rapid reading of modern authors; syntax and composition. S, I, and II, (4). *Prerequisite*: French 2a, or three years of high school French.
- 3a. INTRODUCTION TO FRENCH LITERATURE.—S and I, (3). *Prerequisite*: French 2b, or four years of high school French.
- 3b. INTRODUCTION TO FRENCH LITERATURE (CONTINUED).—II, (3). *Prerequisite*: French 2b, or four years of high school French.
- [S4a. GRAMMAR AND SYNTAX.—S, (1). *Prerequisite*: One year of college French, or two years of high school French.]
- [S4b. GRAMMAR AND SYNTAX (CONTINUED).—S, (1). *Prerequisite*: French 2a, or three years of high school French.]
- 6a. COMPOSITION AND CONVERSATION.—I, (2). *Prerequisite*: French 1b, or two years of high school French.
- 6b. COMPOSITION AND CONVERSATION (CONTINUED).—II, (2). *Prerequisite*: French 6a, or three years of high school French.
- 7a. INTERMEDIATE COMPOSITION AND CONVERSATION.—Conducted largely in French. I,

- (2). Prospective teachers of French are strongly advised to take French 7a and 7b. *Prerequisite*: French 2b, or 6b, or equivalent.
- 7b. INTERMEDIATE COMPOSITION AND CONVERSATION (CONTINUED).—Conducted largely in French. II, (2). Prospective teachers of French are strongly advised to take French 7a and 7b. *Prerequisite*: French 7a or equivalent.
- 8a. ADVANCED COMPOSITION AND CONVERSATION.—Idiomatic constructions; syntax; themes. Conducted entirely in French. Especially for prospective teachers. I, (2). *Prerequisite*: French 7b, or equivalent.
- 8b. ADVANCED COMPOSITION AND CONVERSATION (CONTINUED).—Conducted entirely in French. Especially for prospective teachers. II, (2). *Prerequisite*: French 8a.
25. METHODS OF TEACHING FRENCH.—Discussion and laboratory work in phonetics. I, (3). *Prerequisite*: 20 hours in French, or 16 hours in French plus 20 in Spanish; senior standing or consent of instructor.
- 28a-28b. SENIOR THESIS.—For candidates for honors in French and for other seniors. S, I, and II, (2).

Courses for Advanced Undergraduates and Graduates

NOTE: French 3a-3b or the equivalent and junior standing, or senior standing and consent of instructor, are prerequisite to all the following courses.

- 10a. SURVEY OF FRENCH LITERATURE.—I, (3).
- 10b. SURVEY OF FRENCH LITERATURE (CONTINUED).—II, (3).
- 17a. MODERN FRENCH DRAMA.—I, (2).
- 17b. MODERN FRENCH DRAMA (CONTINUED).—II, (2).
- 24a. FRENCH DRAMA OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES.—I, (3).
- 24b. FRENCH DRAMA OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES (CONTINUED).—II, (3).
- 32a. FRENCH NOVEL OF THE NINETEENTH CENTURY.—I, (3).
- 32b. FRENCH NOVEL OF THE NINETEENTH CENTURY (CONTINUED).—II, (3).
- [33a. LA LITTÉRATURE CONTEMPORAINE.—(In French). I, (2).]
- [33b. LA LITTÉRATURE CONTEMPORAINE (CONTINUED).—(In French). II, (2).]
- 35a. CIVILISATION FRANÇAISE.—(In French). I, (2).
- 35b. CIVILISATION FRANÇAISE (CONTINUED).—(In French). II, (2).

Courses for Graduates

NOTE: Students beginning graduate work for an advanced degree in French must have at least three years of college work in French, including one advanced literary course. Students who have a knowledge of Latin and of Spanish or Italian, together with a reading knowledge of German, will find their work for an advanced degree greatly facilitated.

- 101a-101b. OLD FRENCH LITERATURE.—Continuous through I and II, (1 unit).
- [102a-102b. VILLON, RABELAIS, MONTAIGNE, LA PLÉIADE.—Continuous through I and II, (1 unit).]
- 103a-103b. SEVENTEENTH CENTURY LITERATURE.—S (103b only), and continuous through I and II, (1 unit).
- [104a-104b. EIGHTEENTH CENTURY LITERATURE.—Continuous through I and II, (1 unit).]
- [S105. CLASSIC FRENCH DRAMA.—S, ($\frac{3}{4}$ to 1 unit).]
- 127a-127b. NINETEENTH CENTURY LITERATURE TO 1850.—Continuous through I and II, (1 unit).
- [S135. MODERN FRENCH NOVEL.—S, ($\frac{3}{4}$ to 1 unit).]
- [144a-144b. FRENCH REALISM AND NATURALISM.—Continuous through I and II, (1 unit).]
- 145a-145b. LA LITTÉRATURE CONTEMPORAINE.—(In French). Continuous through I and II, (1 unit).
- [175a-175b. OLD FRENCH PHONOLOGY AND MORPHOLOGY.—Continuous through I and II, (1 unit).]
- 195a-195b. SEMINAR.—Research work in special topics. S, and continuous through I and II, (1 to 2 units).

RUSSIAN

Courses for Undergraduates

- 1a-1b. ELEMENTARY COURSE.—I and II, (4). *Prerequisite*: Sophomore standing.

GENERAL ENGINEERING DRAWING

Courses for Undergraduates

1. ELEMENTS OF DRAWING.—Lettering; orthographic projection; working drawings; chart and diagram drawing; isometric and oblique drawing; freehand sketching; tracings; methods of reproducing drawings. S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* Plane geometry.
2. DESCRIPTIVE GEOMETRY.—Theory of projections; solution of theoretical and practical problems involving size, shape, and relative position of common geometrical magnitudes such as points, lines, planes, curved surfaces, and solids; intersections, developments, shades and shadows, perspective drawing, etc. S, I, and II, (4). *Prerequisite:* Plane and solid geometry.
3. AIRCRAFT DRAFTING AND LOFTING.—Aircraft terminology, control and reference surfaces and systems; sheet metal terminology and fabrication; drafting standards and types of drawings; drafting room manuals and standard handbooks; descriptive geometry applied to simple layouts and details; aircraft fastenings; lofting—plane, tapered, and double cornered surfaces, airfoils, intersections; practices and standards incidental to the foregoing considerations. I and II, (2). *Prerequisite:* General Engineering Drawing 1 or 4, and 2.
4. ADVANCED DRAWING.—Review of orthographic projection and working drawings; isometric, oblique, perspective, chart and diagram, topographical, architectural, and structural drawing. S, (4). *Prerequisite:* Three years of high school drawing, or the equivalent.
6. ELEMENTS OF DRAWING.—Same topics covered as in General Engineering Drawing 1 plus piping and perspective drawing. For students in chemical and metallurgical engineering. I and II, (3). *Prerequisite:* Plane geometry.
7. ARCHITECTURAL PROJECTIONS.—Instrumentation; lettering; projection; intersections; conventions; shades and shadows; oblique, isometric, and perspective drawing. S, I, and II, (2). *Prerequisite:* Plane and solid geometry.
8. ARCHITECTURAL PROJECTIONS (CONTINUED).—Shades and shadows; oblique, isometric, and perspective drawing; developments. S, I, and II, (2). *Prerequisite:* General Engineering Drawing 7.
10. PICTORIAL DRAWING.—Review of perspective and of shades and shadows; rendering of drawings in pencil, pastel, and water colors; elementary design and study of proportion. II, (3 or 4). *Prerequisite:* General Engineering Drawing 2.
12. GRAPHICAL CALCULATIONS.—Construction and uses of nomographs, coordinate papers (principally logarithmic and semi-logarithmic), various types of slide rules, and mechanical calculating devices; other methods of engineering calculations. For students in engineering; accepted as an approved elective in all curricula of the College of Engineering. S, I, and II, (1). *Prerequisite:* General Engineering Drawing 1; Mathematics 6a.

GEOGRAPHY

Requirements for L.A.S. Students

Major: 20 hours in geography, excluding Geography 1 or 1a, and including Geography 60a and at least five hours of other courses not open to freshmen.

Minors: 20 hours chosen from one or two of the following subjects: botany, economics, education, geology, history, political science, sociology, and zoology. At least eight hours must be taken in each subject if two are chosen. The curriculum on international affairs will be accepted as a minor.

Honors: Only those students who have 4 hours credit in Geography 60a and 60b and write a thesis will be recommended for graduation with honors. Each student who desires research must obtain a written statement from the instructor under whom he is to work and present it to the head of the department at the time of registration.

Courses for Undergraduates

1. ELEMENTS OF GEOGRAPHY.—The geographic point of view; elements of physical landscape; planetary relations, climate, climatic regions, land-forms; elements of material culture. Five hours of lecture, discussion, and quiz. S, (3 or 5);

- I and II, (5). Seniors and those with credit in Geography 3 receive only four hours credit.
2. ECONOMIC GEOGRAPHY.—Geographic conditions affecting industries, production, and commerce of the world; development and relation of commercial areas to location and availability of resources; markets and transportation routes. Discussion and quiz. S, I, and II, (5). Seniors and those with credit in Geography 3 receive only four hours credit. *Prerequisite:* Geography 1 or 1a.
- [3. WORLD REGIONAL GEOGRAPHY.—Open to all students who have no previous credit in college geography. I and II, (3).]
7. FIELD GEOGRAPHY.—Technics and methods of field investigation; reconnaissance and unit area mapping; collection and use of field data; organization and presentation of materials. Field trips limited to the local area. II, (2). *Prerequisite:* Geography 1 or 1a, or consent of instructor.
- S9. TEACHING OF GEOGRAPHY.—Review of fundamental factual material; teaching devices; selection of equipment, including texts for upper grade and high school geography teachers. S, (2½).
14. INTRODUCTION TO METEOROLOGY.—S, (2½); I and II, (3). *Prerequisite:* Sophomore standing, or consent of instructor.
16. GEOGRAPHY OF ILLINOIS.—S and I, (3). *Prerequisite:* Geography 1, 1a, or 3, or consent of instructor.
- [18. INTERPRETATION OF MAPS AND AERIAL PHOTOGRAPHS.—Nature and use of regional and topographic maps, hydrographic and pilot charts, and aerial photographs. Students in civil engineering will receive no credit for this course. II, (3).]
- [S20. POLITICAL GEOGRAPHY.—World patterns of nations in relation to their natural environmental backgrounds; European nations and their empires; national structures in Asia; Western Hemisphere nations. S, (2½). *Prerequisite:* Sophomore standing, or consent of instructor.]
22. GENERAL GEOGRAPHY.—A brief survey of the physical environment followed by a more detailed treatment of earth resources and of the causes and consequences of man's chief productive activities from a geographic point of view. For commerce students only. Not open to students who have credit in Geography 1, 1a, 2, 2a, or 3. S, I, and II, (5). Seniors receive only four hours credit.

Courses for Advanced Undergraduates

- [4a. GEOGRAPHY OF EASTERN NORTH AMERICA.—Regional study. Lectures and discussions. II, (3). *Prerequisite:* Junior standing; eight hours of geography. Given in alternate years.]
- [4b. GEOGRAPHY OF WESTERN NORTH AMERICA.—Regional study. Lectures and discussions. I, (3). *Prerequisite:* Junior standing; eight hours of geography. Given in alternate years.]
- 4c. GEOGRAPHY OF CARIBBEAN AMERICA.—I, (3). *Prerequisite:* Junior standing; eight hours of geography. Given in alternate years.
5. GEOGRAPHY OF SOUTH AMERICA.—II, (3). *Prerequisite:* Junior standing; eight hours of geography.

Courses for Advanced Undergraduates and Graduates

8. GEOGRAPHY OF EUROPE.—Influences of climate, surface features, and natural resources on distribution of peoples, their industries, and routes of trade; new boundaries and economic problems. S, (3). *Prerequisite:* Eight hours of geography, including Geography 2 or 2a; junior standing.
11. GEOGRAPHY OF ASIA.—I, (3). *Prerequisite:* Junior standing; eight hours of geography. Given in alternate years.
- 14a. CLIMATES OF THE CONTINENTS.—S, (2½). *Prerequisite:* Geography 1 or 1a, and 14. Given in alternate years.
53. PRODUCTION OF THE GREAT WORLD STAPLES.—I, (3). *Prerequisite:* Geography 2 or 2a; one regional course; junior standing. Given in alternate years.
54. ADVANCED COMMERCIAL GEOGRAPHY.—I, (3). *Prerequisite:* Geography 2 or 2a; one regional course; junior standing. Given in alternate years.
- 60a-60b. INTRODUCTION TO RESEARCH.—Limited to seniors and graduates whose major is geography, and to seniors whose major is in other departments who have twelve hours of geography, including three hours in a regional course. S, I, and II, (2).

Courses for Graduates

NOTE: For graduate work in geography the student must have had at least the equivalent of an undergraduate major in geography. Candidates for a master's degree should obtain from the department a copy of special regulations governing a preliminary examination for transfer students and a comprehensive examination near the close of the second semester of residence for all candidates.

134. ADVANCED STUDIES IN GEOGRAPHY.—S, I, and II, ($\frac{1}{2}$ to 4 units).

135. RESEARCH.—S, I, and II, ($\frac{1}{2}$ to 4 units).

GEOLOGY

Requirements for L.A.S. Students

Major: 20 hours in geology, excluding Geology 1, 1a, 43, 44, and including at least five hours of courses not open to freshmen or sophomores. The following courses are considered most fundamental: Geology 2a, 6, 7, 9, 15, 16, 20, 24, and 33.

Minors: 20 hours chosen from one or two of the following subjects: astronomy, botany, chemistry, economics, geography, mathematics, physics, zoology, mining engineering, and civil engineering, after consultation with the Department of Geology. At least eight hours must be taken in each subject if two are chosen.

Honors: Only those students who have 4 hours credit in Geology 60a or 60b and write a thesis will be recommended for graduation with honors. Each student who desires research must obtain a written statement from the instructor under whom he is to work and present it to the head of the department at the time of registration.

Students planning to make geology their major subject are advised to take General Engineering Drawing 1 and Civil Engineering 1 or 15. Those planning to specialize in historical or paleontologic geology are advised to take Zoology 1 and 7, or 51 and 52, and Botany 1a. Those planning to follow economic geology should take foundation courses in chemistry, physics, and mathematics. Those desiring training which leads to executive positions with companies engaged in the development of various mineral industries should select appropriate courses in geology, after consulting with the head of the department, and should include in their program the following courses: Accountancy 1a, 1b, 12; Economics 2, 3, 35; Business Law 1a, 1b. At least one year of graduate work is very desirable as further training for all professional work in geology.

Courses for Undergraduates

1. GENERAL GEOLOGY.—Cultural course. Surface features; agencies and processes of change; development of topographic forms; rocks and minerals; volcanoes, earthquakes, mountain-making forces; introduction to the history of the earth and the development of life. Lectures, quiz, and one field trip. S, I, and II, (3). Seniors receive only two hours credit.
- 1a. GENERAL GEOLOGY LABORATORY.—I and II, (2). *Prerequisite:* Geology 1, or concurrent registration therein, or Division of General Studies 4a-4b.
- 2a. HISTORICAL GEOLOGY.—Evolution of the earth and its life. Discussion and quiz. S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* Geology 1, or 43, or 44, or Division of General Studies 4a.
4. FIELD WORK.—Field observations in southern Indiana, eastern Kentucky and Tennessee, including visits to the Great Smoky Mountains, the Cumberland Gap region, and Mammoth Cave. II, (2). Credit will be given only on completion of a satisfactory written report. *Prerequisite:* Geology 1 or 43, or 44, or Division of General Studies 4a-4b; consent of instructor.
20. GENERAL MINERALOGY.—Crystallography; minerals of economic and scientific importance; blow-pipe analysis. Quiz and laboratory. S, I, and II, (3). *Prerequisite:* One semester of college chemistry.
43. ENGINEERING GEOLOGY.—S, I, and II, (3). *Prerequisite:* Sophomore standing in the College of Engineering.
44. AGRICULTURAL GEOLOGY.—For agriculture students only. I and II, (3). *Prerequisite:* One semester of chemistry.

Courses for Advanced Undergraduates and Graduates

6. OPTICAL MINERALOGY.—Optical properties of minerals and use of the petrographic microscope. Emphasis on oil immersions. Designed for students in geology, ceramics, agriculture, chemistry, or physics. Lectures and laboratory. I and II, (3). *Prerequisite:* Geology 20; junior standing.
7. PETROLOGY.—Composition, structures, textures, origin, and classification of rocks. Studies of thin sections and hand specimens. Lectures and laboratory. II, (4). *Prerequisite:* Geology 6.
9. INVERTEBRATE PALEONTOLOGY.—Fossil groups in biological sequence. Lectures and laboratory. I, (3). *Prerequisite:* Geology 2a; junior standing.
15. STRUCTURAL GEOLOGY.—Rock deformation and its results. Lectures, laboratory, and field trip. I, (3). *Prerequisite:* Geology 2a; junior standing.
16. STRATIGRAPHY.—Fossil faunas, with special reference to Paleozoic invertebrates, correlation, and stratigraphy. II, (3). *Prerequisite:* Geology 9.
- [17. PHYSIOGRAPHIC GEOLOGY.—II, (3). *Prerequisite:* Geology I, or Geography I or Ia.]
24. FIELD METHODS.—Lecture, quiz, and field trips. Mapping of an area in southern Illinois. II, (3). Credit will be given only on completion of a satisfactory written report. *Prerequisite:* Geology 2a; junior standing.
33. GEOLOGIC MAPS.—Interpretation of topographic, geologic, and structural maps. II, (3). *Prerequisite:* Geology 2a; junior standing.
39. GEOLOGY OF ILLINOIS.—I, (3). *Prerequisite:* Geology 2a; junior standing. Given in alternate years.
- 60a-60b. INTRODUCTION TO RESEARCH.—Limited to seniors whose major is geology and mechanical engineering students who take Geology 61a-61b. Required of geology majors graduating with honors. S, I, and II, (2).
- [61a-61b. APPLIED PETROLEUM GEOLOGY.—Primarily for students in the College of Engineering. Continuous through I and II, (3). *Prerequisite:* Geology 43 and 2a, or consent of head of department.]
95. ECONOMIC GEOLOGY (NON-METALLIC).—Nature, occurrence, origin, and uses of coal, oil, and other non-metallic deposits. II, (3). *Prerequisite:* Geology 2a or 43, and 20. Given in alternate years.
- [96. ECONOMIC GEOLOGY (METALLIC).—Nature, occurrence, and origin of metalliferous deposits; theories of ore deposition. II, (3). *Prerequisite:* Geology 2a or 43, and 20. Given in alternate years.]

Courses for Graduates

NOTE: For graduate work in geology the student must usually have had at least an undergraduate major in geology and an acceptable field training. The following undergraduate courses are recommended: Geology 2a, 20, 9, 15, 16, 24, 33, 6, 7. Graduate students in other departments may nevertheless be admitted to certain graduate courses in geology. A candidate for a master's degree in geology must pass a general examination toward the close of the second semester of residence, covering the fields of geology as embraced in the courses listed above and in the graduate courses taken.

102. PETROGRAPHY.—I and II, (1 unit). Given in alternate years.
125. SEDIMENTATION.—I, (1 unit).
126. SEDIMENTARY PETROLOGY.—II, (1 unit).
134. ADVANCED STUDIES IN GEOLOGY.—Supervised individual study in metamorphism, pre-Cambrian geology, ore deposition, and other subjects. S, I, and II, (½ to 2 units).
135. RESEARCH.—Individual work under supervision of members of the staff in their respective fields. S, I, and II, (½ to 4 units).
142. STRATIGRAPHIC GEOLOGY: PALEOZOIC.—I, (1 unit).
143. STRATIGRAPHIC GEOLOGY: MESOZOIC AND CENOZOIC.—II, (1 unit).
145. MICROPALAEONTOLOGY.—Classification of microorganisms, foraminifera, ostracods, conodonts, solecodonts, and other major groups; stratigraphic correlations. S, (1 unit).
- [151. ADVANCED DYNAMIC GEOLOGY.—II, (1 unit). Given in alternate years.]
- [152. ADVANCED HISTORICAL GEOLOGY.—II, (1 unit). Given in alternate years.]
- [160. PETROLEUM GEOLOGY.—Continuous through I and II, (1 unit). Given in alternate years.]

GERMAN

Requirements for L.A.S. Students

Major: 20 hours in German, excluding courses 1a and 1b, and including six hours in courses with a prerequisite of three years of college German or equivalent.

Minors: 20 hours in not more than two subjects chosen from the following list, with at least eight hours in each subject: education, English (excluding Rhetoric 1 and 2), French (excluding 1a), Greek, history, Italian, Latin, philosophy, Portuguese, Spanish (excluding 1a).

Courses for Undergraduates

- 1a. ELEMENTARY COURSE.—Grammar and reading for beginners. Not open to students who have had high school credit in this language. S, I, and II, (4). Seniors receive only three hours credit. No credit toward graduation is given for German 1a without German 1b.
- 1b. ELEMENTARY COURSE (CONTINUED).—Grammar and reading. S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* German 1a, or one year of high school German, or equivalent.
- 2a. INTERMEDIATE COURSE.—Modern narrative prose. Oral practice and sight reading. S, I, and II, (4). *Prerequisite:* German 1b, or two years of high school German, or equivalent.
- 2b. INTERMEDIATE COURSE (CONTINUED).—Literary reading. Modern narrative prose, but at the option of the instructor one of the easier classical works may also be read. Oral practice and sight reading. S, I, and II, (4). *Prerequisite:* German 2a, or three years of high school German, or equivalent.
6. SCIENTIFIC READING.—Rapid reading of scientific prose. Parallel with German 2b. Students may not take both German 2b and 6 for a total of more than four hours credit without permission of the department. II, (4). *Prerequisite:* German 2a, or three years of high school German, or equivalent.

Courses for Advanced Undergraduates

7. MODERN FICTION.—Intended primarily for students who take German 2b the first semester. S and II, (3). *Prerequisite:* German 2b, or equivalent.
10. INTRODUCTORY GOETHE COURSE.—I, (3). *Prerequisite:* German 2b, or equivalent.
14. INTRODUCTORY SCHILLER COURSE.—Schiller's life; reading of works illustrating different periods of his development. II, (3). *Prerequisite:* German 2b, or equivalent.
- 16a. CONVERSATION AND WRITING.—S, I, and II, (2). *Prerequisite:* German 2b, or equivalent.
- 16b. CONVERSATION AND WRITING.—I, (2). *Prerequisite:* German 16a, or equivalent, or consent of instructor.
- 24a. NINETEENTH CENTURY DRAMA.—I, (2). *Prerequisite:* German 2b, or equivalent.
- 24b. NINETEENTH CENTURY DRAMA.—II, (2). *Prerequisite:* German 24a, or equivalent.
25. TEACHERS' COURSE.—I, (2). *Prerequisite:* Three years of college German, or equivalent.
- [28a. LYRICS AND BALLADS.—I, (2). *Prerequisite:* German 2b, or equivalent; sophomore standing.]
- [28b. LYRICS AND BALLADS.—II, (2). *Prerequisite:* German 28a, or equivalent.]
29. ADVANCED CONVERSATION AND WRITING.—II, (2). *Prerequisite:* German 16b, or consent of instructor.
- 30a-30b. SENIOR THESIS AND HONORS COURSE.—Intended primarily for candidates for honors in German, but open to other seniors. I and II, (2). *Prerequisite:* Three years of college German, or equivalent.

Courses for Advanced Undergraduates and Graduates

- 19a. GOETHE'S FAUST.—I, (2). *Prerequisite:* Three years of college German, or equivalent.
- 19b. GOETHE'S FAUST (CONTINUED).—II, (2). *Prerequisite:* German 19a, or equivalent.
- 26a. GERMAN LITERATURE TO 1800.—I, (3). *Prerequisite:* Three years of college German, or equivalent.

- 26b. GERMAN LITERATURE IN THE NINETEENTH CENTURY.—II, (3). *Prerequisite:* German 26a, or equivalent.
31. MIDDLE HIGH GERMAN.—S, (2). *Prerequisite:* Senior standing; three years of college German, or equivalent.
- [32. HISTORY OF GERMAN CIVILIZATION.—S, (2 or 3). *Prerequisite:* Three years of college German, or equivalent, or consent of instructor.]
- 54a-54b. INTRODUCTION TO COMPARATIVE LITERATURE.—See English 54a-54b.

Courses for Graduates

NOTE: Students desiring to take German as a major should have completed a four-year course of undergraduate study in German corresponding to the four-year course at this University, and should be familiar with the principal works of the writers of the classical and modern periods of German literature, show a general knowledge of the history of German literature, and be able to follow lectures in the German language. Of collateral subjects, a reading knowledge of French is important and is required for advanced graduate work. Some acquaintance with Latin and with German history is highly desirable.

101. SEMINAR IN LITERARY CRITICISM.—I and II, (1 unit).
102. THESIS AND RESEARCH IN SPECIAL TOPICS.—S, I, and II, (½ to 4 units).
[104. GOTHIC.—S, (1 unit).]
105. OLD HIGH GERMAN.—I, (1 unit).
125. HISTORY OF THE GERMAN LANGUAGE.—II, (1 unit).
127. GERMAN ROMANTICISM.—S, (1 unit).

HISTORY

Requirements for L.A.S. Students

Major: 20 hours in history, including (a) ten hours in courses having junior standing as a prerequisite, and (b) any other courses offered by the department except courses taken in the freshman year.

Minors: 20 hours (excluding courses taken in the freshman year) selected from one or two of the following subjects: economics, English and American literature, geography, law, philosophy, political science, and sociology. Courses in one ancient or modern language (except such as are primarily designed for freshmen) will be accepted as one of the two minor subjects. The curriculum on international affairs will be accepted as a minor.

Courses for Undergraduates

NOTE: Division of General Studies 2a and 2b are accepted as satisfying the prerequisite of a year of college history in all cases in which it is required.

- 1a. CONTINENTAL EUROPEAN HISTORY TO 1815.—Europe from the age of the great discoveries to the close of the Napoleonic wars. I, (4). Seniors receive only three hours credit.
- 1b. CONTINENTAL EUROPEAN HISTORY, 1815-1946.—Development of European nationalism, liberalism, and imperialism; World War; reconstruction. S and II, (4). Seniors receive only three hours credit.
- 2a. HISTORY OF ENGLAND.—History of the British peoples to the close of the seventeenth century (1688). I, (3). Seniors receive only two hours credit.
- 2b. HISTORY OF ENGLAND, 1688-1946.—Modern history of the United Kingdom; colonial and imperial development. S and II, (3). Seniors receive only two hours credit.
- 3a. HISTORY OF THE UNITED STATES TO 1828.—Colonial foundations, the movement for independence, early years of the Republic. S and I, (3). *Prerequisite:* Sophomore standing.
- 3b. HISTORY OF THE UNITED STATES, 1828-1946.—A century of national life and organization. S, I, and II, (3). *Prerequisite:* Sophomore standing.
- 5a. THE ANCIENT WORLD.—Ancient empires and Greece. I, (3). *Prerequisite:* Sophomore standing.
- 5b. THE ANCIENT WORLD.—Rome. S and II, (3). *Prerequisite:* Sophomore standing.
18. TEACHING OF HISTORY.—II, (2). *Prerequisite:* One year of college history; senior standing.

19. HISTORY OF AMERICAN IMMIGRATION, COLONIAL AND NATIONAL PERIODS.—II, (2). *Prerequisite:* One year of college history; junior standing.
63. HISTORY OF LAND WARFARE.—I, (3). *Prerequisite:* One year of college history; junior standing.
64. HISTORY OF NAVAL WARFARE.—II, (3). *Prerequisite:* One year of college history; junior standing.
- 90a-90b. THESIS.—Special training in historical investigation. Continuous through I and II, (2 to 4). *Prerequisite:* Senior standing.
- 91a-91b. READING COURSE.—Selected fields chosen in consultation with the instructor. S, and continuous through I and II, (2 to 4). Open only to juniors and seniors of high standing.

Courses for Advanced Undergraduates and Graduates

Junior standing is prerequisite to all the following courses.

14. AMERICAN COLONIES IN THE SEVENTEENTH CENTURY.—I, (3).
- 16a. FOUNDATIONS OF AMERICAN SOCIETY: THE COLONIES IN THE EIGHTEENTH CENTURY (TO 1763).—I, (3). *Prerequisite:* One year of college history.
- 16b. FOUNDATIONS OF AMERICAN SOCIETY: THE TRANSITION TO NATIONAL LIFE AND ORGANIZATION, 1763-1789.—II, (3). *Prerequisite:* One year of college history.
- 17a. SOCIAL AND ECONOMIC FORCES IN THE UNITED STATES IN THE NINETEENTH CENTURY (TO 1860).—I, (3). *Prerequisite:* History 3b.
- 17b. SOCIAL AND ECONOMIC FORCES IN THE UNITED STATES SINCE 1860.—II, (3). *Prerequisite:* History 3b.
20. THE SOUTH, OLD AND NEW.—I, (3). *Prerequisite:* One year of college history.
21. HISTORY OF THE UNITED STATES SINCE 1877.—S, (2½); II, (3). *Prerequisite:* History 3b.
- 22a. HISTORY OF THE WEST, 1634-1774.—I, (2). *Prerequisite:* One year of college history.
- 22b. HISTORY OF THE WEST, 1774-1830.—II, (2). *Prerequisite:* One year of college history.
- 23a. FOUNDATIONS OF ENGLISH AND AMERICAN DEMOCRATIC INSTITUTIONS, 1603-1642.—I, (2). *Prerequisite:* One year of college history or political science.
- 23b. FOUNDATIONS OF ENGLISH AND AMERICAN DEMOCRATIC INSTITUTIONS, 1642-1714.—II, (2). *Prerequisite:* One year of college history or political science.
24. HISTORY OF ILLINOIS, 1809-1946.—I, (2). *Prerequisite:* One year of college history.
25. THE CIVIL WAR AND RECONSTRUCTION.—S, (2½); I, (3). *Prerequisite:* One year of college history.
26. HISTORY OF LATIN-AMERICA TO 1824.—I, (3). *Prerequisite:* One year of college history.
27. HISTORY OF LATIN-AMERICA SINCE 1824.—S, (2½); II, (3). *Prerequisite:* One year of college history.
- 31a. HISTORY OF MODERN ITALY, 1700-1831.—I, (2). *Prerequisite:* One year of college history.
- 31b. HISTORY OF MODERN ITALY, 1831-1946.—II, (2). *Prerequisite:* One year of college history or political science.
- 32a. EUROPEAN HISTORY, 1870-1918.—S and I, (3). *Prerequisite:* One year of college history, political science, or economics.
- 32b. EUROPEAN HISTORY, 1918-1946.—S, (2½); II, (3). *Prerequisite:* One year of college history or political science.
- 33a. TSARIST RUSSIA: ITS BACKGROUND, INSTITUTIONS, AND PROBLEMS (TO 1825).—I, (3). *Prerequisite:* One year of college history.
- 33b. MODERN RUSSIA AND ITS PROBLEMS, 1825-1946.—II, (3). *Prerequisite:* One year of college history.
- 34a. DEVELOPMENT OF MODERN EUROPE: ABSOLUTISM AND COLONIAL EXPANSION, 1648-1789.—I, (3). *Prerequisite:* One year of college history.
- 34b. DEVELOPMENT OF MODERN EUROPE, 1789-1848.—II, (3). *Prerequisite:* One year of college history.
- 37a. EASTERN ASIA TO 1839.—I, (2). *Prerequisite:* One year of college history.
- 37b. EASTERN ASIA, 1843-1946.—II, (2). *Prerequisite:* One year of college history.
- 39a-39b. THE AGE OF THE PROTESTANT AND THE CATHOLIC REFORMATION, 1500-1648.—I and II, (3). *Prerequisite:* One year of college history.
- 40a. HISTORY OF THE BRITISH COMMONWEALTH IN THE NINETEENTH AND TWENTIETH CENTURIES (TO 1870).—I, (2). *Prerequisite:* One year of college history.

- 40b. HISTORY OF THE BRITISH COMMONWEALTH IN THE NINETEENTH AND TWENTIETH CENTURIES (SINCE 1870).—II, (2). *Prerequisite:* One year of college history.
41. THE MIDDLE AGES.—S, (2½); I, (3). *Prerequisite:* One year of college history.
42. MEDIEVAL CIVILIZATION, RELIGIOUS AND INTELLECTUAL.—II, (3). *Prerequisite:* One year of college history or political science.
- 44a. CONSTITUTIONAL HISTORY OF ENGLAND.—I, (3). *Prerequisite:* One year of college history.
- 44b. CONSTITUTIONAL HISTORY OF ENGLAND.—II, (3). *Prerequisite:* One year of college history or political science.
- 46a. SOCIAL AND ECONOMIC HISTORY OF ENGLAND TO 1848.—I, (3). *Prerequisite:* One year of college history.
- 46b. SOCIAL AND ECONOMIC HISTORY OF ENGLAND SINCE 1848.—S, (2½); II, (3). *Prerequisite:* One year of college history.
- [47a. HISTORY OF ENGLAND IN THE LATER MIDDLE AGES, 1377-1485.—I, (3). *Prerequisite:* One year of college history.]
- [47b. HISTORY OF ENGLAND IN THE TUDOR PERIOD, 1485-1603.—II, (3). *Prerequisite:* One year of college history or economics.]
- [S48. BRITISH FOREIGN POLICY, 1815-1939.—S, (2½). *Prerequisite:* One year of college history.]
- [S48b. ENGLISH FOREIGN POLICY IN THE NINETEENTH AND TWENTIETH CENTURIES.—S, (2½). *Prerequisite:* One year of college history.]
- [55. HISTORY OF THE ANCIENT GREEK STATES.—I, (3). *Prerequisite:* One year of college history.]
56. HISTORY OF THE ROMAN REPUBLIC.—I, (3). *Prerequisite:* One year of college history or consent of instructor.
- [57a. ALEXANDER THE GREAT AND HIS SUCCESSORS.—II, (3). *Prerequisite:* One year of college history.]
- [57b. ANCIENT IMPERIALISM: THE ROMAN EMPIRE.—II, (3). *Prerequisite:* One year of college history.]
- [60. THE UNITED STATES IN THE FIRST WORLD WAR.—S, (2½); II, (3).]
- 62a. POLITICAL AND CONSTITUTIONAL DEVELOPMENT OF THE UNITED STATES TO 1809.—I, (3). *Prerequisite:* One year of college history or political science.
- 62b. POLITICAL AND CONSTITUTIONAL DEVELOPMENT OF THE UNITED STATES SINCE 1809.—II, (3). *Prerequisite:* One year of college history or political science.

Courses for Graduates

NOTE: Graduate work in history presupposes two years of college work in this subject, or sixteen semester hours, which should include courses in European and American history equivalent to History 1a-1b and 3a-3b. Linguistic preparation, especially in French and German, is important. For medieval history some knowledge of Latin is essential, and Spanish is useful for certain fields.

Graduate courses in history are of three kinds: (1) information and guidance in general reading; (2) instruction in methodology, historiography, and bibliography; (3) seminars for the study of special fields with a view to training in methods of historical criticism and research.

Graduate students have an opportunity to pursue research in connection with the Illinois Historical Survey, an organization carrying on systematic studies in the history of Illinois. Through the use of materials collected by this survey, graduate students in the department have been given useful training in the study of manuscript as well as of printed material.

Each candidate for a master's degree in history is required to pass a general written examination early in the year and is expected to devote special attention to two of the following fields: ancient history, medieval history of continental Europe, modern history of continental Europe, English history, American history, Latin-American history, the Near East, the Far East. All candidates are expected to have a general knowledge of historical method (see course 103) and a working knowledge of one foreign language, ordinarily French or German.

A candidate who selects history as his major subject for the Ph.D. degree should prepare himself for examination in four of the following fields, stating the particular field in which he wishes to specialize and in which his thesis is to be written; ancient history, medieval history of continental Europe to 1300, continental Europe from 1300 to 1648, continental Europe and its dependencies since 1648, England and its depend-

encies, the United States, Latin-America, the Near East, and the Far East. Any one of these fields may also be used as a first minor; one of the minors, however, must be chosen from subjects offered by other departments, such as political science, economics, sociology, philosophy, education, and departments concerned with the history of literature.

- 101b. SEMINAR IN AMERICAN HISTORY.—II, (1 unit).
 S101. SEMINAR IN AMERICAN HISTORY.—Selected subjects in American national development, 1776-1946. S, (1 unit).
 102a. SEMINAR IN ENGLISH HISTORY: THE REIGN OF HENRY VIII, 1530-1540.—I, (1 unit).
 102b. SEMINAR IN ENGLISH HISTORY: ENGLAND UNDER ELIZABETH, 1580-1590.—II, (1 unit).
 S102. BRITISH FOREIGN POLICY, 1919-1939.—The relations of Great Britain and the major powers from the peace of Versailles to the outbreak of the second world war. S, (1 unit).
 [S102b. ENGLAND UNDER THE NATIONAL GOVERNMENT, 1931-1945.—S, (1 unit).]
 103. HISTORICAL METHOD.—Required of all candidates for an advanced degree in history who do not present evidence of similar training elsewhere. I, (1 unit).
 104a-104b. SEMINAR IN MODERN HISTORY: PROBLEMS IN CONTEMPORARY HISTORY SINCE 1914.—I and II, (1 unit).
 [S104. PROBLEMS OF PEACE AND WAR IN EUROPE, 1924-1945.—S, (1 unit).]
 105. RESEARCH IN SPECIAL TOPICS.—Individual direction in research and guidance in writing theses for advanced degrees. S, I, and II, (1 to 2 units).
 106a-106b. SEMINAR IN MEDIEVAL HISTORY.—I and II, (1 unit).
 S106. SEMINAR IN MEDIEVAL HISTORY: MEDIEVAL STRUGGLE FOR WORLD UNITY.—S, (1 unit).
 117a. PROBLEMS IN THE SOCIAL HISTORY OF THE UNITED STATES, 1775-1830.—I, (1 unit).
 117b. PROBLEMS IN THE SOCIAL HISTORY OF THE UNITED STATES, 1877-1890.—II, (1 unit).
 [S117b. PROBLEMS IN THE SOCIAL HISTORY OF THE UNITED STATES SINCE 1900.—S, (1 unit).]
 [S122a. THE FRENCH AND BRITISH IN THE WEST, 1749-1763.—S, (1 unit).]
 122b. THE WESTWARD MOVEMENT, 1755-1761.—I, (1 unit).
 122c. THE WESTWARD MOVEMENT, 1761-1765.—I, (1 unit).
 126. SEMINAR IN LATIN-AMERICAN HISTORY: THE ABC POWERS AND MEXICO.—S, (1 unit).
 127a. SEMINAR IN LATIN-AMERICAN HISTORY: THE REVOLUTIONARY PERIOD.—I, (1 unit).
 127b. SEMINAR IN LATIN-AMERICAN HISTORY: THE ABC POWERS AND MEXICO.—II, (1 unit).
 [S134. STUDIES IN THE ENLIGHTENMENT, 1660-1789.—S, (1 unit).]
 138a-138b. HISTORY OF FRANCE, 1515-1547.—I and II, (1 unit).
 150a-150b. SEMINAR IN ANCIENT HISTORY.—I and II, (1 unit).

HOME ECONOMICS

Requirements for Agriculture Students

See General Curriculum in Home Economics (page 155).

Requirements for Education Students

See Curriculum in Home Economics Education (page 170).

Requirements for L.A.S. Students

Major in Home Economics: 20 hours as specified in Groups II and III, on page 156. (The courses specified in Group I are required, although they are not counted toward the major. The following courses are also required: Art Ia; Chemistry 1 (or 2), 5, and 32 (or 34); Economics 2; Psychology 1; Sociology 1; at least six hours in English literature; and at least eight hours in bacteriology and physiology. Some of these required courses may be counted in Minor A or Minor B as shown below.)

Minor A: 20 hours chosen from one or two of the following subjects: chemistry, bacteriology. At least eight hours must be taken in each subject if two are chosen.

Minor B: 20 hours chosen from one or two of the following subjects: economics, psychology, sociology. At least eight hours must be taken in each subject if two are chosen.

Courses for Undergraduates Whose Major Is Not Home Economics

NOTE: Courses for undergraduates whose major is home economics are also open to undergraduates whose major is not home economics if these students have the prerequisites listed for the course and/or obtain the consent of the instructor. Students are referred particularly to Home Economics 2, 3, 7, 19, 29a, 29b, 30, 42, 55, 56, 56b.

38. ELEMENTARY NUTRITION.—Fundamental laws of human nutrition; application to the selection of an adequate diet. S, I, and II, (2). *Prerequisite:* Sophomore standing.
- 52a. TEXTILES AND CLOTHING.—Selection of textiles; psychology of clothing; pattern construction and use; construction processes using hand and machine sewing technics; care and repair of clothing. For students in occupational therapy only. I and II, (3).
- 52b. DECORATIVE PROCESSES.—Designing and construction of articles requiring knitting, crocheting, braiding, tatting, decorative stitches, applique or other decorative processes. For students in occupational therapy only. I and II, (2). *Prerequisite:* Home Economics 52a.
53. WEAVING.—Principles of hand weaving, origin, development, and appreciation of the art of weaving. For students in occupational therapy only. I and II, (3).
61. INTRODUCTION TO FOODS.—Standards of selection, preparation, and service of foods; grades, cost; consumers' problems. S, I, and II, (3). *Prerequisite:* Sophomore standing.
70. CLOTHING SELECTION.—Economic, artistic, psychologic, and hygienic problems in the selection of clothing. Includes no garment construction. S and II, (3). *Prerequisite:* Sophomore standing.
80. HOME MANAGEMENT.—Problems of home management, emphasizing personal and family finance, apportionment of time and energy, and problems of the consumer. S and I, (2). *Prerequisite:* Junior standing; consent of instructor.

Courses for Undergraduates Whose Major Is Home Economics

1. INTRODUCTION TO HOME ECONOMICS.—To give freshmen whose major is home economics a point of view regarding the importance of homemaking and to develop an understanding of the underlying educational philosophy of home economics. I, (1).
2. HOME ARCHITECTURE.—Selection of shelter for family living, standards, environment, family needs, areas for living, situation, economics, design, construction of the house, the utilities, making skeleton plans. I and II, (2). *Prerequisite:* Art 1a, or equivalent; sophomore standing.
3. HOME DECORATION.—Design applied to interiors; selection and arrangement of furniture, pictures and accessories; the treatment of walls, floors, and windows; historic, artistic, and economic aspects. I and II, (3). *Prerequisite:* Art 1a or equivalent. *Prerequisite or concurrent:* Art 1b or equivalent; sophomore standing.
4. INTRODUCTION TO FOODS AND NUTRITION.—Principles involved in the selection of food for health and physical fitness. I and II, (2). *Prerequisite or concurrent:* Chemistry 1 or 2.
5. DIETETICS.—Food requirements of normal adults and children; nutritive value of food materials; application to selection of adequate diets at different cost levels. S, I, and II, (3). *Prerequisite:* Physiology 1 or 1a; junior standing. *Prerequisite or concurrent:* Home Economics 59.
7. SELECTION AND CARE OF TEXTILES AND CLOTHING.—Cloth analysis, including fibre content, construction, design, and finish, through simple physical and chemical tests; wardrobe planning in relation to personality, individual figure, and color. I and II, (3). Seniors receive only two hours credit. *Prerequisite or concurrent:* Art 1a.
10. ORGANIZATION AND MANAGEMENT OF THE HOME.—Family income management; purchasing problems; time management; equipment. Emphasis on economic aspects. I and II, (3). *Prerequisite:* Economics 1 or 2; Home Economics 4; junior standing.

11. TEACHING OF HOME ECONOMICS.—Problems dealing with the teaching of home economics in the high school. Required of all who wish to be recommended to teach home economics. I and II, (3). *Prerequisite*: Home Economics 29a, 29b, and 59; senior standing.
14. HOME MANAGEMENT.—Analysis of problems in home management; making and executing plans. Conferences and laboratory work. The students reside continuously in the home management house for four weeks during the semester. I and II, (3). *Prerequisite*: Home Economics 5 and 10 and/or consent of instructor.
19. COSTUME DESIGN.—Designing distinctive costumes; draping and sketching original designs. I and II, (2). *Prerequisite*: Home Economics 7; Art 1a and 1b.
- 29a. CLOTHING.—Psychological, artistic, hygienic, economic, and sociological problems involved in planning and selecting the wardrobe. I and II, (2). *Prerequisite*: Home Economics 7, or consent of instructor.
- 29b. CLOTHING LABORATORY.—Fundamentals of clothing construction; fitting problems in the selection of ready-to-wear. I and II, (2). *Prerequisite or concurrent*: Home Economics 7, or consent of instructor.
30. CLOTHING.—Design and construction of clothing; designing with commercial patterns; purchasing problems. I and II, (3). *Prerequisite*: Home Economics 29a, 29b, and 19.
31. CLOTHING DESIGN AND CONSTRUCTION.—Problems in creating original designs; developing a more thorough understanding of the figure through design adaptation. Emphasis on adaptability to fabric draping or flat pattern construction. Investigation of sources of inspiration and relationship to significant trends in design. II, (4). *Prerequisite*: Home Economics 30 and 55; junior standing.
34. TEACHERS' COURSE IN CLOTHING.—Design and construction of clothing and household accessories; emphasis on essential technics, problems in fitting, clothing design, and other problems related to clothing. I, (2). *Prerequisite*: Home Economics 29a, 29b.
40. HOME CARE OF THE SICK.—Lectures and demonstrations. II, (1). *Prerequisite*: Junior standing in home economics.
42. HISTORY OF COSTUME.—Costumes and their settings from the Early Egyptian through the nineteenth century. I, (2).
- 43a-43b. PROBLEMS IN TEXTILES AND CLOTHING.—Investigation and report of specific problems in the field of textiles and clothing. I and II, (3). *Prerequisite*: Home Economics 30 or 51; consent of instructor; each student will undertake an individual problem which in some cases may involve prerequisites of chemistry and physics.
46. QUANTITY COOKERY.—Handling food materials in large quantities; time and cost studies. The department cafeteria and cooperating institutions are used for laboratory work. Course planned for students who expect to be dietitians in hospitals or other institutions or who plan to manage a school lunch. I and II, (3 or 5). *Prerequisite*: Home Economics 59; consent of instructor. A food handler's certificate is required before registering in this course.
47. INSTITUTION MANAGEMENT.—Purchase of food supplies and equipment for institutions; grades of food, judging of quality and cost in relation to season, pure food laws, and government inspection; the storeroom and its management; equipment and furnishing; institution housekeeping, floor plans and routing, specifications for equipment; inventory of equipment. Visits to stores and markets. I, (3). *Prerequisite or concurrent*: Home Economics 46; Economics 2; consent of instructor.
- [51. TEXTILES.—Textiles from the economic, artistic, physical, and chemical viewpoints. II, (3). *Prerequisite*: Chemistry 5; Economics 2; Home Economics 7; junior standing.]
55. FASHION ANALYSIS.—Factors affecting design, production distribution, promotion, and trends in fashion development. Forecasting methods of measurement and prediction. Price levels—relation to fashion cycle, quality in design, and workmanship. II, (3). *Prerequisite*: Junior standing.
56. THE CHILD AND HIS DEVELOPMENT.—Interrelationships in the home and in the community. Readings and discussions. Advanced courses in child development open only to those students who have had laboratory with this course (see Home Economics 56b). II, (3). *Prerequisite*: Psychology 1; junior standing or consent of instructor.

- 56b. LABORATORY IN CHILD DEVELOPMENT.—Can only be taken concurrently with Home Economics 56, I and II, (2). *Prerequisite:* Junior standing.
58. FOODS.—Composition and behavior of foods; principles of food preparation. I and II, (3). *Prerequisite:* Chemistry 32 or 33 or 34; Home Economics 4.
59. FOOD ECONOMICS.—Food buying and utilization; retail costs, brands and grades; preservation; legislation. S, I, and II, (3). *Prerequisite:* Economics 2; Home Economics 58.
65. HUMAN HEREDITY.—Heredity in man and its relation to various individual and social problems. Lectures, discussions, and demonstrations. I, (3). *Prerequisite:* Junior standing.
- 90a-90b. THESIS.—Intended primarily for candidates for honors but open to other seniors. I and II, (3 to 5). *Prerequisite:* Senior standing; approval of head of department.

Courses for Advanced Undergraduates and Graduates

9. HOME ECONOMICS EXTENSION.—The theory and practice of adult education for the improvement of family life; philosophy, psychology, technics, and evaluation of adult learning in home economics. S and II, (3). *Prerequisite:* Senior standing in home economics, consent of instructor.
- [S12. HOME EQUIPMENT.—Lectures, readings, laboratory, discussion, and individual problems; analysis of home equipment in relation to management; principles involved in lighting, heating, refrigeration, and power applications. S, (3). *Prerequisite:* Home Economics 10; junior standing.]
20. PHYSICAL GROWTH AND NUTRITION.—Lectures, readings, and discussions. I, (2). *Prerequisite:* Home Economics 5; senior standing; consent of instructor.
24. FARM HOME PLANNING IN RELATION TO FUNCTION.—Same as Agricultural Engineering 24. A study of housing as affected by modern trends in family life and details involved in planning a functional house. S and II, (2). *Prerequisite:* Home Economics 10, or consent of instructor; junior standing.
- [28. ORGANIZATION AND MANAGEMENT OF THE HOME.—II, (2). *Prerequisite:* Home Economics 10; consent of instructor.]
33. DIET IN DISEASE.—I and II, (3). *Prerequisite:* Home Economics 5.
35. PROBLEMS IN FOODS.—Applications of chemical and physical principles to advanced food problems. Group and individual work. II, (3). *Prerequisite:* Home Economics 63.
- 39a-39b. READINGS IN FOOD AND NUTRITION.—Reports, discussions, and review of scientific literature. I and II, (1). *Prerequisite:* Home Economics 5; senior standing. *Prerequisite or concurrent:* One of the following—Chemistry 50, Home Economics 20, 33, 35, 41, 63.
41. PROBLEMS IN NUTRITION.—Discussions and investigations. I and II, (3 to 5). *Prerequisite:* Chemistry 50; Home Economics 5; senior standing.
48. INSTITUTION DIETARIES AND ADMINISTRATION.—Dietary studies and menu making for various types of institutions such as dormitories, cafeterias, hospitals, and tearooms; problems of organization, personnel studies, administration of food service, records and cost accounting, professional ethics. Opportunity will be given for observation and practice in various fields. Field trip is required; approximate cost, \$40. II, (4). *Prerequisite:* Home Economics 5 and 46; consent of instructor.
- S49. PROBLEMS IN SCHOOL LUNCH OR INDUSTRIAL FEEDING.—S, (3). *Prerequisite:* Home Economics 5 or equivalent.
- 57a-57b. PROBLEMS IN HOME MANAGEMENT.—Individual investigation and report of specific problems in the following fields: (a) family relationships, (b) money management, (c) household management. S, I, and II, (3). *Prerequisite:* Home Economics 10, or 56 and 56b; consent of instructor.
- [S62. FOOD AND NUTRITION.—S, (3). *Prerequisite:* Home Economics 5; senior standing.]
63. EXPERIMENTAL FOODS.—A consideration of the manner in which such variables as ingredients, proportions, and technics in food preparation affect the quality of the product. S, I, and II, (3). *Prerequisite:* Home Economics 59; Bacteriology 5a.
66. ADVANCED PROBLEMS IN HOME GUIDANCE OF CHILDREN.—Open only to students with a major in home economics. II, (3). *Prerequisite:* Home Economics 56 and 56b.

Courses for Graduates

NOTE: Students preparing to make home economics their major subject for a master's degree should complete the undergraduate curriculum outlined on page 155, or should have equivalent training. Those who intend to do their major work in foods and nutrition should comply with the requirements of that field of concentration as provided in the undergraduate curriculum, or should have equivalent training.

Candidates for a master's degree in home economics with the major work in general home economics are required to take some advanced courses in education, economics, psychology, or sociology. Candidates for a master's degree in home economics with the major work in foods and nutrition are required to take Chemistry 50 (Biochemistry) or Chemistry 40-41 (Physical Chemistry), in addition to graduate courses in home economics.

Graduate students who choose home economics as their minor for the degree of Doctor of Philosophy must have adequate preparation in home economics, and must complete three units for a first minor or two units for a second minor. At least one unit must be taken in courses numbered above 100.

101. PROBLEMS IN FAMILY LIVING.—I, (1 unit).
102. RESEARCH.—Work may be taken in the following subjects: (a) nutrition, (b) foods, (c) household management. S, I, and II, ($\frac{1}{2}$ to 3 units).
103. SEMINAR IN NUTRITION.—I, ($\frac{1}{2}$ unit).
105. SEMINAR IN FOODS.—II, ($\frac{1}{2}$ unit).
106. SEMINAR IN HOUSEHOLD MANAGEMENT.—S and II, ($\frac{1}{2}$ to 1 unit).
107. PROBLEMS IN HUMAN NUTRITION.—II, ($\frac{1}{2}$ to 1 unit).

HORTICULTURE

Courses for Undergraduates

- 1a. INTRODUCTORY POMOLOGY AND ORNAMENTAL GARDENING.—Fruit growing and ornamental planting. Discussion and laboratory. I, (3). Seniors receive only two hours credit. *Prerequisite*: Botany 5.
- 1b. INTRODUCTORY VEGETABLE CROPS.—Vegetable growing. Lectures and discussions. II, (2). No credit allowed to juniors and seniors.
2. SMALL FRUIT CULTURE.—Grape, blackberry, raspberry, dewberry, currant, gooseberry, and strawberry. Recitations, reference work, and laboratory. S and II, (3). *Prerequisite*: Sophomore standing.
3. COMMERCIAL VEGETABLE PRODUCTION.—Lectures, reference readings, and laboratory. II, (3). *Prerequisite*: Horticulture 1b, or junior standing.
5. PLANT PROPAGATION.—Grafts, buds, layers, cuttings, seeds. Lectures, laboratory, and quizzes. I, (3).
- [7. SPRAYING.—II, (3). *Prerequisite*: Horticulture 1; Chemistry 1 or 2; junior standing.]
8. ORCHARDING.—Principal fruits, cultivation, harvesting, and marketing. Inspection trip required; estimated expense \$20. I, (5). *Prerequisite*: Horticulture 1a and 1b.
- 15a. GREENHOUSE MANAGEMENT.—Soils, fertilizers; potting and shifting plants; watering. Lectures, reference readings, and greenhouse work. II, (3). *Prerequisite*: Botany 5; Horticulture 5.
- 15b-15c. COMMERCIAL FLORICULTURAL CROPS.—Greenhouse plants and cut flowers for market; care, marketing. Lectures and greenhouse work. I and II, (3). *Prerequisite*: Horticulture 15a.
17. PLANT PATHOLOGY.—See Botany 7.
22. SPECIAL PROBLEMS.—Work may be taken in the following subjects: (a,f) pomology, (b,g) vegetable crops, (c,h) floriculture, (d,i) plant breeding, (e,j) plant pathology. S, I, and II, (3 to 5). *Prerequisite*: Twenty hours pertinent to the thesis problem or approval of head of department. Students may register in this course in either semester or in each of two semesters. A thesis will be required only if the course is taken during two semesters.
30. TENDER BEDDING PLANTS.—Tropical and sub-tropical plants used in outdoor bedding. Lectures and greenhouse work. II, (3). *Prerequisite*: Horticulture 15a.
31. GARDEN FLOWERS.—Propagation and growing of annuals, herbaceous perennials, bulbs, and shrubs for cut flowers and ornamental plantings. II, (3). *Prerequisite*: Botany 5.

- 32a-32b. FLORAL DECORATION.—Arrangement in baskets, designs, and bouquets; table and house decoration. For advanced floriculture students only. I and II, (3).
 [33. SYSTEMATIC POMOLOGY.—I, (2). *Prerequisite:* Horticulture 1a and 1b.]
 [57. SUMMER GARDEN MATERIALS.—S, (3).]

Courses for Advanced Undergraduates and Graduates

12. EVOLUTION OF HORTICULTURAL PLANTS.—History, classification, and distribution of cultivated plants; modification under culture; variation. I, (3). *Prerequisite:* Botany 5; junior standing; one year of horticulture or equivalent, exclusive of Horticulture 1a and 1b.
43. FLORICULTURAL PHYSIOLOGY.—Growth and development of ornamental plants, with special reference to environmental factors, light, temperature, moisture and gases, disease and insect control. Lectures and seminar. I, (3). *Prerequisite:* Botany 3; junior standing.
44. CURRENT POMOLOGICAL AND VEGETABLE CROPS LITERATURE.—Assigned topics; review of books, technical journals, and other publications. For juniors, seniors, and graduates specializing in pomology or vegetable crops. This course may be taken for four successive semesters, designated as Hort. 44a, 44b, 44c, and 44d. I and II, (1). *Prerequisite:* Junior standing.
45. PLANT NUTRITION.—Soil conditions in relation to the growth of ornamental plants; fertilizers; water supplies. II, (3). *Prerequisite:* Botany 3; Agronomy 2; junior standing.
- [51. FRUIT DISEASES.—Same as Botany 51. I, (3). *Prerequisite:* Botany 7 or 72.]
 52. VEGETABLE DISEASES.—Same as Botany 52. Symptomology; control measures. Laboratory and field studies. I, (3). *Prerequisite or concurrent:* Botany 7 or 72.
- [56. GROWING VEGETABLES FOR MANUFACTURE.—II, (3). *Prerequisite:* Horticulture 3, or consent of instructor; junior standing.]

Courses for Graduates

NOTE: Twenty hours of undergraduate work in horticulture and allied subjects are required of students who choose horticulture as a major, and twelve hours are required of those who select it as a minor. The department will waive certain of these requirements for some fields of major study if the student has had an equivalent preparation in the fundamental sciences. It is desirable, when the major field of study is decided upon during the junior or senior year, to select the fundamental science courses accordingly, and if possible, to include in the undergraduate preparation the elementary courses in German or French.

Candidates for the M.S. and Ph.D. degrees may specialize in floriculture, pomology, or vegetable crops. Advanced work in botany, chemistry, entomology, agronomy, or agricultural economics may advantageously be taken with horticulture to make a well-balanced program of graduate study.

103. VEGETABLE CROPS.—Cultural requirements and improvement of vegetables. Research and conferences. S, I, and II, ($\frac{1}{2}$ to 2 units).
- [106. VEGETABLE CROPS SEMINAR.—I, ($\frac{1}{4}$ unit).]
108. POMOLOGY RESEARCH.—Special problems. Work may be taken in the following subjects: (a) fruit breeding, (b) pomological physiology, (c) small fruits, (d) fruit structure and composition. S, I, and II, ($\frac{1}{2}$ to 4 units).
115. FLORICULTURE RESEARCH.—Horticultural status of flowering plants, or special problems in culture of greenhouse plants. I and II, (1 to 2 units).
120. POMOLOGY SEMINAR.—Discussion of current research in pomology and applied fields. I and II, ($\frac{1}{4}$ unit).
125. FRUIT DEVELOPMENT.—Lectures, assigned reading, and laboratory studies of the structure and development of edible fruits. Special attention is given to growth changes from the dormant bud to maturity. I, (1 unit).
130. PHYSIOLOGY OF FRUIT PRODUCTION.—Physiological processes, growth responses, and adaptation of fruit plants and the bearing of cultural practices upon yield. Laboratory investigations and assigned reading. I, (1 unit).
140. ADVANCED SMALL FRUIT CULTURE.—Results of recent research with small fruits, dealing especially with varieties and experimental plantings in the Experiment Station plots. Detailed studies of fruiting habits and the effect of cultural practices upon production. II, ($\frac{1}{2}$ to 1 unit).

150. RESEARCH IN HORTICULTURAL PATHOLOGY.—Same as Botany 100. Diseases of fruit, vegetable, and ornamental crops. Work may be taken in the following subjects: (a) fruits, (b) vegetables, (c) viruses, (d) ornamentals, (e) metabolism of microorganisms. Discussions, assigned readings, laboratory, and field work. A thesis or formal report is required if this course is taken for more than one unit a semester. S, I, and II, ($\frac{1}{2}$ to 4 units).
151. SPECIAL PROBLEMS IN FRUIT DISEASES.—Same as Botany 100. Special problems in fruit disease research, with field and laboratory work. I and II, ($\frac{1}{2}$ to 4 units).
152. SPECIAL PROBLEMS IN VEGETABLE DISEASES.—Same as Botany 100. I and II, ($\frac{1}{2}$ to 4 units).
- [177. VIRUS DISEASES OF PLANTS.—Same as Botany 177. Lectures, assigned readings, and laboratory studies. II, (1 unit).]

HYGIENE

Courses for Undergraduates

- [1. HYGIENE AND SANITATION.—Required of all students in the Division of General Studies of the College of Liberal Arts and Sciences. Continuous through I and II, (2 hours credit for the year).]
2. ESSENTIALS OF HYGIENE AND SANITATION.—Required of all undergraduate women during their first year of residence. I and II, (2). Seniors receive only one hour credit.
5. ELEMENTARY HYGIENE AND SANITATION.—Required of all undergraduate men during their first year of residence. I and II, (2). Seniors receive only one hour credit.
10. ADVANCED HYGIENE.—Especially suited to the needs of teachers, coaches, and social workers. I and II, (2). *Prerequisite*: Hygiene 2 or 5.
16. HEALTH FACTORS AND FIRST AID.—II, (2). *Prerequisite*: Hygiene 2; registration in occupational therapy curriculum.

JOURNALISM

Courses for Undergraduates

- 1-2. INTRODUCTION TO JOURNALISM.—Continuous through I and II, (1). *Prerequisite*: Sophomore standing.

Courses for Advanced Undergraduates

3. PRINCIPLES OF BROADCASTING.—An introductory course in the history of American broadcasting, comparative broadcasting systems, organization and operation of stations and networks, social and legal responsibilities of radio, codes and practices of broadcasting, and an introduction to radio audience measurement and survey methods. S, I, and II, (2). *Prerequisite*: Junior standing.
4. TYPOGRAPHY.—Same as Business Organization and Operation 44. Type faces, publishing, engraving, offset, etc. S, I, and II, (2). *Prerequisite*: Junior standing.
5. REPORTING.—News values and story form; gathering and writing news. S, I, and II, (3). *Prerequisite*: Junior standing.
6. REPORTING (CONTINUED).—News of public affairs. I and II, (3). *Prerequisite*: Journalism 5.
7. RADIO ANNOUNCING.—Laboratory practice in microphone technics, with emphasis on radio pronunciation, articulation, diction, and tempo. Voice recording and corrective drill in quality, flexibility, projection, and extemporaneous use. S, I, and II, (2). *Prerequisite*: Junior standing; Speech 10 or equivalent; consent of instructor.
10. PRINCIPLES OF ADVERTISING.—General principles of psychology applied to advertising. S, I, and II, (3). *Prerequisite*: Junior standing.
11. NEWSPAPER LAW.—Freedom of the press; the right to gather, publish, and comment on the news. I, (3). *Prerequisite*: Junior standing.
13. COPYREADING.—Newspaper desk work; editing the news; correction of faulty news stories. Some attention to head-writing, news pictures, and page makeup. S and I, (3). *Prerequisite*: Journalism 6; credit or registration in Journalism 4.

14. COPYREADING.—Handling wire copy; makeup and design of newspaper pages. S and II, (3). *Prerequisite*: Journalism 13.
15. TRADE AND TECHNICAL MAGAZINES.—Preparation of fact articles for trade journals, technical journals, house organs, and class publications; editing and management of journals in the field. II, (3). *Prerequisite*: Junior standing.
16. FEATURE ARTICLE WRITING.—Preparation of newspaper and magazine feature stories and articles; technics of marketing, market analysis, and selling of articles written in the course. S, (2). *Prerequisite*: Junior standing.
17. HISTORY OF JOURNALISM.—Forerunners of the press, beginnings of journalism in England and America, colonial press, journalism of the Revolution, the development of the party press, popular journalism in the United States, great editorial leaders, recent tendencies. I and II, (3). *Prerequisite*: Junior standing.
18. THE PRESS AND PUBLIC OPINION.—Critical analysis of the role of the press in a democracy; effects of newspaper practices on public opinion; the role of propaganda; international journalism and public opinion; problems of reporting public affairs. I and II, (3). *Prerequisite*: Junior standing.
- [20. EDITORIAL STUDIES AND WRITING.—I, (3). *Prerequisite*: Senior standing; Journalism 6.]
21. COMMUNITY AND COUNTRY JOURNALISM.—II, (3). *Prerequisite*: Senior standing in the School of Journalism.
23. PRESS PHOTOGRAPHY.—Taking of pictures illustrating the news; advanced reporting with a camera. I and II, (3). *Prerequisite*: Journalism 5.
24. AGRICULTURAL JOURNALISM.—Same as Agricultural Administration 1. Open to students in journalism, agriculture, and home economics. I, (3). *Prerequisite*: Junior standing.
26. ADVERTISING COPY AND LAYOUT I.—Same as Business Organization and Operation 26. The news approach to newspaper advertising; retail advertising as store and enterprise news, feature, and editorial copy; preparation of newspaper advertising units. S and II, (4). *Prerequisite*: Journalism 10, or consent of instructor.
29. ADVANCED REPORTING.—Advanced types of news investigations and treatment. I and II, (3). *Prerequisite*: Journalism 5 and 6, or equivalent.
30. RADIO NEWS.—News writing and editing for broadcasting; radio news style; preparation and practice for special-event reporting; processing radio news-service copy. I and II, (3). *Prerequisite*: Journalism 5 and 6.
31. RADIO SCRIPT WRITING.—Radio writing and program preparation; interviews, continuities, narrative and documentary scripts, dialogues, forums, and round tables. II, (3). *Prerequisite*: Journalism 30, or Journalism 3 and an advanced course in rhetoric.
33. ADVERTISING COPY AND LAYOUT II.—Same as Business Organization and Operation 33. Theory and practice in making advertising layouts for newspapers and magazines; advanced study of typography; study of the principles of design; advanced practice in writing copy and making layouts for newspapers and magazines. S and I, (3). *Prerequisite*: Journalism 26. For students in Fine and Applied Arts, Journalism 10 and Art 65.
34. ADVERTISING PROMOTION AND SALES.—Same as Business Organization and Operation 34. Sales problems, advertising promotion, advertising research, marketing research. I and II, (3). *Prerequisite*: Journalism 26 or 33.
- 35-36. CONTEMPORARY AFFAIRS.—Major news developments and their background, current political, economic, social, and scientific developments. Continuous through I and II, (2). *Prerequisite*: Junior standing.
41. NEWSPAPER MANAGEMENT I.—Principles and methods in the operation of the departmentalized daily, small daily, and weekly papers; editorial direction; plant operation; business management. I and II, (3). *Prerequisite*: Credit or registration in Journalism 4.
42. NEWSPAPER MANAGEMENT II.—II, (3). *Prerequisite*: Journalism 41.
43. NEWSPAPER CIRCULATION PROBLEMS.—I, (3). *Prerequisite*: Journalism 41.
44. RADIO PRODUCTION AND DIRECTION.—Principles and practices of programming; program production and promotion; public relations; station management. I and II, (3). *Prerequisite*: Senior standing in radio curriculum.
47. HIGH SCHOOL JOURNALISM.—Supervision of high school publications and high school studies in journalistic writing. II, (3). *Prerequisite*: Junior standing; Education 25.
50. CRITICAL WRITING AND REVIEWING.—II, (2). *Prerequisite*: Junior standing and Journalism 6, or consent of instructor.

52. PUBLIC RELATIONS.—The public relations counsel; factors within an institution bearing on satisfactory public relations; modification of private policies to meet public policy; external factors; determination of public attitude; opinion management. I, (2). *Prerequisite:* Senior standing in the School of Journalism, or consent of instructor.
- [54. PUBLICATION OF THE *Illini Observer*.—II, (3). *Prerequisite:* Editorial, Journalism 13, or consent of instructor; Advertising, Journalism 33.]
58. PRESS SYSTEMS OF THE WORLD.—Press of England, France, Germany, Italy, Russia, Latin America, China, and Japan; international organizations of the press. S and II, (2). *Prerequisite:* Junior standing.
- 60a-60b. THESIS COURSE.—Selected topics in the history of journalism or a contemporary phase of journalism. S, and continuous through I and II, (2). *Prerequisite:* Senior standing and 4.0 average.

Courses for Advanced Undergraduates and Graduates

22. RADIO LAW.—Federal legislation, with emphasis on the Communications Act of 1934 and the regulations of the Federal Communications Commission, legal problems in program operations, censorship and editorial selections, copyright, and author-producer relations. II, (2). *Prerequisite:* Journalism 11.
38. ADVERTISING CAMPAIGNS.—Same as Business Organization and Operation 18. Planning of campaigns; choice of appeals; media selection and use; sales promotion. I and II, (3). *Prerequisite:* Journalism 10 or Business Organization and Operation 8.
39. RADIO ADVERTISING.—Economics, standards, and ethics as applied to radio commercials; sponsorship; rates and advertising technics, including merchandising, marketing, servicing, and sales; radio copy and listener surveys. I and II, (2). *Prerequisite:* Journalism 10 or Business Organization and Operation 8.

Courses for Graduates

- 101a-101b. RESEARCH IN SPECIAL TOPICS (THESIS).—I and II, (1 to 2 units).
103. SEMINAR IN EDITORIAL PROBLEMS.—I and II, (1 to 2 units).
104. SEMINAR IN ADVERTISING PROBLEMS.—I and II, (1 to 2 units).

LABOR AND INDUSTRIAL RELATIONS

Courses for Graduates

- 101a-101b. PROBLEMS AND PRACTICES IN COLLECTIVE BARGAINING.—Nature and significance of labor agreements; union, management, and public interests in major provisions; negotiating techniques; administration of the agreement; methods of settling labor disputes, including grievance procedures, conciliation, fact-finding, and arbitration.

LANDSCAPE ARCHITECTURE

Courses for Undergraduates

11. HISTORY OF LANDSCAPE ARCHITECTURE.—Lectures, reference readings, library sketches, and reports. Required of freshmen in the professional course; open to other students by permission of instructor. I, (3).
- 30a-30b. ELEMENTS OF LANDSCAPE ARCHITECTURE.—Delineation of landscape forms, drafting, lettering, wash rendering, color and color harmony, elementary composition. Continuous through I and II, (3). Seniors receive only two hours credit.
- 31-32. ELEMENTARY LANDSCAPE DESIGN.—Principles of landscape composition, elements of the natural landscape, types of drafting. Lectures, reference readings, plan work, and field trips. I and II, (3). *Prerequisite:* Landscape Architecture 30b.
- 33-34. INTERMEDIATE LANDSCAPE DESIGN.—Gardens, estates, playgrounds, and small parks. Lectures, readings, written reports, sketching and plan work, field trips. I and II, (4). *Prerequisite:* Landscape Architecture 32.
- 43-44. LANDSCAPE CONSTRUCTION.—Grading plans, working drawings, specifications, reports. Continuous through I and II, (3). *Prerequisite:* Civil Engineering 18.

46. OFFICE PRACTICE IN LANDSCAPE ARCHITECTURE.—Professional ethics and practice; contracts and specifications. II, (2). *Prerequisite*: Landscape Architecture 35.
- 51-52. TREES AND SHRUBS.—Open only to landscape architecture and floriculture students. Continuous through I and II, (3). *Prerequisite*: Botany 5.
55. CARE OF PLANT MATERIALS.—Planting, pruning, insect pests, plant diseases, and tree surgery. I, (2). *Prerequisite*: Landscape Architecture 52; senior standing.
63. GARDEN DESIGN.—Open only to students in occupational therapy. II, (3).
64. APPRECIATION OF LANDSCAPE ARCHITECTURE.—For students not specializing in landscape architecture. II, (3). *Prerequisite*: Sophomore standing.
- 71-72. PLANNING OF TOWNS AND CITIES.—Development of communities; the city plan and its composing elements; streets, transit, transportation, and other utilities; parks, housing, zoning. Lectures, reference readings, and discussions. Open to students in other departments. Inspection trip required of all landscape students but optional for others. Continuous through I and II, (2). *Prerequisite*: Junior standing.
74. REGIONAL PLANNING.—Inter-relationships and planned arrangements of regions and groups of regions; metropolitan, county, state, and national planning. Open to students in other departments. II, (3). *Prerequisite*: Sophomore standing.

Courses for Advanced Undergraduates and Graduates

- 35-36. ADVANCED LANDSCAPE DESIGN.—Public and semi-public properties; schools, rural parks, golf courses, cemeteries. I and II, (5). *Prerequisite*: Landscape Architecture 34.
- 53-54. PLANTING DESIGN.—Plans, sketches, and models. Continuous through I and II, (4). *Prerequisite*: Landscape Architecture 34, 52; Horticulture 31.

Courses for Graduates

NOTE: The prerequisite for graduate work in landscape architecture is a bachelor's degree in landscape architecture comparable to the degree conferred by the University of Illinois. The prerequisite for graduate work in city planning is a bachelor's degree in architecture, civil engineering, landscape architecture, or the social sciences, and must include the following courses or their acceptable equivalent: Planning of towns and cities, 4 hours; Sociology (urban, rural or regional), 3 hours; Political Science (municipal government or municipal problems), 3 hours; Economics (public utilities or transportation), 3 hours; Design (either landscape or architectural design or highway and municipal design, airport design, regional design), 12 hours.

136. LANDSCAPE DESIGN.—Advanced course. I, (1 to 2 units).
 [137. CITY PLANNING AND DESIGN.—Special problems. I and II, (1 to 2 units).]
 [147. LANDSCAPE CONSTRUCTION.—Advanced course. I and II, (1 to 2 units).]
 [157. PLANTING DESIGN.—Advanced course. I and II, (1 to 2 units).]
 [158. SEMINAR.—I and II, (½ unit).]
 159. THESIS.—I, (1½ unit).

LAW

Courses for Advanced Undergraduates

- 1a. CONTRACTS I.—Patterson and Goble, *Cases on Contracts* (2d ed.), I and II, (3).
 1b. CONTRACTS I.—Patterson and Goble, *Cases on Contracts* (2d ed.), II, (3).
 2a. TORTS.—Thurston and Seavey, *Cases on Torts*. I and II, (3).
 2b. TORTS.—Thurston and Seavey, *Cases on Torts*. II, (3).
 3. PERSONAL PROPERTY.—Bigelow, *Cases on Personal Property* (3d ed.). I, (2).
 3a-3b. PROPERTY I AND II.—Fraser, *Cases on Property*, Volumes I and II (2d ed.), Kirkwood, *Cases on Conveyances* (2d ed.), and Bigelow, *Introduction to the Law of Real Property*. S, (6).
 4a. REMEDIES.—Magill and Chadbourn, *Cases on Civil Procedure* (3d ed.), and Sunderland, *Cases on Judicial Administration*. I, (3).
 4b. TRIAL PRACTICE.—McBaine, *Cases on Trial Practice* (2d ed.). S and II, (3).
 5. CRIMINAL LAW.—Harno, *Cases on Criminal Law and Procedure* (2d ed.). I, (4).
 6. LEGAL INSTITUTIONS.—Goebel, *Cases on Development of Legal Institutions*. I, (3).
 7. REAL PROPERTY I.—Bigelow, *Introduction to the Law of Real Property*, and Aigler, *Cases on Titles* (3d ed.). I, (3); II, (4).

8. LEGISLATION.—Horack, *Cases on Legislation*. S, (3); II, (2).
10. EQUITY.—Cook, *Cases on Equity* (3d one-volume ed.). II, (3).
11. AGENCY.—Mechem, *Cases on Agency* (3d ed.). II, (2).
12. FUNDAMENTALS OF ACCOUNTING.—Same as Accountancy 12. I and II, (3).
13. EVIDENCE.—McCormick, *Cases on Evidence*. S, (3); II, (4).
14. PERSONS.—Jacobs, *Cases on Domestic Relations* (2d ed.). S, (2).
15. BILLS AND NOTES.—Britton, *Cases on Bills and Notes* (3d ed.). I, (3).
- 16a-16b. TRUSTS.—Scott, *Cases on Trusts* (2d ed.). S, (4); I and II, (2).
17. SALES.—Bogert and Britton, *Cases on Sales*. S and II, (3).
- S17. UNINCORPORATED BUSINESS ASSOCIATIONS.—Mechem, *Cases on Partnership* (Mathews' revision). S, (2).
18. WILLS AND ADMINISTRATION.—Costigan, *Cases on Wills, Descent, and Administration* (2d ed.). I, (3).
19. BUSINESS ASSOCIATIONS.—James, *Cases on Business Associations*. I, (4).
20. PLEADING.—Magill and Chadbourn, *Cases on Civil Procedure* (3d ed.), and Sunderland, *Cases on Judicial Administration*. I, (3).
- 21a. SECURITY I.—Hanna, *Cases on Security* (2d ed.). S and II, (2).
- 21b. SECURITY II.—Sturges, *Cases on Credit Transactions* (2d ed.). I, (3).
22. CONSTITUTIONAL LAW.—Dowling, *Cases on Constitutional Law* (3d ed.). I, (4).
24. MUNICIPAL CORPORATIONS.—Stason, *Cases on Municipal Corporations*. I, (2).
25. THE LEGAL PROFESSION.—Cheatham, *Cases on the Legal Profession*. S, (1).
26. INTERNATIONAL LAW.—Briggs, *The Law of Nations*. I, (3).
28. INSURANCE.—Goble, *Cases on Insurance*. S, (2).
29. REAL PROPERTY II.—Handler, *Cases on Vendor and Purchaser*. S and II, (2).
30. REAL PROPERTY III.—Bigelow, *Cases on Rights in Land* (3d ed.). I, (3).
31. CONFLICT OF LAWS.—Cheatham, Dowling, Goodrich, and Griswold, *Cases on Conflict of Laws*. S, (2); I, (4).
32. CONTRACTS II.—Patterson, *Cases on Contracts II*. I, (3).
33. ADMINISTRATIVE LAW.—Gellhorn, *Cases on Administrative Law*. S and II, (3).
37. CRIMINAL LAW ADMINISTRATION AND PROCEDURE.—Harno, *Cases on Criminal Law and Procedure* (2d ed.). II, (2).
38. FUTURE INTERESTS AND RESTRAINTS UPON ALIENATION.—Powell, *Cases on Future Interests* (2d ed.). II, (4).
45. USE OF LAW BOOKS.—Weisiger, *Manual for the Use of Law Books* (3d ed.). S and II, (1).
48. JURISPRUDENCE.—Hall, *Readings in Jurisprudence*. II, (3).
50. LABOR LAW.—Sullivan, *Cases on Labor Law*. II, (3).
52. LAW OF OIL AND GAS.—Summers, *Cases on Oil and Gas*. S, (2).
- 54a-d. LEGAL PROBLEMS.—Preparation of comments for *Illinois Bar Journal*. II, (1 to 4).
60. PUBLIC UTILITIES.—Robinson, *Cases on Public Utilities* (2d ed.). S, (1½); I, (2).
61. TRADE REGULATION.—Handler, *Cases on Trade Regulation*. II, (3).
62. CORPORATION ORGANIZATION AND FINANCE.—Sturges, *Cases on Debtors' Estates* (3d ed.). II, (3).
- 64a. TAXATION I.—Griswold, *Cases on Federal Taxation* (2d ed.). I, (3).
- 64b. TAXATION II.—Magill and Maguire, *Cases on Taxation* (4th ed.). II, (2).

LIBRARY SCIENCE

Courses for Undergraduates

7. READING GUIDANCE IN ADOLESCENT LITERATURE.—Introduction to the integrated use of reading materials in the secondary school program. S, I, and II, (4).
8. READING GUIDANCE IN CHILDREN'S LITERATURE.—Introduction to the use of reading materials in the elementary school program. S, I, and II, (4).
9. SCHOOL LIBRARY MANAGEMENT.—Objectives and methods of service in the small school library; organization; budget and book-ordering; classification; cataloging; training the pupil staff; housing and equipment. S, (4). *Prerequisite or concurrent:* Library Science 7 or 8.
12. GENERAL REFERENCE.—Classification and arrangement of books in the University Library; card catalogs; reference books. Intended for freshmen and sophomores; not for students in the Library School. I and II, (2).

Courses for Students in the Library School

Required Courses for First-Year Library School Students

60. DEVELOPMENT OF THE MODERN LIBRARY.—Introduction to the historical development of libraries with emphasis on social origin, functions, and objectives; evolution of various types of libraries; significant modern trends; librarianship as a profession. S and I, (3).
61. CATALOGING AND CLASSIFICATION.—Introduction to the principles of cataloging and classifying books and assigning subject headings, with practical application to many types of books. The course is based on the American Library Association Catalog rules, Library of Congress Rules for cataloging, Dewey Decimal Classification, Library of Congress List of subject headings, American Library Association Filing rules, and the basic reference books used by catalogers. A brief introduction to the Library of Congress Classification is included. I, (4).
62. REFERENCE SERVICE.—Introduction to the fundamental principles of the organization and administration of reference service; selection, evaluation, and use of basic reference materials. S and I, (3).
63. LIBRARY MATERIALS.—General principles and standards of selection of books, pamphlets, periodicals, and non-book materials; basic bibliographic sources of information on their production, physical characteristics, and content. S and I, (3).
64. LIBRARY ADMINISTRATION.—Introduction to general principles of administration and their application to the organization and management of libraries and library departments, with consideration of the objectives and functions of the various types of modern libraries. I, (3).

Elective Courses for First-Year Library School Students

70. ORGANIZATION AND MANAGEMENT OF PUBLIC LIBRARIES.—Problems of public library administration in relation to the organization and management of personnel, materials, quarters, procedures, and finance to render effective service to society within the framework of approved objectives and legal provisions. S and II, (3).
71. ORGANIZATION AND MANAGEMENT OF COLLEGE AND UNIVERSITY LIBRARIES.—A study of the place of the library in higher education and of the administrative problems involved in college and university library service. S and II, (3).
72. ORGANIZATION AND MANAGEMENT OF SCHOOL LIBRARIES.—The objectives, functions, organization, and administration of library service as a part of the school program. S and II, (3).
75. READING INTERESTS AND GUIDANCE OF ADULTS.—Theory and practice of library reading guidance service; methods of determining reading interests; selection of books and other reading materials for adults on the basis of interests, needs, and abilities. S and II, (3).
76. READING INTERESTS AND GUIDANCE OF ADOLESCENTS.—Principles of guidance in the use of reading materials to meet the reading interests, habits, and abilities of the adolescent; readers' advisory service to the adolescent in the programs of the school and public library. II, (3).
77. READING INTERESTS AND GUIDANCE OF CHILDREN.—Reading interests, habits, and abilities of children at various age levels in relation to appropriate reading materials; principles of guidance in reading as a developmental process; sources and evaluation of reading materials. II, (3).
78. PROBLEMS IN CATALOGING AND CLASSIFICATION.—Continuation of Library Science 61, emphasizing the cataloging and classification of special types of material and the administrative problems of the catalog department; the cataloging of maps, music, dissertations, serials, monographic sets, and other material requiring descriptive notes; various types of analytics; debatable entries. Practice in the use of the Library of Congress Classification and in problems of filing in the catalog. S and II, (3).
80. BIBLIOGRAPHY AND REFERENCE.—A course which aims to prepare students for reference service in college and university libraries and in the larger public libraries; the selection, evaluation, and use of the more specialized and scholarly reference materials in the various subject fields; practical training in the making of bibliographies. S and II, (4).

81. INTRODUCTION TO GOVERNMENT PUBLICATIONS.—Nature, scope, and characteristics of government publications; their value as sources of information; their selection, acquisition, and administration. Includes United States, state, local, and British publications. S and II, (3).
- S85. LIBRARY ADMINISTRATION II.—A comparative study of the administration of various types of library—college, university, public, special, and school. Each student will be required to make an individual study of a field of special interest. S, (4).
99. INSPECTION TRIP.—Required of all candidates for the degree of Bachelor of Science in Library Science. Estimated cost, \$35. S and II, (no credit).

Courses for First-Year Library School Students and for Graduate Students

53. BIOLOGICAL LITERATURE AND REFERENCE WORK.—I and II, (2 hours or ¼ unit).
Prerequisite: Consent of the instructor.
54. AUDIO-VISUAL AIDS AND LIBRARY SERVICE.—Descriptive course designed to acquaint the student with the theories of educational use of audio-visual materials and with their administration in library service. S and II, (3 hours or ½ to 1 unit).
73. SERVICE IN SPECIAL LIBRARIES.—Principles and methods of organizing and administering collections for the special subject fields; emphasis is placed on the literature of the fields, the use of subject bibliographies and catalogs, and the development of special services. II, (2 hours or ½ unit).
90. HISTORY OF BOOKS.—The origin and evolution of the alphabet and of scripts; the history of manuscript books; the invention and spread of printing; the history of the production and distribution of printed books. Emphasis is placed on the relation of the book to the social conditions of the various periods studied. II, (3 hours or ½ to 1 unit).
91. PSYCHOLOGY FOR LIBRARIANS.—The application of psychological principles and techniques to library service. S and II, (2 hours or ½ unit).
- [92. THE LIBRARY AND THE COMMUNITY.—II, (3 hours or 1 unit).]

Courses for Graduates

101. THESIS.—S, I, and II, (1 to 2 units).
102. INDIVIDUAL RESEARCH.—S, I, and II, (1 to 2 units). Seminar classes will be formed if enough students choose the same subject for individual research. Some suggested fields of investigation include:
- (a) SCHOOL LIBRARY SERVICE.
 - (b) ADMINISTRATION OF REFERENCE SERVICE.
 - (c) MODERN PUBLISHING.
 - (d) LARGER UNITS OF LIBRARY SERVICE (COUNTY, STATE, REGIONAL).
 - (e) ADMINISTRATION OF EPHEMERAL MATERIAL.
 - (f) TEACHING OF LIBRARY SCHOOL SUBJECTS.
- 104a. ADVANCED CLASSIFICATION.—History and philosophy of classification; comparative study of classification systems with special emphasis on the system used by the Library of Congress. Critical study of subject headings. Individual studies of special administrative problems or of the problems of classification of special types of material. I, (½ unit).
- 104b. ADVANCED CATALOGING.—History and philosophy of cataloging; comparative study of cataloging rules and of rules for filing in a catalog; cataloging of more difficult types of material such as incunabula, rare books, manuscripts, and archives. Administrative problems in cataloging. Individual studies in the problems of cataloging. S and II, (½ to 1 unit).
108. LIBRARY TRENDS.—A survey of the library today, with a consideration of its future development as a social institution. Special emphasis is given to parallel trends in sociological, educational, and governmental fields. S and I, (1 unit).
109. PROBLEMS OF COLLEGE AND UNIVERSITY LIBRARY ADMINISTRATION.—The functions and organization of various types of college and university libraries; intensive study of selected cases to illustrate typical problems in connection with budget, personnel, equipment, instruction in the use of the library, etc. I, (1 unit).
111. METHODS OF INVESTIGATION IN LIBRARIANSHIP.—Research methods and their application to the problems of librarianship; a survey of recent research in librarianship, with analysis of typical studies. I, (1 unit).

112. RESOURCES OF AMERICAN LIBRARIES.—The distribution and extent of American library resources for advanced study and research; methods of surveying library facilities; growth and uses of union catalogs and bibliographical centers; inter-institutional agreements for specialization of collections and other forms of library cooperation; types of library materials; ways and means of developing research collections in special subject fields. II, (1 unit).
- [113. DEPARTMENTAL AND SPECIAL LIBRARIES.—II, ($\frac{1}{2}$ unit).]
114. ADVANCED BIBLIOGRAPHY.—Designed to enable the student to utilize effectively all the varied resources of a large research library; methods of analyzing and solving bibliographic problems which arise in scholarly libraries and in connection with research projects. S and II, (1 unit).
115. SEMINAR IN GOVERNMENT PUBLICATIONS.—Investigation of problems of selection, acquisition, organization, and use of collections of American federal, state, and municipal publications and those of important foreign governments. I, (1 unit).

MATHEMATICS

Requirements for L.A.S. Students

Major: 20 hours in mathematics, excluding Mathematics 2, 3, 4, 5, 6a, 8a, 8b, 10a, 10b, and all courses taken during the freshman year, and including Mathematics 7, 9, and two semesters of Mathematics 70, 71, 72, 74.

Minors: 20 hours selected from one or two of the following subjects: accountancy, astronomy, chemistry, economics, philosophy, physics, statistics (Mathematics 21, 22, 30, 31), surveying, theoretical and applied mechanics. If two subjects are chosen, at least eight hours must be taken in each.

Courses for Undergraduates

NOTE: For undergraduate students intending to take advanced work or a major in mathematics, the following outline of freshman and sophomore work is suggested. Freshman year: first semester, Mathematics 2 (or 3) and 4 (or 5); second semester, Mathematics 6a. Sophomore year: first semester, Mathematics 7; second semester, Mathematics 9. In certain cases Mathematics 7 and 9 may be replaced by Mathematics 8a and 8b.

- R. REFRESHER COURSE IN HIGH SCHOOL MATHEMATICS FOR VETERANS.—I and II, (no credit).
1. SOLID GEOMETRY.—Satisfies deficiency in solid geometry for engineering students; all other students receive full credit. S, I, and II, (3). *Prerequisite:* Entrance algebra, 1 unit; plane geometry, 1 unit.
 2. COLLEGE ALGEBRA.—S, I, and II, (3). Seniors receive only two hours credit. *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units; plane geometry, 1 unit.
 3. ALGEBRA.—S, I, and II, (5). Students having $1\frac{1}{2}$ entrance units in algebra receive only three hours credit. Seniors receive only four hours credit. *Prerequisite:* Entrance algebra, 1 unit; plane geometry, 1 unit.
 4. PLANE TRIGONOMETRY.—S, I, and II, (2). Seniors receive only one hour credit. *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units, or registration in Mathematics 3; plane geometry, 1 unit.
 - 4a. ELEMENTS OF ALGEBRA AND TRIGONOMETRY.—For pre-medical students who have entered with only one unit of high school algebra and who need credit in trigonometry as a prerequisite to physics. This course does not serve as a prerequisite for Mathematics 6 or 6a. Pre-medical students who enter with $1\frac{1}{2}$ units of algebra must take Mathematics 4 above. S, I, and II, (3). *Prerequisite:* High school algebra, 1 unit; plane geometry, 1 unit.
 5. ADVANCED TRIGONOMETRY.—Intended for students having entrance credit in trigonometry. The course will include such topics as trigonometric equations, De Moivre's theorem, complex numbers with applications to more complicated problems in plane trigonometry, and a brief introduction to spherical trigonometry. I and II, (2). Seniors receive only one hour credit. *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units; plane geometry, 1 unit; solid geometry, $\frac{1}{2}$ unit; Mathematics 4, or entrance trigonometry ($\frac{1}{2}$ unit).
 - 6a. ANALYTIC GEOMETRY.—Plane and solid analytic geometry. S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* Mathematics 2 or 3 and 4 or 5.

7. CALCULUS.—First course for students of mathematics and engineering. S, I, and II, (5). *Prerequisite:* Mathematics 6a.
- [8a. CALCULUS.—For students of chemistry, chemical engineering, ceramics, ceramic engineering, metallurgy, and mining engineering. I and II, (3). *Prerequisite:* Combined first-year course (Mathematics 10a-10b), or consent of instructor.]
- [8b. CALCULUS.—Continuation of Mathematics 8a. I and II, (3). *Prerequisite:* Mathematics 8a.]
9. CALCULUS.—Second course for students of mathematics and engineering. S, I, and II, (3). *Prerequisite:* Mathematics 7.
- 9a. CALCULUS.—Special topics. S, I, and II, (2). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
- 10a. COMBINED FRESHMAN MATHEMATICS.—A combined course integrating all the usual topics of algebra, trigonometry, and analytic geometry, and also some topics of differential calculus. For students of chemistry, chemical engineering, ceramic engineering, ceramics, metallurgy, and mining engineering. I, (5). *Prerequisite:* Entrance algebra, 1½ units; plane geometry, 1 unit.
- 10b. COMBINED FRESHMAN MATHEMATICS (CONTINUED).—II, (4). *Prerequisite:* Mathematics 10a.
22. STATISTICS.—S, I, and II, (3). *Prerequisite:* Mathematics 2 or 3; sophomore standing.
- 90a-90b. THESIS AND READING COURSE.—I and II, (2). *Prerequisite:* 24 hours of college mathematics.

Courses for Advanced Undergraduates and Graduates

- 16a. DIFFERENTIAL EQUATIONS.—S, I, and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
- 16b. DIFFERENTIAL EQUATIONS.—S and II, (3). *Prerequisite:* Mathematics 16a.
18. ADVANCED CALCULUS.—S, I, and II, (3). *Prerequisite:* Mathematics 9 or 8b.
19. DIFFERENTIAL EQUATIONS AND ORTHOGONAL FUNCTIONS.—S, I, and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
- S20. GRAPHICAL AND NUMERICAL METHODS.—S, (3). *Prerequisite:* Mathematics 9 or 8b.
21. THEORY OF PROBABILITY.—II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
24. STATISTICAL METHODS OF QUALITY CONTROL.—II, (3). *Prerequisite:* Mathematics 22.
- [30a-30b. ACTUARIAL THEORY.—Continuous through I and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.]
- [35. TEACHERS COURSE.—I, (3). *Prerequisite:* A year in calculus, or consent of instructor.]
- [36. ADVANCED ASPECTS OF EUCLIDEAN GEOMETRY.—II, (3). *Prerequisite:* Eighteen hours of mathematics, including Mathematics 7 and 9.]
37. ARITHMETIC FOR TEACHERS.—A systematic presentation of arithmetic for juniors and seniors who are preparing to teach in elementary schools. Required for state elementary school certificate but not acceptable for credit in the College of Liberal Arts and Sciences. II, (5).
- 40a-40b. FUNDAMENTAL CONCEPTS OF MATHEMATICS.—S, and continuous through I and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
41. VECTOR AND TENSOR ANALYSIS.—II, (3). *Prerequisite:* Mathematics 9 and 18, or equivalent, or consent of instructor.
- 70a-70b. INTRODUCTION TO HIGHER ALGEBRA.—S, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
- 71a. INTRODUCTION TO HIGHER ANALYSIS.—S, I, and II, (3). *Prerequisite:* One year of mathematics beyond the calculus, or consent of instructor.
- 71b. INTRODUCTION TO HIGHER ANALYSIS.—S, I, and II, (3). *Prerequisite:* Mathematics 71a.
- 72a-72b. INTRODUCTION TO HIGHER GEOMETRY.—S, and continuous through I and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.
- 74a-74b. ADVANCED ALGEBRA.—S, and continuous through I and II, (3). *Prerequisite:* Mathematics 9, or consent of instructor.
- 75a-75b. INTRODUCTION TO APPLIED MATHEMATICS.—Continuous through I and II, (3). *Prerequisite:* Mathematics 7 and 9, or 8a-8b.

Courses for Graduates

NOTE: Students beginning graduate study with a major in mathematics must have had twenty hours of undergraduate work in mathematics besides the usual freshman courses in algebra, trigonometry, and analytic geometry, including a one-year course

in calculus and one year of more advanced work in one or more of the fields of algebra, analysis, and geometry. They should be able to read German or French.

Candidates for a Ph.D. degree taking a first minor in mathematics are expected to have completed a course in calculus and are required to take two one-year courses beyond the calculus. Those taking a second minor are required to complete at least one course throughout a year beyond the calculus.

The more technical courses offered by the department are arranged mainly in cycles of two or three years, so that a properly qualified student will usually have opportunity to take any particular course at some time during the three years of residence required for a doctor's degree.

100. SEMINAR AND THESIS.—S, I, and II, (1 to 2 units).
 101. FUNCTIONS OF REAL VARIABLES.—I, (1 unit).
 [102. FUNCTIONS OF A COMPLEX VARIABLE.—Continuous through I and II, (1 unit).]
 104. TOPOLOGY.—S, and continuous through I and II, (1 unit).
 111. DIFFERENTIAL EQUATIONS.—Continuous through I and II, (1 unit).
 [115. ADVANCED TOPICS IN THE THEORY OF FUNCTIONS.—Continuous through I and II, (1 unit).]
 [116. TOPICS IN CLASSICAL ANALYSIS.—II, (1 unit).]
 117. ANALYSIS IN FUNCTION SPACE.—Continuous through I and II, (1 unit).
 126. THEORY OF GROUPS.—Continuous through I and II, (1 unit).
 [127. FUNDAMENTALS OF GEOMETRY.—II, (1 unit).]
 129. STATISTICS.—Continuous through I and II, (1 unit).
 131. ADVANCED GEOMETRY.—Continuous through I and II, (1 unit).
 135. DIFFERENTIAL GEOMETRY.—II, (1 unit).
 [151. LINEAR OPERATIONS.—Continuous through I and II, (1 unit).]
 169. ELEMENTS OF HIGHER GEOMETRY AND ALGEBRA.—Continuous through I and II, (1 unit).
 170. ALGEBRA.—S, and continuous through I and II, (1 unit).
 171. ANALYSIS.—S, and continuous through I and II, (1 unit).
 172. GEOMETRY.—S, and continuous through I and II, (1 unit).

MECHANICAL ENGINEERING

Courses for Undergraduates

1. STEAM, AIR, AND GAS MACHINERY.—Theory, construction, operating characteristics of boilers, prime movers, air compressors, and auxiliaries. For civil engineering students. S, I, and II, (3). *Prerequisite:* Mathematics 9; Physics I and 3.
3. POWER PLANT ENGINEERING.—Steam generators, prime movers, and auxiliaries for central stations. For electrical and general engineering students. I and II, (3). *Prerequisite:* Mechanical Engineering 10; registration in Mechanical Engineering 61.
5. LOCOMOTIVES.—Steam and other motive power; mechanics; thermal analysis. I, (3). *Prerequisite:* Registration in Mechanical Engineering 13 and Theoretical and Applied Mechanics 2.
6. POWER PLANT EQUIPMENT.—An introductory study of the functions and characteristics of equipment; including steam generators, prime movers, condensers, pumps, air compressors, fans, chimneys, feed water treatment, and auxiliaries. For mechanical engineering students. S, I, and II, (4). *Prerequisite:* Registration in Mechanical Engineering 14.
7. INTERNAL COMBUSTION ENGINES.—Theory, performance, and general characteristics. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 6 or 3.
8. RAILWAY OPERATION.—Train resistance; mechanics of train movements; locomotive economy and performance; shops and terminal facilities. S, (3). *Prerequisite:* Mechanical Engineering 5.
10. THERMODYNAMICS.—Transformation of heat to work, theoretical and practical limitations, absolute scale of temperature and its significance, thermodynamic properties of working media, energy equation of steady flow, analysis of ideal power and refrigeration cycles. For electrical and general engineering students. S, I, and II, (3). *Prerequisite:* Mathematics 9; Physics I and 3.
13. THERMODYNAMICS.—Transformations of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors, and vapor mixtures. S, I, and II, (3). *Prerequisite:* Mathematics 9; Physics I and 3.

14. THERMODYNAMICS.—Energy relations of one-dimensional steady flow of compressible fluids applied to the DeLaval nozzle, simple orifice, and long pipe; simple single-stage impulse turbine; ideal power cycles; thermodynamics and processes of moist air; and other applications. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 13.
15. ENGINEERING THERMODYNAMICS.—Application of principles of thermodynamics to selected problems of power production, heat transfer, fluid flow of a compressible medium cycle analysis. S and I, (3). *Prerequisite:* Mechanical Engineering 14.
17. REFRIGERATION ENGINEERING.—Mechanical cooling in industrial processes. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 14.
21. MECHANICAL EQUIPMENT OF BUILDINGS.—Laboratory test of steam engines, turbines, pumps, hot-blast heaters, fans, air washers, heating boilers, and air compressors. I and II, (1). *Prerequisite:* Senior standing; registration in Mechanical Engineering 23.
23. MECHANICAL EQUIPMENT OF BUILDINGS.—Small power plants, direct and indirect heating, ventilation, and air conditioning. I and II, (4). *Prerequisite:* Senior standing; registration in Mechanical Engineering 21.
25. HEATING AND VENTILATING FOR ARCHITECTS.—Direct and indirect heating, ventilation and air analysis, air conditioning. I and II, (2). *Prerequisite:* Senior standing.
28. HEATING, VENTILATING, AND AIR CONDITIONING.—Steam boilers and water heaters, direct and indirect heating, gravity systems, district heating, ventilation and air analysis, air conditioning. S, I, and II, (4). *Prerequisite:* Mechanical Engineering 14 and 65.
31. MECHANICS OF MACHINERY.—Cams, gears; graphical construction; kinetics; balancing; critical speeds; force and mass reduction. S, I, and II, (5). *Prerequisite:* Registration in Theoretical and Applied Mechanics 2.
32. KINEMATICS AND DYNAMICS OF MACHINERY FOR AERONAUTICAL ENGINEERS.—Velocities and accelerations in machines; static forces; inertia forces; analytical and graphical methods; vibrations and critical speeds in shafts; balancing of engines; balancing machines; the gyroscope and its applications. I and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 2.
35. PETROLEUM PRODUCTION ENGINEERING.—Oil field development, properties of petroleum, petroleum reservoirs, exploration methods, field development, drilling, oil field hydrology, casing methods, oil well completion. I, (3). *Prerequisite:* Senior standing in mechanical engineering, or consent of instructor.
36. PETROLEUM PRODUCTION ENGINEERING.—Production methods, reservoir drainage; controlled flowing, gas lift, pumping, repressuring, water drive; natural gasoline manufacture; storage; pipe-line transportation. II, (3). *Prerequisite:* Mechanical Engineering 35, or consent of instructor.
40. MECHANICAL ENGINEERING DESIGN.—Design of machinery subjected to heavy and variable stresses. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63; Mechanical Engineering 31.
41. MECHANICAL ENGINEERING DESIGN.—Continuation of course 40. S, I, and II, (4). *Prerequisite:* Mechanical Engineering 40.
- [42. ANALYTICAL DESIGN OF HIGH-SPEED ENGINES.—Study of the dynamics of high-speed internal-combustion engine, engine balance, crankshaft deflections, and torsional vibrations. I and II, (3). *Prerequisite:* Mechanical Engineering 31; senior standing, or consent of instructor.]
44. ADVANCED MACHINE DESIGN.—Correlation of previously acquired design experience with the creative problem of developing machine parts that depend upon design judgment. I and II, (3). *Prerequisite:* Mechanical Engineering 41, or consent of instructor.
52. POWER PLANT DESIGN.—A critical study of the functions, relative performance characteristics, economics, selection, and correlation of equipment for a modern steam generating station. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 65.
54. LOCOMOTIVE AND CAR DESIGN.—Motive power and rolling stock selection; standards and proportions. I, (3). *Prerequisite:* Registration in Mechanical Engineering 8.
57. INDUSTRIAL QUALITY CONTROL.—Shewhart control chart technics, acceptance sampling, rationalization of tolerances and specifications, organization and administration of quality programs. II, (3). *Prerequisite:* Mathematics 7.

61. MECHANICAL ENGINEERING LABORATORY.—Tests of prime movers and auxiliaries. For chemical and electrical engineering students. S, I, and II, (2). *Prerequisite:* Mechanical Engineering 1, 2, or 3.
- [62. MECHANICAL ENGINEERING LABORATORY.—Steam boilers and auxiliaries, steam prime movers, pumps, condensers, fans, air compressors, and internal combustion engines. Lectures, recitations, and laboratory. I and II, (3). Students who have credit in Mechanical Engineering 1, 2, or 3 may register for one hour of laboratory work only. *Prerequisite:* Junior standing.]
64. MECHANICAL ENGINEERING LABORATORY.—Instruments and tests of steam prime movers, pumps, fans, internal combustion engines, and flow of compressible media. Engineering reports. S, I, and II, (3). *Prerequisite:* Registration in Mechanical Engineering 6 and 14, or 3.
65. MECHANICAL ENGINEERING LABORATORY.—Tests of air conditioning equipment, reciprocating steam pumps, air compressors, and other power and mechanical equipment selected by the students. Engineering reports. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 64.
77. MACHINE TOOL OPERATION.—Operation of machine tools, use of jigs, fixtures, and tools for producing interchangeable parts. For industrial education students. S, I, and II, (4). *Prerequisite:* Sophomore standing.
81. PATTERN, FOUNDRY, AND WELDING LABORATORY.—Operation of machine tools; use of jigs, fixtures, and tools for producing interchangeable parts. S, I, and II, (2). *Prerequisite:* Sophomore standing; General Engineering Drawing 1 or 4.
82. MACHINE TOOL LABORATORY FOR AERONAUTICAL ENGINEERS.—Operation and function of lathes, planers, milling machines, turret lathes, and gear cutting machines in the production of interchangeable parts; the use of jigs and fixtures in quantity production to reduce cost and insure interchangeable parts. S and I, (1). *Prerequisite:* Sophomore standing; General Engineering Drawing 1.
84. WELDING ENGINEERING.—Welding processes; metallurgy, metallography, physical tests, and inspection of welds; design of weldments; application to the design and production of machines and structures. S, I, and II, (3). *Prerequisite:* Senior standing in engineering, consent of instructor.
85. PATTERN AND FOUNDRY LABORATORY.—Design of wood and metal patterns; metallurgy of gray iron; floor, bench, and machine molding; core making; brass furnace and cupola practice; sand testing. S, I, and II, (3). *Prerequisite:* Sophomore standing; General Engineering Drawing 1 or 4.
87. MACHINE TOOL LABORATORY.—Machine tools; use of fixtures, jigs, and tools for producing interchangeable parts. S, I, and II, (3). *Prerequisite:* Sophomore standing; General Engineering Drawing 1 or 4.
88. MACHINE TOOL LABORATORY.—Experiments on machine tool performance, tool and fixture design, shop management and production problems. S, I, and II, (3). *Prerequisite:* Mechanical Engineering 87; junior standing.
89. HEAT TREATMENT OF METALS.—Heat treatment and metallurgy of steels and non-ferrous alloys; heat treating operations and study of microstructure and physical properties; hardenability, grain size testing, and machineability; heat treating operations as applied in production. S, I, and II, (3). *Prerequisite:* Senior standing in mechanical engineering.
- [97-98. THESIS.—Investigation of special subjects and preparation of thesis embodying review of the literature, discussion of results. I and II, (3). *Prerequisite:* Senior standing.]
- [99. INSPECTION TRIP.—I, (no credit). *Prerequisite:* Senior standing.]

Courses for Graduates

NOTE: The prerequisite for graduate work in mechanical engineering is the equivalent of the undergraduate course required for a bachelor's degree in mechanical engineering in the branch of the subject in which registration is desired.

107. THERMODYNAMICS.—Mathematics of thermodynamics; application of thermodynamics to the solution of physical and engineering problems. I and II, (1 unit).
108. FLOW OF FLUIDS AND HEAT TRANSFER.—Application of dimensional analysis and other rational formulas. Special problems. II, (1 unit).
109. MECHANICAL ENGINEERING DESIGN.—Machine design, power plant design, dynamics of machinery. I and II, (1 unit).

110. **ADVANCED HEATING, VENTILATING, AND AIR CONDITIONING.**—Applications of various systems, notable developments, and results of research. Individual problems. I and II, (1 unit).
112. **LABORATORY INVESTIGATIONS.**—Special problems in: (a) combustion; (b) steam; (c) gas and oil engineering; (d) heating, ventilating, and air conditioning; (e) refrigeration; (f) flow of fluids; (g) heat transfer; (h) mechanical transmission of power; (i) railway equipment. S, I, and II, (1 to 2 units).
- [117. **ADVANCED REFRIGERATING ENGINEERING.**—Advanced theory and special cycles; design of comfort cooling and other special installations. (1 unit).]
- [120. **LOCOMOTIVE DESIGN.**—Economic and legal considerations; specifications; weight and distribution; relation of steam pressure, compounding, and superheat to performance and economy. (1 unit).]
121. **LOCOMOTIVE OPERATION.**—Train resistance and locomotive tractive force; tonnage ratings. I, (1 unit).

MILITARY BANDS

Courses for Undergraduates

NOTE: The following courses are open only to those who have passed the examination for membership in one of the bands. All new students who play band instruments and who desire to try for places in the bands should make application at the Band Office. Those who are accepted for membership will be given a slip indicating the band to which they have been assigned, together with their rehearsal days and hours. Assignments are made according to proficiency. Service in the bands takes the place of the military courses required of freshmen and sophomores.

1-2. **FRESHMAN BAND.**—S, I, and II.

5-6. **JUNIOR BAND.**—S, I, and II.

3-4. **SOPHOMORE BAND.**—S, I, and II.

7-8. **SENIOR BAND.**—S, I, and II.

MILITARY SCIENCE AND TACTICS

Courses for Undergraduates

NOTE: All military courses designated by the letter "a" are practical; those designated by the letter "b" are theoretical. The elementary courses provide common basic military training preparatory for all advanced course instruction.

1a-2a. **FRESHMAN PRACTICAL.**—Leadership drill and exercise of command; individual weapons and marksmanship. S, I, and II, (½).

1b-2b. **FRESHMAN THEORY.**—National Defense Act and R.O.T.C.; military organization; hygiene and first aid; world military situation; maps and aerial photographs. S, I, and II, (½).

3a-4a. **SOPHOMORE PRACTICAL.**—Leadership drill and exercise of command; physical development methods; maps and aerial photographs; military administration; world military situation. S, I, and II, (½).

3b-4b. **SOPHOMORE THEORY.**—Military law and boards; military administration; world military situation; evolution of warfare. S, I, and II, (½).

Courses for Advanced Undergraduates

INFANTRY

5a-6a. **JUNIOR PRACTICAL.**—Military leadership psychology and personnel management; drill and exercise of command. I and II, (½).

5b-6b. **JUNIOR THEORY.**—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, (2½).

7a-8a. **SENIOR PRACTICAL (Interim).**—Military leadership psychology and personnel management; drill and exercise of command. I and II, (½).

7b-8b. **SENIOR THEORY (Interim).**—Weapons; combat intelligence; map and aerial photo reading; military law; methods of instruction; tactics and technique. I and II, (2½).

FIELD ARTILLERY

15a-16a. **JUNIOR PRACTICAL.**—Military leadership psychology and personnel management; drill and exercise of command. I and II, (½).

15b-16b. **JUNIOR THEORY.**—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, (2½).

ARMORED CAVALRY

- 25a-26a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 25b-26b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

ENGINEERS

- 35a-36a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 35b-36b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

SIGNAL CORPS

- 45a-46a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 45b-46b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

QUARTERMASTER CORPS

- 55a-56a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 55b-56b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

ARMY AIR FORCE

- 65a-66a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 65b-66b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

TRANSPORTATION CORPS

- 75a-76a. JUNIOR PRACTICAL.—Military leadership psychology and personnel management; drill and exercise of command. I and II, ($\frac{1}{2}$).
- 75b-76b. JUNIOR THEORY.—Military problems of the United States; occupied territories; military law and boards; tactics and technique. I and II, ($2\frac{1}{2}$).

MINING AND METALLURGICAL ENGINEERING**METALLURGICAL ENGINEERING****Courses for Undergraduates**

1. INTRODUCTION TO METALLURGY.—An introduction to metallurgical processes designed to give a survey of the entire field of metallurgy and serve as a background for more advanced courses. S, I, and II, (3). *Prerequisite:* Chemistry 5, or equivalent.
10. PRINCIPLES OF PHYSICAL METALLURGY.—Constitutional diagrams; homogeneous and heterogeneous equilibria; properties of metals and alloys as related to structure; elementary physics of metals; problems. S, I, and II, (4). *Prerequisite:* Credit or registration in Chemistry 48a.
11. METALLURGY OF IRON AND STEEL.—Production of pig iron, wrought iron, and steel; blast, Bessemer, open hearth, and electric furnaces; iron ores and slags; problems. S, I, and II, (3). *Prerequisite:* Chemistry 5; registration in Metallurgy 12.
12. METALLURGICAL CALCULATIONS.—Fundamental calculations relating to combustion of fuel, thermochemistry and thermodynamics, furnace charges and products, and heat balances in metallurgical processes. S, I, and II, (2). *Prerequisite:* Registration in Chemistry 5, or equivalent.
13. METALLOGRAPHY AND HEAT TREATMENT OF IRON AND STEEL.—Internal structure, constitution, heat treatment, physical and mechanical properties of commercial iron, wrought iron, cast iron, malleable iron, and plain carbon steels. S, I, and II, (3). *Prerequisite:* Metallurgy 10; credit or registration in Theoretical and Applied Mechanics 3 and 63; credit in Metallurgy 11 is recommended.

14. FERROUS METALLOGRAPHY LABORATORY.—Preparation of metallographic specimens and development of microscopic structures; use of metallurgical microscope; photomicrography; interpretation of structures developed by heat treatment and mechanical working of iron and steel alloys. Laboratory to accompany Metallurgy 13. S, I, and II, (2). *Prerequisite:* Registration in Metallurgy 13.
- [15. METALLURGICAL FUELS AND FURNACES.—Metallurgical fuels and sources of energy; combustion devices and heating elements; instrumentation for temperature and atmosphere control in furnaces; types of furnaces, construction and design; laboratory analysis of gaseous and liquid fuels; analysis of furnace atmospheres. I, (3). *Prerequisite:* Registration in Metallurgy 12 is recommended.]
16. METALLURGY OF NON-FERROUS METALS.—Processes for the production of aluminum, copper, gold, lead, magnesium, nickel, silver, zinc, and minor non-ferrous metals; problems. S and I, (3). *Prerequisite:* Metallurgy 12.
20. NON-FERROUS METALLOGRAPHY.—Internal structure, constitution, heat treatment, physical and mechanical properties of copper, aluminum, magnesium, lead, and special non-ferrous alloys. S, I, and II, (3). *Prerequisite:* Metallurgy 10 and 16. Students not majoring in metallurgical engineering may be given permission without credit in Metallurgy 16.
21. NON-FERROUS METALLOGRAPHY LABORATORY.—Preparation of metallographic specimens and development of microscopic structures; photomicrography; interpretation of structures developed in non-ferrous alloys. Laboratory to accompany Metallurgy 20. S, I, and II, (2). *Prerequisite:* Registration in Metallurgy 20.
22. ELECTROMETALLURGY.—Theory and application of the use of electrical energy in metallurgical processes. Laboratory practice in electro-winning, electro-refining, and electro-plating of metals and alloys. II, (3). *Prerequisite:* Metallurgy 16.
23. METALLURGY OF DEEP DRAWING AND PRESSING.—Hot and cold working of metals and alloys; rolling, stamping, forging, drawing, and extrusion of metals and alloys; effects of heat treatment subsequent to working operations. I, (3). *Prerequisite:* Metallurgy 13 and 20.
24. ALLOY STEELS.—Low-alloy high-yield strength constructional steels; elements acting as ferrite strengtheners; elements acting as carbide formers; intermediate alloy steels. I and II, (3). *Prerequisite:* Metallurgy 13 and 14.
- [25. PHYSICS OF METALS.—The physical form of alloys; elastic and plastic properties of single crystals and polycrystalline metals; creep; internal friction; rupture and fatigue; diffusion phenomena; solubility of gases in metals; concepts of modern physics; electron theory of metals. I, (3). *Prerequisite:* Registration in Metallurgy 20 and 21.]
26. ADVANCED PHYSICAL METALLURGY LABORATORY.—The course is designed to give the student an opportunity to put into practice much of the material learned in previous courses through the solution of individually assigned problems. The laboratory work affords an opportunity to make use of all the equipment in the department. Methods of metallurgical research, use of special laboratory equipment, and solution of industrial problems. S, I, and II, (3). *Prerequisite:* Senior standing in metallurgical engineering.
30. ENGINEERING METALLURGY.—For students in curricula other than metallurgical engineering. Physical and mechanical properties of metals and alloys as related to their structure and treatment; constitutional diagrams; engineering applications of metals and alloys. S, I, and II, (3). *Prerequisite:* Chemistry 4, 5, or 6; junior standing.
90. METALLURGICAL SEMINAR.—Review of current metallurgical literature; classroom reports and discussions; preparation of technical abstracts and reports. S and II, (1). *Prerequisite:* Senior standing in metallurgical engineering.
91. METALLURGICAL SEMINAR.—Continuation of Metallurgy 90. I and II, (1).
- 97-98. THESIS.—S and I, (1 to 3). *Prerequisite:* High standing and approval of head of department.
- [99. INSPECTION TRIP.—I, (no credit). *Prerequisite:* Senior standing.]

Courses for Advanced Undergraduates and Graduates

40. METALLURGY OF WELDING.—Processes for joining metals by welding; weldability of metals; effects of heating and cooling cycles; mechanical properties of welds; economics of fabrication by welding. II, (3 hours or $\frac{1}{2}$ to 1 unit). *Prerequisite:* Metallurgy 13 and 14.
- [41. POWDER METALLURGY.—Production of powder metals; fabrication of metal shapes from powder metals; compacting, sintering, testing, and applications of powdered

metal shapes. II, (3 hours or ½ to 1 unit). *Prerequisite:* Senior standing or approval of department.]

- [42. METALLURGY OF STEEL CASTINGS.—Technical and metallurgical control in the production of steel castings; acid and basic furnace practices; control of slag in steel making; heat treatment and metallography of steel castings. II, (3 hours or ½ to 1 unit). *Prerequisite:* Metallurgy II, 13, and 14.]

Courses for Graduates

NOTE: The prerequisite for graduate work with metallurgical engineering as a major is the equivalent of the undergraduate courses required for a bachelor's degree in metallurgical engineering. Courses for advanced undergraduates are open for minor credit to students in other departments who have adequate preparation in physics, chemistry, and mechanics.

101. RESEARCH IN METALLURGY.—S, I, and II, (1 to 2 units).
 102. ADVANCED PHYSICAL METALLURGY.—I, (1 unit).
 103. SPECIAL ALLOY STEELS.—High alloy tool, die, non-deforming stainless, temperature resisting, and special purpose steels. II, (1 unit).
 104. ADVANCED METALLOGRAPHIC TECHNIC.—S and II, (1 unit).

MINING ENGINEERING

Courses for Undergraduates

1. ELEMENTS OF MINING.—Explosives, drilling, blasting, tunneling, shaft sinking. I, (4).
Prerequisite: Sophomore standing in mining engineering.
 2. MINING METHODS.—S, I, and II, (4). *Prerequisite:* Mining 1.
 10. HAULAGE, HOISTING, AND PUMPING.—Haulage: cars, locomotives, track; hoisting: ropes, cages and skips, hoisting engines; mine drainage and pumping. I, (4).
Prerequisite: Mining 2.
 11. MINE VENTILATION.—Mine gases; ventilation of mines; mine fires and explosions. II, (2). *Prerequisite:* Mining 2.
 12. MINE SURVEYING.—Methods of underground surveying. II, (2). *Prerequisite:* Civil Engineering 15 or equivalent.
 20. MINE ADMINISTRATION.—Mining law, wage agreements, compensation, safety, and welfare. I, (3). *Prerequisite:* Senior standing in mining engineering.
 21. MINERAL DRESSING.—Crushing, grinding, sampling, screening, classification, and concentration of ores, including flotation; flow sheets. I, (3). *Prerequisite:* Junior standing in mining or metallurgical engineering.
 22. FUELS.—I, (3). *Prerequisite:* Chemistry 4 or equivalent.
 23. EXAMINATION AND VALUATION.—S and II, (2). *Prerequisite:* Mining 2.
 24. MINING DESIGN.—Student selects a project, such as design of headframe, shop building, shaft bottom, etc. S and II, (3). *Prerequisite:* Senior standing in mining engineering.
 25. COAL PREPARATION.—Mechanical preparation of coal, float and sink testing, washability curves, laboratory control. II, (2). *Prerequisite:* Mining 21.
 30. MINING PRINCIPLES.—For students in curricula other than mining engineering. II, (3). *Prerequisite:* Sophomore standing.
 [61. FIRST AID AND MINE RESCUE.—One week spent at a State Rescue Station. Credit granted upon securing certificate. S, (1). *Prerequisite:* Registration in mining engineering.]
 62. SUMMER MINE SURVEYING.—Two weeks' practice in underground surveying in an Illinois coal mine. S, (2). *Prerequisite:* Mining 12.
 [90. SEMINAR.—II, (1). *Prerequisite:* Senior standing.]
 [99. INSPECTION TRIP.—I, (no credit). *Prerequisite:* Senior standing.]

Courses for Graduates

NOTE: The prerequisite for graduate work with mining engineering as a major is the equivalent of the undergraduate courses required for a bachelor's degree in mining engineering. Courses for advanced undergraduates are open for minor credit to students whose major is in other departments who have adequate preparation in physics, mathematics, and mechanics.

- [101. RESEARCH IN MINING ENGINEERING AND MINERAL DRESSING.—S, I, and II, (1 to 2 units).]

- [102. ADVANCED MINERAL DRESSING AND COAL PREPARATION.—I, (1 unit).]
 [104. MINE VALUATION, TAXATION, AND MINERAL ECONOMICS.—II, (1 unit).]
 [105. ADVANCED MINE ADMINISTRATION.—II, (1 unit).]

MUSIC

Courses for Undergraduates

- 1a. HISTORY OF MUSIC.—S and I, (2). *Prerequisite:* Sophomore standing.
 1b. HISTORY OF MUSIC.—II, (2). *Prerequisite:* Sophomore standing.
 2a. RUDIMENTS OF THEORY.—Notation, scales, intervals, chords, terminology. Required of all School of Music students who fail the Placement Examination in Theory of Music. Open to students from other colleges of the University. S, I, and II, (2).
 3a. THEORY OF MUSIC.—Melodic writing in two parts, harmony. S, I, and II, (3). *Prerequisite:* Consent of instructor.
 3b. THEORY OF MUSIC.—Melodic writing in three parts, harmony. S, I, and II, (3). *Prerequisite:* Music 3a.
 3c. THEORY OF MUSIC.—Ear training and sight singing. S, I, and II, (1). *Prerequisite:* Consent of instructor.
 3d. THEORY OF MUSIC.—Ear training and sight singing. S, I, and II, (1). *Prerequisite:* Music 3c.
 4a. THEORY OF MUSIC.—Harmony and keyboard harmony. S, I, and II, (3). *Prerequisite:* Music 3b.
 4b. THEORY OF MUSIC.—Harmony and keyboard harmony. I and II, (3). *Prerequisite:* Music 4a.
 4c. THEORY OF MUSIC.—Ear training and sight singing. S, I, and II, (1). *Prerequisite:* Music 3d.
 4d. THEORY OF MUSIC.—Ear training and sight singing. I and II, (1). *Prerequisite:* Music 4c.
 13. APPRECIATION OF MUSIC.—Opera. Primarily for students from other colleges of the University. I and II, (2). *Prerequisite:* Sophomore standing.
 14a-14b. APPRECIATION OF MUSIC.—Symphonic poems, symphonies, and chamber music. S (14a only), I, and II, (2). *Prerequisite:* Sophomore standing.
 18a-18b. ORIENTATION.—Weekly lectures on the various phases of the fine arts and related subjects. Required of all freshmen in the School of Music and all music students who transfer with sophomore standing. Continuous through I and II, (1).
 92c-93d. SUPPLEMENTARY BAND AND STRING INSTRUMENTS.—I and II, (2).

Courses for Advanced Undergraduates

- 5a-5b. THEORY OF MUSIC.—Advanced harmony. S (5a only), and continuous through I and II, (2). *Prerequisite:* Music 4b.
 15-16. INSTRUMENTATION.—S (15 only), and continuous through I and II, (1 or 2). *Prerequisite:* Senior standing in music.
 25. ELEMENTARY AND JUNIOR HIGH SCHOOL MUSIC.—S and I, (2). *Prerequisite:* Junior standing in music, or consent of instructor.
 26. SENIOR HIGH SCHOOL CHORAL MUSIC.—S and II, (2). *Prerequisite:* Music 25, or consent of instructor.
 27. INSTRUMENTAL SCHOOL MUSIC.—S and II, (2). *Prerequisite:* Music 26, or consent of instructor.
 30a-30b. ENSEMBLE.—S, and continuous through I and II, ($\frac{1}{2}$ to 1). *Prerequisite:* Junior standing, or consent of instructor.
 31a-31b. ENSEMBLE.—S, and continuous through I and II, ($\frac{1}{2}$ to 1). *Prerequisite:* Music 30b.
 68a-68b. STRING INSTRUMENTS.—S, I, and II, (2). *Prerequisite:* Junior standing in music, or consent of instructor.
 94c-94d. SUPPLEMENTARY BAND INSTRUMENTS.—I and II, (2). *Prerequisite:* Junior standing in music.
 95c-95d. CONDUCTING.—S (95c only), I, and II, (2). *Prerequisite:* Junior standing in music.
 98a-98e. WIND INSTRUMENTS.—S, (1 or 2); I and II, (2). *Prerequisite:* Junior standing in music, or consent of instructor.

Courses for Advanced Undergraduates and Graduates

- 6a-6b. THEORY OF MUSIC.—Free counterpoint. Continuous through I and II, (2). *Prerequisite:* Music 5b.
- 9-10. ANALYSIS OF MUSICAL FORM.—S, and continuous through I and II, (2). *Prerequisite:* Music 4b.
- 11a-11b. COMPOSITION IN SMALLER FORMS.—Continuous through I and II, (2). *Prerequisite:* Junior standing in music.
- 12a-12b. COMPOSITION IN LARGER FORMS.—Continuous through I and II, (4). *Prerequisite:* Senior standing in music.
- 19a-20a. DOUBLE COUNTERPOINT, CANON, AND FUGUE.—S, and continuous through I and II, (3). *Prerequisite:* Music 5b.
- 28a-28b. MUSIC DRAMAS OF RICHARD WAGNER.—The earlier works, *Tristan und Isolde*, *Die Meistersinger*, *The Ring*, *Parsifal*. S (28a only), and continuous through I and II, (2). *Prerequisite:* Music 13 and 14a or 14b, or junior standing in music, or consent of instructor.
- 32-33. ADVANCED HISTORY OF MUSIC.—S (33 only), and continuous through I and II, (2). *Prerequisite:* Music 1 and 2.
- 96c-97d. INSTRUMENTAL CLINIC AND CONDUCTING.—I and II, (2).

APPLIED MUSIC

NOTE: The following courses in applied music have variable credit. Students in the music curricula ordinarily register for 4 or 5 hours credit in their major subject and for 2 hours credit in their minor subject. Students from other colleges electing these courses ordinarily register for 2 hours credit if in accordance with the regulations of their colleges. The amount of time required is as follows:

For 2 hours credit—one 30-minute lesson each week and one hour of practice daily.

For 4 hours credit—two 30-minute lessons each week and two hours of practice daily.

For 5 hours credit—two 30-minute lessons each week and three hours of practice daily.

Students registered in other colleges of the University must pass a qualifying examination before registering in applied music courses. These examinations are offered four times a year, as follows: on the Monday and Tuesday preceding registration in the fall, on the Saturday three weeks prior to the beginning of examinations for the first and second semesters, and on the last Monday in July. For additional information regarding requirements and appointments for the examinations, consult the Director of the School of Music.

Applied Music Courses for Undergraduates

- 42a-b, 43a-b. PIANO.—S, I, and II, (2 to 5).
- 52a-b, 52c-d, 53a-b, 53c-d. VOICE.—I and II, (1 to 4).
- 62a-b, 63a-b. VIOLIN.—S, I, and II, (2 to 5).
- 72a-b, 73a-b. VIOLONCELLO.—I and II, (2 to 5).
- 82a-b, 83a-b. ORGAN.—S, I, and II, (2 to 5).
- 92a-b, 93a-b. BAND AND ORCHESTRAL INSTRUMENTS.—I and II, (2 to 3).

Applied Music Courses for Advanced Undergraduates and Graduates

- 44a to 47b. PIANO.—S, I, and II, (2 to 5 hours, or $\frac{1}{4}$ to 1 unit).
- 54a to 57b. VOICE.—S, I, and II, (2 to 4 hours, or $\frac{1}{4}$ to 1 unit).
- 64a to 67b. VIOLIN.—S, I, and II, (2 to 5 hours, or $\frac{1}{4}$ to 1 unit).
- 74a to 77b. VIOLONCELLO.—S, I, and II, (2 to 5 hours, or $\frac{1}{4}$ to 1 unit).
- 84a to 87b. ORGAN.—S, I, and II, (2 to 5 hours, or $\frac{1}{4}$ to 1 unit).
- 94a to 97b. BAND AND ORCHESTRAL INSTRUMENTS.—I and II, (2 to 4). Open only to undergraduates.

Courses for Graduates

NOTE: An applicant for admission to the Graduate School as a candidate for the degree of Master of Music or the degree of Master of Science in Music Education is required to have finished successfully a four-year undergraduate curriculum in music or in music education. A graduate with a degree in music from an institution which holds membership in, or is listed by, the Association of American Universities, or from a liberal arts college recognized by the North Central Association or equivalent regional accrediting association, will be admitted without a qualifying examination.

A candidate who holds a bachelor's degree from an independent conservatory or school of music will be considered under the following conditions: (1) The degree must be based on a four-year curriculum in music. (2) The undergraduate work presented for the degree of Bachelor of Music, or its equivalent, must include not less than fourteen hours in academic subjects, with not less than the equivalent of two years of college work in foreign languages, one year of which must be in French, German, or Italian. For the degree of Bachelor of Science in Music Education, or its equivalent, the academic and education courses taken must meet the requirements of the State Certifying Law for Teachers. (3) The applicant must pass a qualifying examination in the branch of music which he wishes to pursue as his major, this examination being under the supervision of the Director and Graduate Faculty of the School of Music.

For the degree of Master of Music, the major field may be in musicology, music theory and composition, music literature, or band and orchestra conducting. For the field of musicology, a reading knowledge of both German and French is desirable.

- 100a-100b. CONTRAPUNTAL FORMS OF COMPOSITION.—I, (½ unit).
 101a-101b. CHROMATIC AND MODERN HARMONY.—S, I, and II, (½ unit).
 105a-105b. ADVANCED COMPOSITION.—I and II, (1 unit).
 106a-106b. ADVANCED INSTRUMENTATION.—S, I, and II, (½ to 1 unit).
 110. INSTRUMENTAL MUSIC OF THE EIGHTEENTH CENTURY.—I, (1 unit).
 111. THE SONATA.—II, (1 unit).
 112a-112b. BEETHOVEN.—S (112a only), I, and II, (1 unit).
 113a-113b. JOHANN SEBASTIAN BACH.—I and II, (1 unit).
 120a-120b. RESEARCH IN SPECIAL FIELDS.—S, I, and II, (1 to 2 units).
 130. ADMINISTRATION AND SUPERVISION OF MUSIC EDUCATION.—S and II, (1 unit).
 138a-138b. ADVANCED CONDUCTING, ADMINISTRATION, AND LITERATURE.—S, I, and II, (1 to 1½ units).
 142a-142b. PIANO LITERATURE.—I and II, (1 to 1½ units).
 152a-152b. VOCAL LITERATURE.—I and II, (1 to 1½ units).
 162a-162b. STRING INSTRUMENTS LITERATURE.—I and II, (1 to 1½ units).
 182a-182b. ORGAN LITERATURE.—S, I, and II, (1 to 1½ units).

NAVAL SCIENCE

Courses for Undergraduates

6. NAVAL LAW AND ADMINISTRATION.—I, (3).
 8. NAVAL ORDANCE.—S, (3).
 9. ORDANCE AND GUNNERY.—I, (3). *Prerequisite:* Naval Science 8.
 101. INTRODUCTION TO NAVAL SCIENCE.—Familiarization with naval organization, basic seamanship, and naval communications. I and II, (3).
 102. COMMUNICATIONS AND TACTICS.—Types of communications, duties of Communication Officers, radio operation and procedure, tactics, and operations. I and II, (3). *Prerequisite:* Naval Science 101.
 201. ORDANCE AND FIRE CONTROL.—Guns, explosives, control of surface, and anti-aircraft fire. I and II, (3).
 202. FIRE CONTROL AND ELECTRONICS.—Fire control problems and fundamentals of naval electronic equipment. II, (3). *Prerequisite:* Naval Science 201.
 301. PILOTING AND NAVIGATION.—Piloting, dead reckoning, star identification, magnetic compass, and maneuvering boards. I, (3).
 302. ADVANCED NAVIGATION AND TACTICS.—Celestial navigation for surface and air, advanced maneuvering boards, tactical formations, and weather. II, (3). *Prerequisite:* Naval Science 301.
 302M. MILITARY HISTORY AND PRINCIPLES OF WAR.—I, (3). Required of N.R.O.T.C. students electing to accept commissions as Second Lieutenants in the U.S.M.C. or U.S.M.C.R. upon graduation.
 [401. NAVAL ENGINEERING.—Marine engineering installations, boilers, main engines and auxiliaries. I, (3).]
 401M. TACTICS AND TECHNIQUE.—Company organization, terrain, combat uses of infantry elements. For Marine Corps candidates only. II, (3). *Prerequisite:* Naval Science 302M.
 [402. INTERNAL COMBUSTION ENGINES, SHIP CONSTRUCTION AND STABILITY.—Diesel engine construction and operation; stability of ships including static and dynamic effects of hull damage, hull design and structural strength. II, (3).]

- 402M. AMPHIBIOUS OPERATIONS.—Principles of amphibious warfare, the amphibious assault, Marine Corps administration. II, (3). For Marine Corps candidates.
- ORDNANCE AND COMMUNICATION LABORATORY AND SCHOOL OF INFANTRY.—Required of all N.R.O.T.C. students. I and II, (no credit).

OCCUPATIONAL THERAPY

Courses for Undergraduates

1. OCCUPATIONAL THERAPY ORIENTATION.—I and II, (2). *Prerequisite:* Registration in occupational therapy curriculum.

PHILOSOPHY

Requirements for L.A.S. Students

- Major:* 20 hours from any courses offered in this department, including Philosophy 2, 3, 4, and 13, and excluding Philosophy 1 and 7.
- Minor:* 20 hours in any two subjects in the same group in the following list: (a) economics, education, history, political science, sociology; (b) English, French, German, Greek, Italian, Latin, Portuguese, Spanish; (c) astronomy, botany, chemistry, geology, mathematics, physics, psychology, zoology. At least eight hours must be taken in each subject. The curriculum on international affairs will be accepted as a minor.

Courses for Undergraduates

NOTE: Division of General Studies 7b (Philosophy and Psychology) may be substituted for Philosophy I wherever the latter constitutes a prerequisite.

1. INTRODUCTION TO PHILOSOPHY.—S, I, and II, (3). *Prerequisite:* Sophomore standing.
2. LOGIC.—Reasoning; detection of fallacies, evidence. S, I, and II, (3). *Prerequisite:* Sophomore standing.
- [5. PHILOSOPHIES OF FREEDOM.—An investigation into the principles underlying the preference for the democratic way of life and the value it embodies. II, (3). *Prerequisite:* Sophomore standing.]
7. MORAL IDEAS AND PRACTICE.—I and II, (2). *Prerequisite:* Sophomore standing.

Courses for Advanced Undergraduates

20. HONORS COURSE.—Continuous through I and II, (2). *Prerequisite:* Senior standing.

Courses for Advanced Undergraduates and Graduates

3. HISTORY OF ANCIENT AND MEDIEVAL PHILOSOPHY.—I, (4). *Prerequisite:* Junior standing.
4. HISTORY OF MODERN PHILOSOPHY.—S and II, (4). *Prerequisite:* Junior standing.
9. PHILOSOPHY OF LAW AND OF THE STATE.—II, (3). *Prerequisite:* One course in philosophy; junior standing.
10. PHILOSOPHY OF SCIENCE.—II, (3). *Prerequisite:* One course in philosophy; junior standing.
11. PHILOSOPHY OF RELIGION.—S, (2); II, (3). *Prerequisite:* One course in philosophy; junior standing.
12. PHILOSOPHY OF ART.—II, (3). *Prerequisite:* One course in philosophy or Division of General Studies 6; junior standing.
13. ETHICS AND VALUE THEORY.—S, (2); I, (3). *Prerequisite:* One course in philosophy; junior standing.
15. GREAT BOOKS IN MODERN THOUGHT.—Hume, Darwin, Marx, Freud. I, (3). *Prerequisite:* One course in philosophy; junior standing.
17. SYMBOLIC LOGIC.—I, (3). *Prerequisite:* Philosophy 2, or consent of instructor.
18. PHILOSOPHICAL IDEAS: ROUSSEAU TO BERGSON.—II, (3). *Prerequisite:* One course in philosophy, or consent of instructor; junior standing.
21. THEORY OF KNOWLEDGE.—II, (3). *Prerequisite:* One course in philosophy; junior standing.
22. AMERICAN PHILOSOPHY.—I, (3). *Prerequisite:* One course in philosophy; junior standing.

23. THE PHILOSOPHY OF PLATO.—I, (3). *Prerequisite:* Philosophy 1 or 3; junior standing.
24. HISTORY OF MEDIEVAL PHILOSOPHY.—II, (3). *Prerequisite:* Philosophy 1; junior standing.

Courses for Graduates

NOTE: Students beginning graduate work with philosophy as their major subject must have had a general course in the history of philosophy, a course in logic, and a general course in psychology.

100. RESEARCH.—S, I, and II, ($\frac{1}{2}$ to 2 units).
106. BRITISH EMPIRICISM (HOBBS, LOCKE).—I, (1 unit).
112. GERMAN IDEALISM (KANT).—II, (1 unit).
119. SEMINAR IN ANCIENT PHILOSOPHY.—I, (1 unit).
- 124b. CONTEMPORARY PROBLEMS.—II, (1 unit).

PHYSICAL EDUCATION

Courses for Advanced Undergraduates and Graduates

(Open to both men and women)

31. PROBLEMS IN PHYSICAL EDUCATION.—Philosophy of physical education, curriculum planning; evaluation of activities; grading procedures; organization plans; teaching procedures; literature on physical education; current trends; recent research. S and II, (4 hours or 1 unit).
32. PROBLEMS IN SCHOOL HEALTH.—School sanitation; health examinations, control of communicable diseases; duties of doctors, nurses, and teachers; mental hygiene; organization of school health program; elementary school and high school instruction in health; methods of teaching health. II, (4 hours or 1 unit).
33. PROBLEMS IN PHYSICAL FITNESS.—Contemporary developments in physical fitness programs; analysis of physical fitness tests; methods and technics used in physical fitness clinics and classes. S, I, and II, (4 hours or 1 unit).

Courses for Graduates

(Open to both men and women)

NOTE: Students desiring to make physical education their major subject for a master's degree must have had at least 24 semester hours of approved undergraduate credit in this subject. At least 16 semester hours are required for a minor. Those who present evidence of satisfactory teaching experience may have these requirements reduced to a minimum of 18 hours for a major, or 12 hours for a minor.

Candidates for the Master of Science degree in physical education must obtain at least four units of satisfactory credit in physical education, including a thesis. The thesis requirement may be waived in a few cases where the circumstances so justify. Those who choose physical education as a minor must complete at least two units of work in this subject.

- S101. PROBLEMS IN PUBLIC HEALTH.—Factual knowledge and fundamental principles of individual, community, state, and national health; functions and relationships of the various health agencies and their contribution to health; present status of preventive medicine and sanitation. S, (1 unit).
103. PROBLEMS IN SAFETY EDUCATION.—Principles of safety education; need for safety education; safety education as a problem in social planning; methods of teaching safety; organization, administration, and evaluation of safety programs. II, (1 unit).
105. PHILOSOPHY OF SPORT.—History of sport in modern times; review and appraisal of current sport programs; social, educational, cultural, economic, hygienic, and recreational aspects. I, (1 unit).
106. TECHNICS OF RESEARCH IN PHYSICAL EDUCATION.—Review and appraisal of the more common research procedures used in the field of physical education; statistical procedures; library methods; survey procedures; evaluation methods; reporting technics. S, I, and II, (1 unit).
107. TRENDS AND TECHNICS IN REHABILITATION.—Scope of rehabilitation; philosophy, principles, and practices; contributions and relationships of various services to reconditioning and rehabilitation; responsibility of physical education and allied

education services for rehabilitation; application of accepted rehabilitation technics. I, (1 unit).

109. RESEARCH.—Research in physical education, health education, safety education, athletic coaching, recreation, and camping. S, I, and II, ($\frac{1}{2}$ to 2 units).

PHYSICAL EDUCATION FOR MEN

General Courses for Undergraduates

- 20a, 20b, 20c, 20d. PRESCRIBED EXERCISES.—Open only to students who are assigned by the Health Service. I and II, (1).
22. BADMINTON.—I and II, (1).
23. VOLLEYBALL.—I and II, (1).
24. BEGINNING SWIMMING.—I and II, (1).
25. INDIVIDUAL TUMBLING.—I and II, (1).
- [27. APPARATUS STUNTS.—I and II, (1).]
28. BOXING.—I and II, (1).
29. WRESTLING.—I and II, (1).
- [30. FOIL FENCING.—I and II, (1).]
31. SOCCER.—I and II, (1).
33. TENNIS.—I and II, (1).
34. SOFTBALL.—I and II, (1).
37. INDIVIDUAL ATHLETICS.—II, (1).
- [38. CIRCUS STUNTS.—I and II, (1).]
41. ADVANCED SWIMMING.—I and II, (1). *Prerequisite:* Ability to swim 100 yards.
42. LIFE SAVING.—I and II, (1). *Prerequisite:* Ability to swim two strokes for 100 yards each.
43. TOUCH FOOTBALL.—I and II, (1).
44. HANDBALL.—I and II, (1).
45. SQUASH.—I and II, (1).
46. ARCHERY.—II, (1).
53. WEIGHT LIFTING.—I and II, (1).
- [56. PERSONAL DEFENSE ACTIVITIES.—I and II, (1).]
60. BASIC PHYSICAL FITNESS.—I and II, (1).
- [62. DEVELOPMENTAL ATHLETICS.—I and II, (1).]

Professional Courses for Undergraduates

1. BEGINNING BASKETBALL.—Theory and practice of fundamentals. S, I, and II, (2).
2. GYMNASTICS.—Theory and practice of tumbling and apparatus stunts, etc. S, I, and II, (2).
3. THEORY OF COACHING.—S, (2); I, (3). *Prerequisite:* Junior standing.
4. BEGINNING FOOTBALL.—Theory and practice of fundamentals. S, I, and II, (2).
5. THEORY OF PRESCRIBING EXERCISE.—S, I, and II, (2). *Prerequisite:* Junior standing.
6. WRESTLING, BOXING, FENCING.—S and I, (2). *Prerequisite:* Junior standing.
8. BASEBALL.—S and I, (2). *Prerequisite:* Junior standing.
9. PRINCIPLES OF SCHOOL HEALTH.—I and II, (3). *Prerequisite:* Junior standing.
11. SWIMMING.—S, I, and II, (2).
12. TRACK AND FIELD.—S, I, and II, (2).
13. ORGANIZATION OF EXTRACURRICULAR SPORTS.—I and II, (3). *Prerequisite:* Junior standing.
- [14. RECREATION AND SOCIAL ACTIVITIES.—I and II, (2).]
15. OUTDOOR RECREATIONAL SPORTS.—I and II, (2).
16. HISTORY OF SPORT.—I and II, (2). *Prerequisite:* Junior standing.
18. CURRICULUM IN PHYSICAL EDUCATION.—S, I, and II, (3). *Prerequisite:* Junior standing.
- [19. ORGANIZATION OF RECREATION PROGRAMS.—I and II, (3). *Prerequisite:* Junior standing.]
70. PROFESSIONAL ORIENTATION.—S, I, and II, (2).
71. PRINCIPLES OF SAFETY EDUCATION.—I and II, (2). *Prerequisite:* Junior standing.
72. CAMP AND OUTING LEADERSHIP.—S, I, and II, (3).
73. TESTS AND MEASUREMENTS IN HEALTH AND PHYSICAL EDUCATION.—S, I, and II, (3). *Prerequisite:* Junior standing.

- [74. ORGANIZATION OF SCHOOL HEALTH PROGRAMS.—I and II, (3). *Prerequisite:* Junior standing.]
76. PRINCIPLES OF RECREATION.—I and II, (3). *Prerequisite:* Junior standing.
77. INDOOR RECREATIONAL SPORTS.—I and II, (2).
78. ADVANCED FOOTBALL.—S and II, (2). *Prerequisite:* Junior standing.
79. ADVANCED BASKETBALL.—S and II, (2). *Prerequisite:* Junior standing.
80. PHYSICAL CONDITIONING PROGRAM.—S, I, and II, (2).
82. ORGANIZATION OF AQUATIC PROGRAMS.—I and II, (2). *Prerequisite:* Junior standing.
83. TRAINING TECHNIQS.—II, (2). *Prerequisite:* Junior standing.
84. FIRST AID.—S, I, and II, (2). *Prerequisite:* Junior standing.
99. INSPECTION TRIP.—Required for graduation. Expenses about \$20. II, (no credit). *Prerequisite:* Junior standing.

PHYSICAL EDUCATION FOR WOMEN

General Courses for Undergraduates

51. ELEMENTARY RHYTHMS.—S, I, and II, (1).
52. INTERMEDIATE RHYTHMS.—I and II, (1).
54. DIVING AND SYNCHRONIZED SWIMMING.—II, (1). *Prerequisite:* Physical Education for Women 76, or equivalent.
- [55. LIFE SAVING.—I, (1). *Prerequisite:* Physical Education for Women 76, or equivalent.]
56. INDIVIDUAL GYMNASTICS.—Recommendation from Department of Health Service is necessary for registration in this course. I and II, (1).
57. MODIFIED ACTIVITIES.—Prescribed recreational sports, relaxation, and exercise. Recommendation from Department of Health Service is necessary for registration in this course. I and II, (1).
58. TEAM SPORTS.—Basketball, softball, speedball, volleyball, tennis. I and II, (1).
59. BOWLING.—I and II, (1).
60. INDIVIDUAL AND DUAL SPORTS.—Archery, badminton, golf. S, I, and II, (1).
61. FENCING.—I and II, (1).
65. EXERCISES FOR FITNESS.—II, (1).
72. FUNDAMENTALS OF MOTOR FITNESS.—S, I, and II, (1).
73. TENNIS AND SKATING.—II, (1).
74. ELEMENTARY SWIMMING.—S, I, and II, (1).
75. SUB-INTERMEDIATE SWIMMING.—For those whose skill is not sufficient to permit registration in intermediate swimming. S, I, and II, (1).
76. INTERMEDIATE SWIMMING.—S, I, and II, (1).
78. AMERICAN SQUARE DANCE.—S, I, and II, (1).
79. ELEMENTARY FOLK DANCING.—I and II, (1).

Professional Courses for Undergraduates

62. RHYTHMS.—II, (3). *Prerequisite:* Junior standing.
- 70a-70b. PHYSICAL EDUCATION PRACTICE.—Hockey, basketball, softball, and rhythms. In addition to practice in these sports, the first semester includes orientation lectures and discussions. I and II, (2). *Prerequisite:* Freshman standing.
- 71a-71b. PHYSICAL EDUCATION PRACTICE.—Tap dancing, folk dancing, soccer, tennis, gymnastics, and apparatus. I and II, (2). *Prerequisite:* Sophomore standing.
80. RECREATION AND CAMP LEADERSHIP.—II, (2). *Prerequisite:* Sophomore or junior standing, or consent of instructor.
- S80. COMMUNITY RECREATION.—S, (2).
81. GAMES FOR SCHOOL AND PLAYGROUND.—I, (2). *Prerequisite:* Junior standing.
82. TECHNIC OF TEACHING SWIMMING.—II, (2). *Prerequisite:* Sophomore or junior standing.
83. PHYSICAL EDUCATION PRACTICE.—I and II, (1). *Prerequisite:* Junior standing.
85. HISTORY OF THE DANCE.—For students specializing in the dance. II, (2). *Prerequisite:* Senior standing; consent of instructor.
86. COMPARATIVE PHYSICAL EDUCATION.—I, (2). *Prerequisite:* Sophomore standing.
- S87. GAMES AND SPORTS FOR HIGH SCHOOL GIRLS.—S, (2).
- [S88. RECREATIONAL GAMES.—S, (2).]
90. ORGANIZATION AND ADMINISTRATION.—II, (2). *Prerequisite:* Senior standing.

91. DANCE COMPOSITION.—II, (2). *Prerequisite*: Consent of instructor.
 S91. SOCIAL DANCING.—S, (1).
92. DANCE CURRICULUM IN SECONDARY SCHOOLS.—Theory and practice in curriculum construction, lesson planning and teaching, dance accompaniment, and presentation of recital programs. II, (3).
- 93a-93b. PHYSICAL EDUCATION PRACTICE.—Speedball, bowling, badminton, archery. I and II, (1). *Prerequisite*: Senior standing.
- 95a-95b. TECHNIC OF TEACHING SPORTS.—Lectures, assigned readings, and practice teaching in University physical education classes. I and II, (4). *Prerequisite*: Junior standing.
96. KINESIOLOGY.—Mechanics of balance and movement of the human body. I and II, (4). *Prerequisite*: Physiology 3a and 3b; junior standing.
97. TESTS AND MEASUREMENTS.—I, (3). *Prerequisite*: Junior or senior standing.
98. THEORY OF INDIVIDUAL AND REMEDIAL GYMNASTICS.—I, (3). *Prerequisite*: Senior standing.
99. SCHOOL HEALTH AND FIRST AID.—Teaching of health in elementary and high schools. Lectures and discussion. S, (2); II, (4). *Prerequisite*: Senior standing.

PHYSICAL SCIENCES

(See also Chemistry and Physics)

A special program leading to the degree of Master of Science in the Physical Sciences is available to meet the needs of students who wish to study in both chemistry and physics rather than to specialize in one department. It is designed primarily for those preparing to teach the physical sciences. Students working toward a degree under the provisions of this program are expected to seek approximately equal proficiency in both physics and chemistry; those whose undergraduate work has emphasized chemistry should balance this by weighting the graduate work in favor of physics, and vice versa. No thesis is required, and all courses in physics and chemistry which normally give graduate credit will carry credit toward the degree. To qualify for the degree, a student must have had, or must include in his program, at least one course in mathematics beyond the calculus, and for which the calculus is prerequisite.

PHYSICS

Requirements for L.A.S. Students

Major: 20 hours in physics excluding courses with numbers lower than 20.

Minor: 20 hours in one or two of the following subjects, with not less than eight hours in each if two are chosen: astronomy, chemistry, education, geology, mathematics, zoology, or any one branch of engineering.

Introductory Courses for Undergraduates

NOTE: For undergraduate students planning to take advanced work or a major in physics, the following courses are suggested: Freshman year: Trigonometry and analytical geometry. Sophomore year: Physics 1a-1b, 3a-3b, and calculus. Junior year: Physics 20, 40, 46a, 60. Senior year: Physics 46b, 71, 72, 80, 81.

Physics 7a-7b and 8a-8b are recommended to pre-medical, pre-dental, and architecture students not specializing in physics, mathematics, chemistry, or engineering.

Physics 14a-14b are recommended for advanced non-technical students and especially for prospective high school physics teachers.

The general physics prerequisite for certain courses may be satisfied by either Physics 1a-1b and 3a-3b or by Physics 7a-7b and 8a-8b, but not by Physics 10a-10b. The calculus prerequisite may be satisfied either by Mathematics 7 and 9 or by Mathematics 8a-8b.

Physics 50, 51 are recommended for students in zoology, physics, and chemistry who expect to do advanced undergraduate or graduate work in biophysics or biochemistry.

1a. GENERAL PHYSICS (MECHANICS, SOUND, AND HEAT).—Lectures with demonstrations and recitations. For students in engineering, mathematics, physics, and chemistry. I and II, (4). *Prerequisite*: Mathematics 2 and 4; registration in Physics 3a.

- 1b. GENERAL PHYSICS (ELECTRICITY, MAGNETISM, AND LIGHT).—S, I, and II, (4). *Prerequisite:* Physics 1a; registration in Physics 3b.
- 3a. GENERAL PHYSICS LABORATORY.—To accompany Physics 1a. I and II, (1). *Prerequisite:* Physics 1a, or registration therein.
- 3b. GENERAL PHYSICS LABORATORY.—To accompany Physics 1b. S, I, and II, (1). *Prerequisite:* Physics 1b, or registration therein.
- 7a. GENERAL PHYSICS (MECHANICS, SOUND, AND HEAT).—Lectures with demonstrations and recitations. For students in arts and sciences, and architecture. S and I, (4). *Prerequisite:* Trigonometry; registration in Physics 8a.
- 7b. GENERAL PHYSICS (LIGHT, ELECTRICITY, AND MAGNETISM).—II, (4). *Prerequisite:* Physics 7a; registration in Physics 8b.
- 8a. GENERAL PHYSICS LABORATORY.—To accompany Physics 7a. S and I, (1). *Prerequisite:* Physics 7a, or registration therein.
- 8b. GENERAL PHYSICS LABORATORY.—To accompany Physics 7b. II, (1). *Prerequisite:* Physics 7b, or registration therein.

Intermediate Courses for Undergraduates

- [14a. INTERMEDIATE MECHANICS, HEAT, AND SOUND.—For students preparing to teach physics in high schools and for other non-technical students. I, (5). *Prerequisite:* General physics and calculus, or consent of instructor.]
- [14b. INTERMEDIATE ELECTRICITY, MAGNETISM, LIGHT, AND MODERN PHYSICS.—For students preparing to teach physics in high schools and for other non-technical students. II, (5). *Prerequisite:* Physics 14a.]
- S21r. RECENT ADVANCES IN PHYSICS.—Popular lectures, illustrated by experiments. S, (½).

Courses for Advanced Undergraduates

- [97-98. THESIS.—I and II, (3). *Prerequisite:* Senior standing and approval of head of department.]

Courses for Advanced Undergraduates and Graduates

16. ELEMENTARY HEAT.—Temperature measurement, pyrometry, radiation, heat flow, thermal stresses, calorimetry, and elementary thermodynamics. II, (3). *Prerequisite:* General physics and calculus.
- 20a. THEORETICAL MECHANICS.—Statics; dynamics of particles. Lectures and problems. S and I, (3). *Prerequisite:* General physics and calculus.
- 20b. THEORETICAL MECHANICS (CONTINUED).—Dynamics of rigid bodies; generalized coordinates and LaGrange's equations; vibrations of systems of particles, with electrical analogies. II, (3). *Prerequisite:* Physics 20a.
30. INTRODUCTION TO THEORETICAL ELECTRICITY.—Laws of electrostatics, magnetism, electric and magnetic circuits, induced currents, alternating currents, oscillations, and thermionic tubes. Lectures and problems. S and II, (3). *Prerequisite:* General physics and calculus.
- 40a. ELECTRICITY AND MAGNETISM.—The electric field, theory of dielectrics, solutions of Poisson's and Laplace's equations, magnetostatics, steady current theory; fundamental electrostatics, resistance bridge measurements, and potentiometer experiments. I, (3). *Prerequisite:* General physics and calculus.
- 40b. ELECTRICITY AND MAGNETISM.—Ampere's law and applications, motion of charged particles in electric and magnetic fields, electromagnetic induction, alternating current theory, the electromagnetic field. Laboratory experiments in A.C. bridge measurements of capacitance, inductance, vacuum tubes, and magnetism. II, (3). *Prerequisite:* Physics 40a.
44. ELECTRIC AND MAGNETIC MEASUREMENTS.—Resistances, galvanometers, capacitances, potentiometers, thermocouples, inductances, magnetization, high frequency measurements. S, I, and II, (3). *Prerequisite:* General physics and calculus.
- 46a. VACUUM TUBES.—II, (3). *Prerequisite:* Physics 40a-40b, or consent of instructor.
- 46b. VACUUM TUBES (CONTINUED).—I, (3). *Prerequisite:* Physics 46a.
- [50a-50b. BIOPHYSICS.—I and II, (3). *Prerequisite:* Physics 40a and 40b, or registration in Physics 40b; Chemistry 2 or 3 and 4; Zoology 1 or Botany 1. It is desirable for the student to have had or to be registered in Chemistry 40.]
- [51a-51b. BIOPHYSICS LABORATORY.—I and II, (1). *Prerequisite:* Physics 50a-50b or registration therein.]

60. HEAT AND THERMODYNAMICS.—Heat phenomena, mechanical theory of heat, thermodynamics. Lectures and recitations. S and I, (3). *Prerequisite:* General physics and calculus.
- 71a. LIGHT.—Geometrical and physical optics; the electro-magnetic theory of light. Lectures and recitations. I, (2). *Prerequisite:* General physics and calculus.
- 71b. LIGHT (CONTINUED).—S and II, (2). *Prerequisite:* Physics 71a.
- 72a. LIGHT LABORATORY.—Lenses and prisms, diffraction, interference, polarization. I, (2). *Prerequisite:* Registration in Physics 71a.
- 72b. LIGHT LABORATORY (CONTINUED).—S and II, (2). *Prerequisite:* Registration in Physics 71b.
80. ATOMIC PHYSICS.—I, (3). *Prerequisite:* General physics and calculus.
81. RADIOACTIVITY AND NUCLEAR PHYSICS.—II, (3). *Prerequisite:* Physics 80.

Courses for Graduates

NOTE: A year of calculus and a year of general physics, with laboratory, are prerequisite for all major and minor graduate work in physics. In addition, graduate students whose major is physics must have had one more advanced course in either physics or mathematics and should be able to use references in German.

122. DYNAMICS.—S and II, (1 unit).
128. PROBLEMS AND METHODS OF THEORETICAL PHYSICS.—I, (1 unit).
- 146a-146b. ELECTRODYNAMICS.—S, I, and II, (1 unit).
- 181a-181b. QUANTUM MECHANICS.—I and II, (1 unit).
- 183a-183b. NUCLEAR PHYSICS.—I and II, (1 unit).
184. LINE SPECTRA AND ATOMIC STRUCTURE.—I, (1 unit).
190. RESEARCH.—S, I, and II, (1 to 3 units).
- 191a-191b. MODERN LABORATORY PRACTICE.—Continuous through I and II, (1 unit).
198. SEMINAR.—I, (1 to 2 units).
199. PHYSICS COLLOQUIUM.—Weekly meetings of instructors and advanced students for the presentation and discussion of papers on current problems. Attendance expected of all graduate students. S, I, and II, (no credit).

PLANT PATHOLOGY

Students may choose a major or minor in plant pathology. Work for the degree of Master of Science or Doctor of Philosophy in plant pathology is administered by a committee appointed by the Dean of the Graduate School and representing the various departments which conduct research work in this field. Before registering, candidates must have the approval of the committee which consists of Dr. N. E. Stevens, Department of Botany; Dr. H. W. Anderson, Department of Horticulture; and Dr. Benjamin Koehler, Department of Agronomy.

Courses for which graduate credit is given in Plant Pathology include Botany 72, 77, 79, 117, 171, 172, and 177, Horticulture 51, 52, and 177. Research may be taken under Agronomy 118b, Botany 100c, or Horticulture 150.

POLITICAL SCIENCE

Requirements for L.A.S. Students

Major: 20 hours from any courses offered in this department. A major may include three hours of constitutional history (History 44 or 62).

Minor: 20 hours selected from one or two of the following subjects: economics, education, history, law, philosophy, social welfare administration, and sociology. At least eight hours must be taken in each subject, if two are chosen. The curriculum on international affairs will be accepted as a minor.

Courses for Undergraduates

NOTE: Political Science 1a-1b, which gives a general survey of national, state, and local government in the United States, is recommended to all undergraduates wishing to begin the study of political science. Students planning for advanced work in this department should take course 1a and either 1b or 16 in their sophomore year.

- 1a. AMERICAN GOVERNMENT: ORGANIZATION AND POWERS.—Historical development and organization of national, state, and local governments; the federal system; national and state constitutions; civil and political rights; party system; nature, structure, powers, and procedure of legislative, executive, and judicial departments in state and nation. S, I, and II, (3). *Prerequisite:* Sophomore standing.
- 1b. AMERICAN GOVERNMENT: FUNCTIONS.—Functions of national, state, and local governments; foreign relations and national defense; taxation and finance; law enforcement; police power; regulation of commerce, communications, and business; promotion of social and economic welfare; current problems. S, I, and II, (3). *Prerequisite:* Sophomore standing; Political Science 1a, or consent of the department.
16. GOVERNMENT IN ILLINOIS.—I, (2). Only one hour credit for this course is allowed to students who also take both Political Science 1a and 1b. *Prerequisite:* Sophomore standing.
- 36a-36b. THESIS AND HONORS COURSE.—S, I, and II, (2 to 5). Open only to seniors whose major is political science and who have a general University average of at least 4.0.

Courses for Advanced Undergraduates and Graduates

4. MUNICIPAL GOVERNMENT.—Growth of cities; their legal and social status; municipal politics and organization in the United States and abroad. S, (2½); I, (3). *Prerequisite:* Junior standing.
5. AMERICAN CONSTITUTIONAL SYSTEM.—Judicial interpretation of constitution; separation of governmental powers; relation of state and national governments; control of interstate commerce; jurisdiction of courts. I, (3). *Prerequisite:* Political Science 1a; junior standing.
- 6a. INTERNATIONAL LAW.—Nature, sources, and development of international law; rights and duties of states; law of peace and war. I, (3). *Prerequisite:* Senior standing, or junior standing with six hours of political science.
- 6b. INTERNATIONAL LAW (CONTINUED).—II, (3). *Prerequisite:* Political Science 6a, or consent of instructor.
- [7. AMERICAN FOREIGN RELATIONS.—Participation in international affairs; presidential initiative; development and organization of the Department of State; diplomatic intercourse; consular service; treaty-making power. II, (2). *Prerequisite:* Junior standing with six hours of political science.]
8. INTERNATIONAL ORGANIZATION.—Early projects of international federation; administrative commissions; international legislation; methods of peaceful settlement; efforts at world organization; League of Nations and United Nations. S and I, (3). *Prerequisite:* Junior standing.
9. PRINCIPLES OF JURISPRUDENCE.—I, (3). *Prerequisite:* Political Science 1a, or equivalent; junior standing.
11. THE CONSTITUTION AND INDUSTRIAL LEGISLATION.—II, (3). *Prerequisite:* Senior standing, or junior standing with five hours of political science or economics or both.
- 12a. PUBLIC ADMINISTRATION.—Administrative organization and activities; centralization and decentralization; methods of management; personnel problems; legislative and judicial control. S, (2½); II, (3). *Prerequisite:* Political Science 1a; junior standing.
- [12b. PROBLEMS IN PUBLIC ADMINISTRATION.—II, (2 or 3). *Prerequisite:* Political Science 12a.]
13. GOVERNMENT AND THE ECONOMIC ORDER.—I, (3). *Prerequisite:* Senior standing, or junior standing with five hours of political science or economics or both.
- [14a. POLITICAL PARTIES: PARTY HISTORY AND ISSUES.—II, (3). *Prerequisite:* Junior standing.]
- 14b. POLITICAL PARTIES: ORGANIZATION AND METHODS.—S, (2½); II, (3). *Prerequisite:* Junior standing.
20. RURAL LOCAL GOVERNMENT.—II, (3). *Prerequisite:* Junior standing.
21. BRITISH GOVERNMENT.—I, (2). *Prerequisite:* Senior standing, or junior standing with six hours of political science.
22. GOVERNMENT AND POLITICS OF CONTINENTAL EUROPE.—Political systems of France, Germany, Italy, Switzerland, and Russia. II, (3). *Prerequisite:* Senior standing, or junior standing with six hours of political science; History 1b, or 32a, or 32b is recommended.

26. ADVANCED STATE GOVERNMENT.—II, (2). *Prerequisite:* Political Science 1a, or equivalent; junior standing.
30. HISTORY OF POLITICAL THEORY.—A survey of major trends and issues in European political thought from ancient times to 1850. I, (3). *Prerequisite:* Junior standing.
31. AMERICAN POLITICAL THEORY.—A survey of American political thought from colonial times to the present. I, (3). *Prerequisite:* Junior standing.
32. PRINCIPLES OF POLITICAL SCIENCE.—S, (3). *Prerequisite:* Senior standing, or junior standing with six hours of political science.
33. CONTEMPORARY POLITICAL THEORY.—II, (3). *Prerequisite:* Senior standing, or junior standing with six hours of political science.
34. MUNICIPAL PROBLEMS.—Municipal administration in the United States and Europe; city planning and housing; public utilities; police and sanitary administration; finances. II, (3). *Prerequisite:* Senior standing, or junior standing with Political Science 4, Economics 1, or Sociology 6.
38. INTERNATIONAL RELATIONS.—Rise of the national state system; forces affecting foreign policies; nationalism, economic interests, desire for security; sources of conflict and suggested solutions; growth of international cooperation. II, (3). *Prerequisite:* Junior standing.

Courses for Graduates

NOTE: Graduate work in political science is conducted in the following special fields: political theory; international law and relations; American and foreign governments; constitutional law, administrative law, and jurisprudence; public administration.

Candidates for advanced degrees in political science must have had at least twenty hours of undergraduate work in political science, economics, sociology, and history, not less than twelve hours of which must have been in political science (which may include three hours in constitutional history). If a student making political science his major is taking both of his minors in other departments, one of them must be in history, economics, or sociology.

Several courses given in other departments are so closely related to those in political science that graduate students whose major is political science may be permitted on petition to take such courses as part of their major work. Attention is called to the bulletin on *University Training for the Public Service* and to the courses in public law in the College of Law, the courses in public finance in the College of Commerce and Business Administration, the courses in city and regional planning in the College of Fine and Applied Arts, and the courses in municipal and sanitary engineering in the College of Engineering.

Graduate students in other departments who choose political science as a minor must have had at least six hours of undergraduate work in political science and three hours in economics, sociology, or history.

101a-101b. HISTORY OF POLITICAL THEORIES.—I and II, (1 unit).

[102. NATURE OF THE STATE.—II, (1 unit).]

103a-103b. SEMINAR IN POLITICAL SCIENCE AND PUBLIC LAW.—Theses, special problems, reports, discussions, and criticism. S, I, and II, (½ to 4 units).

[104. MUNICIPAL ADMINISTRATION.—II, (1 unit).]

105. CONSTITUTIONAL LAW.—Research in selected topics. I, (1 unit).

106. INTERNATIONAL LAW.—Research in selected topics. I and II, (1 unit).

[107. FOREIGN RELATIONS OF THE UNITED STATES.—II, (1 unit).]

108. PROBLEMS OF INTERNATIONAL ORGANIZATION.—S, I, and II, (1 unit).

111. GOVERNMENT AND THE ECONOMIC ORDER.—I, (1 unit).

[112. PROBLEMS IN PUBLIC ADMINISTRATION.—Special topics. II, (1 unit).]

113. STATE GOVERNMENT.—II, (1 unit).

[114. POLITICAL PARTIES.—II, (1 unit).]

[121. PROBLEMS IN BRITISH GOVERNMENT.—I, (1 unit).]

S128. CONTEMPORARY GOVERNMENTAL PROBLEMS.—S, (1 unit).

PSYCHOLOGY

Requirements for L.A.S. Students

Major: 20 hours chosen from courses offered by this department, excluding Psychology 1. It is recommended that one of the following groups of courses be included, according to the student's purpose in making psychology his major subject.

- I. General.—Course 3 and eight hours from courses for advanced undergraduates and graduates.
- II. Personnel Psychology.—
 (a) In Business and Industry: Courses 6, 10, 15, 23, 34, and 43.
 (b) In Colleges and Universities: Courses 6, 14, 15, 23, 34, and 43.
- III. Clinical Psychology.—Courses 6, 16, 34, 35, 37, and 43.

Students making psychology their major as part of their preparation for careers as either personnel or clinical psychologists will be expected to take a course in statistics not later than their junior year. Any student who contemplates a major in psychology should consult the department as early as possible.

Minors: 20 hours chosen from not more than two of the following subjects: economics, education, mathematics, philosophy, physiology, political science, sociology, and zoology. At least eight hours must be taken in each, if two are chosen.

Courses for Undergraduates

NOTE: Division of General Studies 7a (Psychology and Philosophy) may be substituted for Psychology I wherever the latter constitutes a prerequisite.

1. INTRODUCTION TO PSYCHOLOGY.—Essential facts and principles of psychology. Lectures and sectional meetings. S, I, and II, (4). *Prerequisite:* Sophomore standing.
- 1a-1b. HUMAN NATURE.—Biological and social determinants of human nature; development of personality; facts, principles, and applications of modern psychology. This course forms an eight-hour sequence satisfying the general education requirement in the Division of Social Sciences. I and II, (4).
- 1c. HUMAN BEHAVIOR.—The facts, principles, and applications of psychology as a biological science. Together with Physiology 1c, this course forms an eight-hour sequence satisfying the general education requirement in the Division of Biological Sciences. Not open to students electing Psychology 1, 1a, or 1b. II, (4).
2. FIELDS OF PSYCHOLOGY.—The various fields of psychology, with special emphasis on applications. S, (2); I and II, (4). *Prerequisite:* Psychology 1, or junior standing.
3. EXPERIMENTAL PSYCHOLOGY.—Experiments following course 1 in the field of normal adult psychology. Drill in scientific method. I and II, (2). *Prerequisite:* Psychology 1, or registration therein.
6. STATISTICAL METHODS IN PSYCHOLOGY.—Application of elementary statistical methods to psychological data. S, I, and II, (3). *Prerequisite:* Psychology 1.
10. INDUSTRIAL PSYCHOLOGY.—Psychology of work and the factors affecting it, with special reference to industry. S, I, and II, (2). *Prerequisite:* Psychology 1.
14. SOCIAL PSYCHOLOGY.—Social behavior of the individual and of the groups. S, I, and II, (3). *Prerequisite:* Psychology 1.
15. PERSONNEL TESTS AND MEASUREMENTS.—An introduction to the tests most commonly used in the selection and placement of employees in industrial, commercial, and governmental organizations. I and II, (3). *Prerequisite:* Psychology 1 and a course in statistics or concurrent registration therein.
21. CHARACTER AND PERSONALITY.—Analysis of the non-intellectual aspects and determinants of mentality and conduct, with special application to behavior problems and personnel psychology. S, I, and II, (3). *Prerequisite:* Psychology 1. Not open to students who have completed Education 15.
36. PSYCHOLOGY APPLIED TO OCCUPATIONAL THERAPY.—Application of psychological principles and technics to occupational therapy. II, (2). *Prerequisite:* Psychology 1; registration in occupational therapy curriculum.

Courses for Advanced Undergraduates

8. EMOTION AND MOTIVATION.—Facts, problems, and methods of affective psychology, with special reference to recent physiological studies. II, (3). *Prerequisite:* Six hours of psychology.
- [9. PHYSIOLOGICAL PSYCHOLOGY.—I, (2). *Prerequisite:* Psychology 1; a course including laboratory work in one of the biological sciences.]
16. CHILD PSYCHOLOGY.—Psychological development of the individual. I and II, (3). *Prerequisite:* Psychology 1; junior standing.
18. SENSATION AND PERCEPTION.—II, (2). *Prerequisite:* Six hours of psychology.
- [27a-27b. THESIS AND HONORS COURSE.—For major students and candidates for honors. Continuous through I and II, (2). *Prerequisite:* Senior standing; consent of instructor.]

35. CLINICAL PSYCHOLOGY.—S and I, (3). *Prerequisite:* Junior standing; Psychology 1 and a course in child psychology or child development.
40. PSYCHOLOGY OF ADJUSTMENT.—A study of evaluation and understanding of normal and abnormal adjustment mechanisms. I, (4). *Prerequisite:* Psychology 1; junior standing. Credit is not given to students who have credit in Psychology 23 or 35.

Courses for Advanced Undergraduates and Graduates

- [5. COMPARATIVE PSYCHOLOGY.—Animal behavior with particular reference to the behavior of vertebrates. II, (3). *Prerequisite:* Junior standing; Psychology 1; either one other course in psychology or a course in zoology.]
11. LEARNING AND PROBLEM SOLVING.—II, (3). *Prerequisite:* Six hours of psychology.
- [17. HISTORY OF PSYCHOLOGY.—I, (2). *Prerequisite:* Six hours of psychology.]
- [20. VIEWPOINTS IN CONTEMPORARY PSYCHOLOGY.—II, (2). *Prerequisite:* Six hours of psychology.]
23. ABNORMAL PSYCHOLOGY.—Analytical consideration of types of behavior deviating from the normal. S, I, and II, (3). *Prerequisite:* Six hours of psychology.
- [34. INDIVIDUAL DIFFERENCES.—I, (3). *Prerequisite:* Six hours of psychology.]
37. PRACTICE IN PSYCHOLOGICAL EXAMINATION.—Supervised practice with children in the administration and interpretation of tests of general intelligence, special abilities, and achievement. II, (3). *Prerequisite:* Psychology 35; consent of instructor.
43. STUDENT PERSONNEL WORK.—Principles and technics in fitting educational processes to the needs, interests, and abilities of individual college students. I, (3). *Prerequisite:* Psychology 23 and a course in statistics.
91. PSYCHOLOGY FOR LIBRARIANS.—Same as Library Science 91. The application of psychological principles and technics to library services. II, (2). *Prerequisite:* Registration in the Library School.

Courses for Graduates

NOTE: Graduate students who elect psychology as their major subject must have had standard courses, of university grade, both in general psychology and in the psychological laboratory. One general university course is the minimal requirement for graduate students who apply to the department for a minor subject.

Training in clinical psychology is provided by a curriculum leading to the degree of Master of Science in Clinical Psychology. The requirements for this degree are completion of eight units of work in the Urbana departments and an internship of six months in the Institute for Juvenile Research in Chicago (or other institution, agency, or department, upon recommendation of the Department of Psychology and the approval of the Dean of the Graduate School). The work in Urbana shall include a minimum of four units in psychology and two units to be chosen from education and sociology. A prerequisite for full graduate standing in this curriculum is sixteen hours of undergraduate work in psychology, including at least one course each in statistics, child psychology, and clinical psychology.

- 103a-103b. RESEARCH.—Experimental investigations. S, I, and II, ($\frac{1}{2}$ to 2 units).
- 105a-105b. SEMINAR.—Discussion of current topics in their historical setting, with special emphasis on research problems. I and II, (1 unit).
- [S106. NEURAL THEORY OF THE PSYCHOLOGICAL FUNCTIONS.—S, (1 unit).]
108. QUANTITATIVE METHODS.—S, (1 unit).
109. PROBLEMS IN MOTIVATION.—Discussion of current research and concepts within the field of motivation. II, (1 unit).
- [115. ADVANCED CHILD PSYCHOLOGY.—I, (1 unit).]
120. PERSONNEL PSYCHOLOGY IN BUSINESS AND INDUSTRY.—I, (1 unit).
123. PRACTICE IN INDUSTRIAL PSYCHOLOGY.—I and II, (1 unit).
- [130. PSYCHOLOGICAL COUNSELING AND PSYCHOTHERAPY.—I, (1 unit).]
133. SPECIAL TECHNICS IN PSYCHOLOGICAL DIAGNOSIS AND THERAPY.—II, (1 unit). *Prerequisite:* Psychology 37; consent of instructor.
- [140. PERSONALITY.—I, (1 unit).]
- [144. THEORY AND PRACTICE OF STUDENT PERSONNEL WORK.—II, (1 unit).]
150. THE PSYCHODYNAMICS OF SOCIAL GROUPS.—I, (1 unit).

SOCIAL SCIENCES

Through the Division of the Social Sciences (including economics, geography, history, philosophy, political science, psychology, social welfare administration, and sociology), a special program leading to the degree of Master of Arts in the Social Sciences is available to meet the needs of students who wish to study in several related fields within the social sciences rather than to specialize in one department, and the needs of those who contemplate teaching the social sciences. To qualify for this program a student, in addition to meeting the general requirements of the Graduate School, must have had twenty hours of undergraduate credit in the social sciences, and preparation in the particular departments within the division in which he elects to work substantially equivalent to the minor requirements of those departments. Work must be done in at least three departments within the division, or in two departments and in education. If work in education is elected, it may not exceed two units. No thesis is required, but in order to qualify for the degree a student must pass a comprehensive examination.

A curriculum on international affairs is sponsored by the Division of the Social Sciences, and its completion satisfies the requirements for a minor in the departments of Economics, Geography, History, Philosophy, Political Science, and Sociology. Students in the curriculum are required to take Economics 23, Political Science 8, Sociology 70, and, in the following groups of courses, two courses in Group I and two in Group II.

Group I.—Economics 29 or 44; History 32a or 32b, 37b; Philosophy 5; Political Science 33.

Group II.—Economics 8, 24, 30, 31; Education 5; Geography 1, 2, 3, 8, 10, 11, 53, 54; History 1a, 1b, 30a, 30b, 31b, 33b, 34b, 36a, 36b, 46a; Journalism 58; Philosophy 9, 18; Political Science 6a, 6b, 7, 21, 22, 38; Psychology 14; Social Science 1, 2; Sociology 10, 14, 28, 60.

Courses for Undergraduates

1. LATIN-AMERICAN CIVILIZATION.—II, (3). *Prerequisite:* Junior standing.

SOCIAL WELFARE ADMINISTRATION

Courses for Advanced Undergraduates

Minors: Courses in Social Welfare Administration may be counted towards a minor in the departments of Economics, Political Science, and Sociology.

20. INTRODUCTION TO SOCIAL WORK.—Philosophy, principles, methods, and fields of social work, with special emphasis on social case work. S, I, and II, (3). *Prerequisite:* Junior standing.
21. CHILD WELFARE.—Types of child welfare agencies and their services; nature, causes, treatment, and prevention of child welfare problems. S, I, and II, (3). *Prerequisite:* Senior standing.
22. INTRODUCTION TO SOCIAL GROUP WORK.—Discussion of the philosophy, development, and principles of social group work; types of agency organization for recreation and leisure time activity. I and II, (2). *Prerequisite:* Social Welfare Administration 20; senior standing.

Courses for Graduates

NOTE: To be admitted to graduate work in social welfare administration, students must have had at least twenty hours of work in the social sciences, preferably including the introductory courses in economics, sociology, political science, psychology, and biology or physiology.

40. SOCIAL CASE WORK I.—An introductory course including the principles of social case work and their application; selected case records are used as material for study and discussion. I and II, (3).
41. SOCIAL CASE WORK II.—A continuation of Social Case Work I, with special emphasis on diagnostic and treatment skills through the use of case work material. I and II, (3). *Prerequisite:* Social Welfare Administration 40.
45. SOCIAL GROUP WORK I.—Purpose, characteristics, and use of social group work as a method in social work and as an experience for group members. Consideration of objectives, social groups, the group work process, and principles of program development. II, (2).

50. FIELD WORK I.—University field work units are maintained in the Champaign County and Vermilion County Departments of Public Assistance and in the State Division of Child Welfare. The minimum time requirement in field service is fifteen hours a week. I and II, (3). Social Welfare Administration 40 must be taken either preceding or concurrently.
51. FIELD WORK II.—A continuation of Field Work I. Provides a working knowledge of the community resources. The minimum time requirement in field service is fifteen hours a week. I and II, (3). Social Welfare Administration 41 must be taken either preceding or concurrently.
60. PUBLIC ASSISTANCE.—Local, state, and federal organization for public assistance; grants-in-aid; special problems of organization for general relief, work relief, old age assistance, aid to dependent children, aid to the blind, and assistance for the unemployed. I, (3).
61. PUBLIC WELFARE ORGANIZATION AND ADMINISTRATION.—Development of the public welfare services, with special reference to the state-local relationships; history and present administrative problems of state departments, organization for mental hygiene, corrections, civil service, provision for the handicapped, and the welfare services. II, (3).
63. THE LAW AND SOCIAL WORK.—The principles of law with which the social worker should become familiar; those defects in judicial administration that especially affect persons with low incomes; the sources of preventable delay and cost; the establishment of small claims and conciliation courts; the growth of legal aid societies and their work. I, (2).
70. COMMUNITY ORGANIZATION.—An examination of the problem of identifying social needs in the community and of developing programs to meet them; analysis of the functions of the community chest, council of social agencies, social service exchange, social settlement, etc.; functions of the professional worker in the process of social planning. I and II, (2).
80. MEDICAL LECTURES.—Causes, diagnosis, treatment, and effects of major diseases in terms of what the social worker should understand. I, (3).
81. PSYCHIATRIC INFORMATION FOR SOCIAL WORKERS.—Information on normal personality growth from infancy through old age, covering the biological, psychological, and social foundations of human behavior; abnormal behavior in the light of the physical, psychological, and social factors which have contributed to mental illness; prevention, social implications, and treatment possibilities. II, (2).
- [90. PROBLEMS IN CHILD WELFARE ADMINISTRATION.—II, (2).]
100. ADVANCED SOCIAL CASE WORK.—The application of psychiatric concepts to social case work. Discussion of case material designed to increase skill in understanding the individual and in the formation of treatment plans. *Prerequisite:* Social Welfare Administration 40 and 41. I, (1 unit).
- [101. CASE WORK WITH CHILDREN.—II, (1 unit). *Prerequisite:* Social Welfare Administration 40 and 41.]
108. SUPERVISION IN SOCIAL CASE WORK.—This course is designed for supervisors in the social case work field. Discussion will be focused on the content of supervision and the use of relationships in the supervisory process. Students will be given the opportunity to present problems from their own experiences. II, (1 unit).
110. ADVANCED FIELD WORK.—Advanced field work practice in a family or child welfare agency. The minimum time required is fifteen hours a week. The course is designed to give students training in the use of social case work technics and theory, and the opportunity to develop skill in practice under adequate supervision. A case work course must be taken concurrently. I and II, (1 unit).
111. ADVANCED FIELD WORK.—A continuation of Social Welfare Administration 110. I and II, (1 unit).
130. HISTORY OF ENGLISH PHILANTHROPY AND SOCIAL WELFARE.—Survey of the developments of public social service in England, with special attention to the work of individual reformers, prison reform, reform of the criminal law, growth of services for children, public education, and care of the handicapped groups. I, (½ unit).
131. HISTORY OF AMERICAN PHILANTHROPY AND SOCIAL WELFARE.—Survey of the development of public and private social services in the United States. II, (½ unit). *Prerequisite:* Social Welfare Administration 130.
150. RESEARCH.—Preparation of thesis required of each candidate for a degree. I and II, (1 to 2 units).

160. SEMINAR IN PUBLIC WELFARE ADMINISTRATION.—Current problems in public welfare organization and administration will be analyzed. II, (1 unit). *Prerequisite:* Social Welfare Administration 61.
162. SOCIAL INSURANCE.—Social insurance legislation and administration in Europe and the United States, with special reference to the experience in this country. Deals with the problems arising under the different titles of the Federal Social Security Act, with reference to current problems. I, (1 unit).
180. MEDICAL SOCIAL INFORMATION.—A survey of the need for health services; organization and functions of existing medical care programs, public and private; present theories and trends in respect to social and economic aspects of public health. II, (1 unit).
181. ADVANCED SOCIAL PSYCHIATRY.—This course is designed to meet the needs of social workers for a background knowledge of psychopathology and psychotherapy. It includes a further consideration of mental and nervous disorders, maladjustments, and faulty patterns of personal and social integration, with emphasis on psychodynamic factors in their origin and psychotherapeutic elements in their management. I, (1 unit).

SOCIOLOGY

Requirements for L.A.S. Students

Major: 20 hours from any courses in this department.

Minors: 20 hours from any one or two of the following subjects: economics, history, law, philosophy, political science, psychology, and social welfare administration. At least eight hours must be taken in each subject, if two are chosen. The curriculum on international affairs will be accepted as a minor.

Courses for Undergraduates

1. PRINCIPLES OF SOCIOLOGY.—S, I, and II, (3). *Prerequisite:* Sophomore standing.
2. SOCIAL FACTORS IN PERSONALITY.—Nature of person and relation to institutions, social order, and development. I and II, (3). *Prerequisite:* Sociology 1.
4. SOCIAL CONTROL.—S, I, and II, (2). *Prerequisite:* Sociology 1.
- 15a-15b. COMMUNITY AND SOCIETY.—Continuous through I and II, (4).

Courses for Advanced Undergraduates

12. CULTURE PATTERNS AND THE INDIVIDUAL.—Relations between institutions, culture patterns and the common drives, attitudes, and other adjustive mechanisms of group members. S, I, and II, (3). *Prerequisite:* Sociology 1; junior standing.
19. CONTEMPORARY SOCIETY.—Basic character of modern life forms, underlying principles and efforts at reorientation. I and II, (3). *Prerequisite:* Sociology 3; junior standing.
- 90a-90b. HONORS COURSE.—Individual study or research projects. S, I, and II, (2). *Prerequisite:* Senior standing.

Courses for Advanced Undergraduates and Graduates

3. SOCIAL EVOLUTION.—Primitive and modern societal structures; origin and development of social institutions, processes of social change; problems of progress. I and II, (3). *Prerequisite:* Sociology 1; junior standing.
5. THE FAMILY.—The family as a social institution; its origin, nature, development, and trends. S, I, and II, (3). *Prerequisite:* Sociology 1 and junior standing, or senior standing.
6. SOCIOLOGY OF THE CITY.—Study of urban structure and ecology, particularly in light of the planning movement; urban populations; growth and development of urban communities. I and II, (3). *Prerequisite:* Sociology 1; junior standing.
7. RURAL SOCIOLOGY.—Institutions and problems of rural life; attitudes, structure, and organization of rural communities. S and II, (3). *Prerequisite:* Junior standing.
8. CHARITIES.—Dependent classes; modern methods and policies in their treatment; historical perspectives. I, (3). *Prerequisite:* Sociology 1; junior standing. *Recommended background courses:* Sociology 2 and courses in history and economics.

9. CRIMINOLOGY.—Crime from the point of view of personality and social situations. S and II, (3). *Prerequisite:* Sociology 1; junior standing. Open to pre-legal juniors by consent of instructor.
- [10. POPULATION PROBLEMS AND HUMAN ECOLOGY.—I, (3). *Prerequisite:* Sociology 1; junior standing.]
11. SOCIOLOGY OF THE REGION.—Regionalism in theory; concepts and factors conditioning the types of regions; regionalism in operation in its dominant forms. I, (3). *Prerequisite:* Sociology 1; junior standing.
14. PUBLIC OPINION.—Opinion changes and control; propaganda; interest groups and opinion; critical review of methods of measurement. S, I, and II, (3). *Prerequisite:* Sociology 1; junior standing.
17. METHODS OF SOCIOLOGICAL RESEARCH.—I, (3). *Prerequisite:* Eight hours of sociology. Required of all graduate majors in sociology.
- [18. RECENT DEVELOPMENTS IN PUBLIC WELFARE ADMINISTRATION.—II, (3). *Prerequisite:* Sociology 1; junior standing.]
- [24. PENOLOGY.—Probation; parole; methods of institutional treatment. II, (3). *Prerequisite:* Sociology 9.]
25. PREVENTION AND TREATMENT OF JUVENILE DELINQUENCY.—II, (3). *Prerequisite:* Sociology 1 or 9; junior standing.
27. THE COMMUNITY.—II, (3). *Prerequisite:* Sociology 1 and senior standing, or 11 hours of sociology.
28. IMMIGRATION AND ASSIMILATION.—II, (3). *Prerequisite:* Sociology 1; junior standing.
- [42. PRIMITIVE SOCIETIES.—Ethnological and ethnographic study of preliterate people. II, (3). *Prerequisite:* Junior standing.]
44. THE NEGRO.—II, (3). *Prerequisite:* Junior standing.
60. EUROPEAN SOCIOLOGICAL THOUGHT.—II, (3). *Prerequisite:* Sociology 1; junior standing.
- [61. SOCIAL CLASSES.—S, (2½). *Prerequisite:* Sociology I; junior standing.]
- [70. SOCIAL RELATIONS AND THE INTERNATIONAL ORDER.—I and II, (3). *Prerequisite:* Junior standing.]
71. NATIONAL CULTURE SOCIETIES.—I, (3). *Prerequisite:* Junior standing.
72. SOCIAL ROLES.—I, (3). *Prerequisite:* Sociology 1; junior standing.
80. SOCIOLOGY OF EDUCATION.—Same as Education 66. II, (3). *Prerequisite:* Sociology I; junior standing.

Courses for Graduates

NOTE: Graduate students electing sociology as their major must have had at least eight hours of undergraduate work in sociology and fifteen hours in one or more of the following subjects: philosophy, history, psychology, genetics, economics, and political science. Sociology 17 is required of all graduate majors in this department. Those who select sociology as a minor must have had at least six hours of undergraduate work in sociology.

100. GENERAL SOCIOLOGY.—I, (1 unit).
101. SOCIOLOGICAL THEORY AND METHOD.—I, (1 unit).
102. RECENT DEVELOPMENTS IN SOCIOLOGY.—II, (1 unit).
105. RESEARCH IN EDUCATION FOR MARRIAGE AND THE FAMILY.—S and II, (1 unit).
- [106. URBAN COMMUNITIES AND URBANIZATION.—I, (1 unit).]
107. RURAL COMMUNITIES.—II, (1 unit).
- [108. RESEARCH IN SOCIAL EFFECTS OF POVERTY, THEIR PREVENTION AND TREATMENT.—I, (1 unit).]
109. RESEARCH IN CRIMINOLOGY.—II, (1 unit).
112. THEORY OF SOCIAL GROUPS.—Modern nationality groups. II, (1 unit).
114. PUBLIC OPINION.—I and II, (1 unit).
- [120. EUROPEAN SOCIOLOGICAL THEORY.—I and II, (1 unit).]
- [122. REGIONAL PROBLEMS AND PLANNING.—I, (1 unit).]
- [124. ADVANCED PENOLOGY.—I, (1 unit).]
- [128. FUSION OF CULTURE RESULTING FROM IMMIGRATION.—II, (1 unit).]
- S130. SOCIOLOGY OF INTERNATIONAL CONFLICT.—S, (1 unit).
150. SEMINAR AND RESEARCH.—Preparation of theses. S, I, and II, (½ to 3 units).
- [S180. SOCIOLOGY OF EDUCATION.—S, (1 unit).]

SPANISH AND ITALIAN

(Including Portuguese)

SPANISH

Requirements for L.A.S. Students

Major: 20 hours in Spanish, excluding Spanish 1a, 1b, 2a, 6a, 6b, and including at least five hours from the courses for advanced undergraduates and graduates. Social Science I, Latin-American Civilization, counts toward the major in Spanish and is required for teacher-training majors in Spanish.

Minors: 20 hours in not more than two of the following subjects, with at least eight hours in each subject if two are chosen: education, English (excluding Rhetoric 1 and 2), French, German, Greek, history, Italian, Latin, philosophy, Portuguese.

Courses for Undergraduates

- 1a. ELEMENTARY SPANISH.—Grammar, pronunciation, reading, composition, conversation. For students who have had no work in Spanish. S, I, and II, (4). Seniors receive only three hours credit. No credit toward graduation is given for Spanish 1a without 1b.
- 1b. ELEMENTARY SPANISH (CONTINUED).—S, I, and II, (4). Seniors receive only three hours credit. *Prerequisite:* Spanish 1a, or one year of high school Spanish.
- 2a. MODERN SPANISH.—Rapid reading, review of grammar, composition, conversation. S, I, and II, (4). *Prerequisite:* Spanish 1b, or two years of high school Spanish.
- 2b. MODERN SPANISH (CONTINUED).—S, I, and II, (4). *Prerequisite:* Spanish 2a, or three years of high school Spanish.
- 3a-3b. INTRODUCTION TO SPANISH LITERATURE.—Reading of modern authors of Spain and Latin-America. S (3b only), I, and II, (3). *Prerequisite:* Spanish 2b, or four years of high school Spanish.
- 5a-5b. COMMERCIAL SPANISH.—I and II, (2). *Prerequisite:* Spanish 2b, or four years of high school Spanish.
- 6a-6b. ELEMENTARY COMPOSITION AND CONVERSATION.—I and II, (2). *Prerequisite:* Spanish 1b, or two years of high school Spanish.
- 7a-7b. INTERMEDIATE COMPOSITION AND CONVERSATION.—S, I, and II, (2). Note: Spanish 7a and 7b are required for teacher-training majors in Spanish. *Prerequisite:* Spanish 2b, or four years of high school Spanish.
- 8a-8b. ADVANCED COMPOSITION AND CONVERSATION.—S (8a only), I, and II, (2). *Prerequisite:* Spanish 7b, or equivalent.
9. SPOKEN SPANISH.—Intensive course, exclusively oral-aural. Required for teacher-training majors in Spanish. I, (4). *Prerequisite:* Spanish 7b; senior standing.
25. METHODS OF TEACHING SPANISH.—Discussion and laboratory work in phonetics. II, (3). *Prerequisite:* Twenty hours in Spanish, or sixteen hours in Spanish plus twenty in French; senior standing or consent of instructor.
- 28a-28b. SENIOR THESIS.—For candidates for honors in Spanish, and for other seniors. S, I, and II, (2).

Courses for Advanced Undergraduates and Graduates

NOTE: All advanced courses in Spanish have the following prerequisite: Spanish 3a-3b, or equivalent, and junior standing; or senior standing and consent of instructor.

- 10a-10b. SURVEY OF SPANISH LITERATURE.—I and II, (3).
- 11a-11b. CERVANTES: DON QUIXOTE.—S (11a only), (2).
- 12a-12b. CLASSICAL SPANISH DRAMA.—S (12a only), I, and II, (2).
- 14a-14b. PHONETICS AND SYNTAX.—I and II, (2). Note: Spanish 14a and 14b are required for teacher-training majors in Spanish.
- 15a-15b. ORÍGENES DE LA CULTURA HISPANO-AMERICANA.—(In Spanish). I and II, (2).
- [16a-16b. GRANDES ESCRITORES DE LA AMÉRICA HISPANA EN LOS SIGLOS XIX Y XX.—(In Spanish). I and II, (2).]
- [17a-17b. MODERN SPANISH AND SPANISH-AMERICAN DRAMA.—I and II, (2).]
- [18a-18b. SURVEY OF LATIN-AMERICAN LITERATURE.—I and II, (3).]
- 19a-19b. MODERN SPANISH AND SPANISH-AMERICAN NOVEL.—I and II, (3).

Courses for Graduates

NOTE: Students doing graduate work for an advanced degree in Spanish must acquire a practical command of the language. Some knowledge of Italian or Portuguese is recommended. A considerable amount of parallel training in one or more other languages or literatures such as English, French, German, Greek, or Latin, is indispensable. In any case, some Latin is required of candidates for the Ph.D. degree, a reading knowledge of simple Latin prose being the desirable minimum.

- [130a-130b. SPANISH LITERATURE IN THE SIXTEENTH CENTURY.—I and II, (1 unit).]
 [131a-131b. SPANISH LITERATURE IN THE SEVENTEENTH CENTURY.—I and II, (1 unit).]
 131c. SPANISH LITERATURE IN THE SEVENTEENTH CENTURY: DRAMA.—S, (1 unit).
 135a-135b. THE MODERN SPANISH AND SPANISH-AMERICAN NOVEL.—S (135a only), I, and II, (1 unit).
 138a-138b. LATIN-AMERICAN LITERATURE.—I and II, (1 unit).
 139a-139b. SPANISH LITERATURE IN THE MIDDLE AGES.—I and II, (1 unit).
 180a-180b. SEMINAR IN SPANISH LINGUISTICS.—Research work in Castilian and Latin-American linguistics. I and II, (1 unit).
 [185a-185b. OLD SPANISH.—I and II, (1 unit).]
 195. SEMINAR.—Research work in special topics. S, I, and II, (1 to 2 units).

ITALIAN

Requirements for L.A.S. Students

Major: 20 hours of Italian, excluding Italian 1a and 1b, and including at least five hours from the group for advanced undergraduates and graduates. History 31a and 31b, and Italian 28 are acceptable. Italian 28 for majors can be arranged for advanced group credit.

Minors: 20 hours in not more than two of the following subjects, with at least eight hours in each subject if two are chosen: education, English (excluding Rhetoric 1 and 2), French, German, Greek, history, Latin, philosophy, Portuguese, Spanish.

Courses for Undergraduates

- 1a-1b. ELEMENTARY ITALIAN.—Grammar, composition, conversation, reading. For students who have had no work in Italian. I and II, (4). Seniors receive only three hours credit. No credit toward graduation is given for Italian 1a without Italian 1b.
 2a-2b. INTERMEDIATE ITALIAN.—I and II, (3). *Prerequisite*: Italian 1b, or two years of high school Italian.
 28a-28b. SENIOR THESIS.—For candidates for honors in Italian, and for other seniors. I and II, (2).

Courses for Advanced Undergraduates and Graduates

- 3a-3b. DANTE: LA DIVINA COMMEDIA.—I and II, (2). *Prerequisite*: Italian 1b; junior standing.
 [4a-4b. MODERN ITALIAN LITERATURE.—I and II, (2). *Prerequisite*: Italian 1b; junior standing.]

Courses for Graduates

NOTE: Students doing graduate work for an advanced degree in Italian must acquire a practical command of the language. Some knowledge of Spanish or Portuguese is recommended. A considerable amount of parallel training in one or more other languages or literatures such as English, French, German, Greek, or Latin, is indispensable. In any case, some Latin is required of candidates for the Ph.D. degree, a reading knowledge of simple Latin prose being the desirable minimum.

- [140a-140b. ITALIAN LITERATURE IN THE MIDDLE AGES: PETRARCH, BOCCACCIO.—I and II, (1 unit).]
 143a-143b. ITALIAN LITERATURE IN THE RENAISSANCE.—I and II, (1 unit).
 195. SEMINAR.—Research in special topics. I and II, (1 to 2 units).

PORTUGUESE

Courses for Undergraduates

- 1a-1b. ELEMENTARY PORTUGUESE.—I and II, (4). No credit toward graduation is given for Portuguese 1a without Portuguese 1b. *Prerequisite:* Sophomore standing.
 2a-2b. INTERMEDIATE PORTUGUESE.—I and II, (4). *Prerequisite:* Portuguese 1b.

Courses for Advanced Undergraduates and Graduates

- 10a-10b. INTRODUCTION TO BRAZILIAN AND PORTUGUESE LITERATURES.—I and II, (3). *Prerequisite:* Portuguese 2b or consent of instructor; senior standing.

SPEECH

Requirements for L.A.S. Students

- Major:* 20 hours in Speech, excluding 1, 5, 10, and including Speech 3, 6, 8, 18, 19.
Minors: 20 hours in English, excluding English 41, 42, and Rhetoric 0, 1, 2, 5, 9, 10, 21, 22, and including one course in English literature chosen from the advanced group; or 20 hours in English (excluding the previously mentioned courses) and one of the following subjects: economics, French, German, Greek, history, Latin, law, philosophy, political science, psychology, or sociology. At least eight hours must be taken in each subject, if two are chosen.

Courses for Undergraduates

1. PRINCIPLES OF EFFECTIVE SPEAKING.—Speech composition; delivery; how to hold the attention and interest of the audience. Short expository and argumentative talks on selected topics. S, I, and II, (3). Seniors receive only two hours credit. Open to freshmen.
2. BUSINESS AND PROFESSIONAL SPEAKING.—Persuasion, composition, and delivery of common types of business and semi-public addresses. S, I, and II, (2). *Prerequisite:* Speech 1; sophomore standing.
3. ARGUMENTATION.—Construction of arguments, adaptation to audiences, refutation, practice debates on topics of current interest. S, I, and II, (3). *Prerequisite:* Speech 1; sophomore standing.
5. VOICE IMPROVEMENT.—A drill course for the improvement of the normal speaking voice. I and II, (1). Seniors receive only one-half hour credit. *Prerequisite:* Consent of instructor. Open to freshmen.
8. FUNDAMENTALS OF ACTING.—S, (2); I and II, (3). *Prerequisite:* Speech 10; sophomore standing.
10. ORAL INTERPRETATION OF LITERATURE.—Principles of interpretation; analysis and oral reading of prose literature and verse. S, I, and II, (2). Seniors receive only one hour credit. Open to freshmen.
11. ELEMENTS OF STAGECRAFT.—Practice in staging and producing plays. S, (2); I, (4). *Prerequisite:* Speech 8; sophomore standing.

Courses for Advanced Undergraduates

4. ADVANCED ARGUMENTATION.—II, (3). *Prerequisite:* Speech 3; junior standing.
6. PERSUASION.—I and II, (3). *Prerequisite:* Speech 1; junior standing.
7. METHODS AND MATERIALS OF PUBLIC DISCUSSION.—II, (3). *Prerequisite:* Speech 3 or 6; junior standing.
9. ORAL INTERPRETATION OF SHAKESPEARE.—I, (2). *Prerequisite:* Speech 10; junior standing.
12. TEACHING OF SPEECH.—Organization of high school and college courses; methods; debate and contest coaching; theatricals; standards of criticism. S and II, (2). *Prerequisite:* Ten hours of speech, or consent of instructor; junior standing.
13. METHODS OF TEACHING LIP READING.—S and I, (3). *Prerequisite:* Junior standing; consent of instructor.
- 16a. PLAY DIRECTING.—S, (2); I, (3). *Prerequisite:* Speech 8; junior standing.
- 16b. PLAY DIRECTING.—Principles and methods of conducting rehearsals; problems of casting; rhythm; advanced composition; styles of directing. II, (3). *Prerequisite:* Speech 16a; consent of instructor.

27. **DRAMATICS FOR ENGLISH TEACHERS.**—An elementary survey of procedures in school dramatics. S, (2); I, (3).
29. **ADVANCED ACTING.**—Advanced principles of inner and outer acting technic; methods of preparation used by distinguished actors; modern principles of characterization; historical periods and styles of acting. I, (3). *Prerequisite:* Speech 8.

Courses for Advanced Undergraduates and Graduates

- 14a. **SPEECH CORRECTION.**—Causes, symptoms, and treatment of speech disorders. S and I, (4). *Prerequisite:* Ten hours of speech, or consent of instructor; senior standing.
- 14b. **SPEECH CORRECTION.**—II, (4). *Prerequisite:* Speech 14a.
- CLINICAL PRACTICE 1-2.**—Case work in remedial speech. S, I, and II, (1 to 3). *Prerequisite:* Must be taken concurrently with Speech 14a-14b.
15. **METHODS OF TEACHING SPEECH TO THE DEAF.**—II, (3). *Prerequisite:* Speech 13 and 14a, or consent of instructor; senior standing.
17. **ADVANCED INTERPRETATION.**—Principles of literary criticism applied to oral interpretation. II, (3). *Prerequisite:* Speech 10; junior standing.
18. **PRONUNCIATION.**—Methods of voice improvement; the sounds of English studied by means of the International Phonetic Alphabet. S, (2); I, (3). *Prerequisite:* Junior standing.
19. **SPEECH SCIENCE.**—Principles of physics involved in the production of speech sounds. S, (2); I, (3). *Prerequisite:* Ten hours of speech, or consent of instructor; junior standing.
20. **SPEECH SCIENCE.**—Principles of physiology involved in the production of speech sounds. II, (3). *Prerequisite:* Ten hours of speech, or consent of instructor; junior standing.
21. **THEORIES OF PLAY PRODUCTION.**—Development of modern theatrical production; application of its aesthetic principles and technics to problems of acting, directing, and staging. II, (3).
- 22a-22b. **HISTORY OF THE THEATRE.**—The theatre and the theatre arts from 1576 to 1900, with special reference to the English-speaking theatre. S, (2); I and II, (3).
23. **AUDIOMETRY AND THE USE OF HEARING AIDS.**—Selective and diagnostic tests of hearing. S and I, (3). *Prerequisite:* Senior standing; consent of instructor.
26. **HISTORY OF AMERICAN ORATORY.**—Public address as an instrument of American democracy. II, (3). *Prerequisite:* Speech 3 or 6.

Courses for Graduates

NOTE: Students who enter graduate work with speech as their major must give evidence of their ability to write good English, and must present the equivalent of fourteen hours of undergraduate work in speech. Students making speech their minor may be admitted to such courses as in the judgment of the instructor in charge they are qualified to pursue.

Candidates for the degree of Master of Arts in speech, in addition to complying with the general rules of the Graduate School, must (1) pass a general examination and (2) prepare a thesis on some subject approved by the faculty.

101. **RESEARCH IN SPECIAL TOPICS.**—S, I, and II, (1 unit).
111. **SEMINAR IN PLAY PRODUCTION.**—II, (1 unit).
114. **SEMINAR IN SPEECH CORRECTION.**—S, I, and II, (1 to 2 units).
116. **SEMINAR IN PLAY DIRECTING.**—S and I, (1 unit).
117. **DIAGNOSIS OF SPEECH DISORDERS.**—Study of diagnostic procedures used in analysis of symptoms involved in speech disorders. S and II, (1 unit).
119. **SEMINAR IN SPEECH SCIENCE.**—I, (1 to 2 units).
- 121a-121b. **THE HISTORY OF RHETORICAL THEORY.**—S (121a only), I, and II, (1 unit).

THEORETICAL AND APPLIED MECHANICS

Courses for Undergraduates

1. **ANALYTICAL MECHANICS (STATICS).**—Force systems; equilibrium; centroids; center of gravity; friction. S, I, and II, (2). *Prerequisite:* Registration in Mathematics 9.
2. **ANALYTICAL MECHANICS (DYNAMICS).**—Kinematics and kinetics. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 1.

3. RESISTANCE OF MATERIALS.—Mechanics and materials; properties and requirements for materials of construction. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 1.
4. HYDRAULICS.—Pressure and flow of water, utilization as motive power. S, I, and II, (2). *Prerequisite:* Theoretical and Applied Mechanics 1; registration in Theoretical and Applied Mechanics 2.
5. MECHANICS OF FLUIDS.—Kinematics of fluid motion; elements of hydrodynamics; effects of viscosity, compressibility, and drag. S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 2.
- 17-18. ELEMENTS OF MECHANICS (STATICS) AND STRENGTH OF MATERIALS.—Force systems; equilibrium; friction, centroids; direct stress, riveted joints, beams, moment of inertia, deflection, columns. For architects and others who have not taken the calculus. I and II, (3). *Prerequisite:* Mathematics 6a.
63. RESISTANCE OF MATERIALS LABORATORY.—Tests to determine properties and to illustrate mechanics of materials. S, I, and II, (1). *Prerequisite:* Registration in Theoretical and Applied Mechanics 3.
64. HYDRAULICS LABORATORY.—Measurement of flow, friction in pipes, pumping and power. S, I, and II, (1). *Prerequisite:* Registration in Theoretical and Applied Mechanics 4.
65. LABORATORY IN FLUID MECHANICS.—Laminar and turbulent flow, viscosimetry, smoke and water tunnels, cavitation, open channel flow. II, (1). *Prerequisite:* Registration in Theoretical and Applied Mechanics 5.
- 97-98. THESIS.—S, and continuous through I and II, (1 to 3). *Prerequisite:* Senior standing and approval of head of department.

Courses for Advanced Undergraduates and Graduates

41. ADVANCED MECHANICS OF MATERIALS.—S, I, and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63.
42. PROPERTIES OF ENGINEERING MATERIALS: SPECIFICATIONS.—Properties and uses of materials of construction. II, (3). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63.
43. FLUID MECHANICS AND ADVANCED HYDRAULICS.—S, I, and II, (3 hours or $\frac{1}{2}$ to 1 unit). *Prerequisite:* Theoretical and Applied Mechanics 4 and 64 or 5.
44. ADVANCED LABORATORY WORK IN TESTING MATERIALS.—II, (3 hours or $\frac{1}{2}$ to 1 unit). *Prerequisite:* Theoretical and Applied Mechanics 3 and 63.
- [47. ENGINEERING ANALYSIS.—I, (3 hours or $\frac{1}{2}$ to 1 unit). *Prerequisite:* Theoretical and Applied Mechanics 2 and 3.]
- [48. ENGINEERING ANALYSIS.—Continuation of Theoretical and Applied Mechanics 47. II, (3 hours or $\frac{1}{2}$ to 1 unit).]
49. ADVANCED DYNAMICS AND VIBRATIONS.—S and I, (3 hours or $\frac{1}{2}$ to 1 unit). *Prerequisite:* Theoretical and Applied Mechanics 2 and 3.
50. ADVANCED DYNAMICS AND VIBRATIONS.—Continuation of Theoretical and Applied Mechanics 49. II, (3 hours or $\frac{1}{2}$ to 1 unit).

Courses for Graduates

NOTE: Graduate students electing theoretical and applied mechanics as their major must have had the equivalent of the undergraduate courses required for a bachelor's degree in general engineering. The courses open to seniors (listed above) may be taken for minor credit by graduate students whose major is in other departments.

- [103. FLUID MECHANICS.—I and II, (1 unit).]
107. LABORATORY INVESTIGATIONS IN STRENGTH OF MATERIALS.—S and II, (1 to 2 units).
108. LABORATORY INVESTIGATIONS IN HYDRAULICS.—S, I, and II, (1 to 2 units).
110. ANALYTICAL STUDY OF EXPERIMENTAL WORK ON REINFORCED CONCRETE.—I, (1 unit).
111. ANALYTICAL STUDY OF EXPERIMENTAL WORK ON REINFORCED CONCRETE.—II, (1 unit).
- [112. STRUCTURAL MECHANICS.—I, (1 unit).]
- [113. SELECTED TOPICS IN STRUCTURAL MECHANICS.—II, ($\frac{1}{2}$ unit).]
114. THEORY OF ELASTICITY WITH APPLICATIONS TO ENGINEERING PROBLEMS.—I, (1 unit).
115. THEORY OF ELASTICITY WITH APPLICATIONS TO ENGINEERING PROBLEMS.—Continuation of Theoretical and Applied Mechanics 114. II, (1 unit).

116. RESISTANCE OF MATERIALS.—S and I, ($\frac{1}{2}$ to 1 unit).
 116a. MECHANICS OF MATERIALS.—Same as Theoretical and Applied Mechanics 116. II, ($\frac{1}{2}$ to 1 unit).
 116b. MECHANICS OF MATERIALS.—Continuation of Theoretical and Applied Mechanics 116a. II, ($\frac{1}{2}$ to 1 unit).
 117. PROPERTIES OF ENGINEERING MATERIALS.—II, ($\frac{1}{2}$ to 1 unit).
 198. THESIS.—I and II, (1 to 2 units).

VETERINARY PATHOLOGY AND HYGIENE

Courses for Undergraduates

5. LIVESTOCK SANITATION AND PUBLIC HEALTH.—Prevention of infectious, contagious, parasitic, and nutritional diseases of animals in relation to agriculture and public health. It is recommended that all sophomore students primarily interested in animal and dairy husbandry enroll in this course. S and I, (2). *Prerequisite:* Sophomore standing.

Courses for Graduates

NOTE: Candidates for the degree of M.S. or Ph.D. in veterinary pathology and hygiene must be graduates of a recognized veterinary college. Students whose major is in related fields may register for a minor in this field.

101. LABORATORY DIAGNOSTIC METHODS IN VETERINARY PATHOLOGY.—Diagnosis of the animal diseases caused by bacteria, filtrable viruses, and fungi. I, ($\frac{1}{2}$ to 1 unit).
 102. LABORATORY DIAGNOSTIC METHODS IN VETERINARY PATHOLOGY.—Diagnosis of the animal diseases caused by parasitic protozoa, helminths, arthropods, metabolic disturbances, and poisonous plants. II, ($\frac{1}{2}$ to 1 unit).
 103. RESEARCH.—Assigned problems of research in veterinary pathology, histology, physiology, parasitology, and bacteriology. S, I, and II, (1 to 2 units).
 104. SEMINAR.—Required of all graduate students whose major is veterinary pathology and hygiene. I and II, ($\frac{1}{4}$ unit).
 105. ADVANCED VETERINARY PATHOLOGY.—Advanced study of gross and microscopic pathology of diseases of domestic animals. I, (1 unit).

VETERINARY PHYSIOLOGY AND PHARMACOLOGY

Courses for Undergraduates

2. PHYSIOLOGY OF DOMESTIC ANIMALS.—Two lectures and one recitation or demonstration each week. II, (3). *Prerequisite:* Chemistry I, or equivalent; sophomore standing.

ZOOLOGY AND PHYSIOLOGY

ZOOLOGY

Requirements for L.A.S. Students

Major: 20 hours in zoology, excluding Zoology 1, 7, 14, 15, 16, and including five hours of advanced work.

Minors: 20 hours chosen from one or two of the following subjects: animal husbandry, bacteriology, botany, chemistry, education, entomology, geography, geology, mathematics, physics, physiology, psychology. At least eight hours must be taken in each subject, if two are chosen.

Courses for Undergraduates

NOTE: Division of General Studies 3 (General Biology) may be substituted for Zoology 1 or 15 wherever the latter constitute a departmental prerequisite.

1. GENERAL ZOOLOGY.—Animal biology; structure, function, environmental relations, origin, and development of animals. Lectures, laboratory, and quiz. S, I, and II, (5). Seniors receive only four hours credit.
 2. COMPARATIVE VERTEBRATE ANATOMY.—Classification and distribution of the vertebrate animals. Comparative anatomy of organs and organ systems, their func-

- tion and evolution. Lectures, laboratory, and quiz. S, I, and II, (5). *Prerequisite*: Zoology 1. Grade of "C" in Zoology 1 is required of freshmen.
7. EVOLUTION.—Emphasis on biological processes in which man is involved. Lectures, demonstrations, and discussions. S and I, (3). *Prerequisite*: Sophomore standing.
9. INTRODUCTION TO ECOLOGY.—Seasonal and climatic relations of species and communities. II, (3 to 4). *Prerequisite*: Zoology 1, or equivalent.
- 10a-10b. FIELD ECOLOGY (a) AND ORNITHOLOGY (b).—Study in forests, streams, and lakes in vicinity of Reelfoot Lake, Tenn., covering 5 days. Expenses about \$24. *Prerequisite*: Registration in Zoology 9 or 16, or equivalent. II, (1). Registration in 10a and 10b in two different years and preparation of reports on (a) and (b) give a total of 2 hours credit.
15. ZOOLOGY.—Half of a one-year Botany-Zoology sequence dealing with the fundamental principles of the structure, physiology, reproduction, ecology, and evolution of animals, with special emphasis on their relations to human life. This course meets the general education requirements in the College of Liberal Arts and Sciences and the Zoology requirement for students of Agriculture. I and II, (4). *Prerequisite*: Botany 1b or 5 or 15.
16. BIRD STUDY.—Native birds; their identification, food relations, seasonal distribution, migration activities, economic importance, and conservation. II, (2). *Prerequisite*: Sophomore standing.

Courses for Advanced Undergraduates and Graduates

3. VERTEBRATE EMBRYOLOGY.—The development of the vertebrate body and its organs. Lectures, laboratory, and quiz. S, I, and II, (5). *Prerequisite*: Zoology 2; junior standing.
4. INVERTEBRATE ZOOLOGY.—Lower invertebrates; structure and development. Application of biological principles. Laboratory, lectures, and demonstrations. II, (3). *Prerequisite*: Zoology 1; junior standing.
6. VERTEBRATE HISTOLOGY.—Study and preparation of tissues of the vertebrate body. Lecture and laboratory. II, (3). *Prerequisite*: Zoology 3; junior standing.
11. ANIMAL ECOLOGY AND GEOGRAPHY.—Dynamics, development, physiological characters, and distribution of communities. I, (3 to 5). *Prerequisite*: One year of zoology; senior standing.
17. FIELD ZOOLOGY.—Collection, preservation, and identification of lower vertebrates and land and fresh-water invertebrates; habits and life histories of selected forms. Field and laboratory work, readings. S and I, (3). *Prerequisite*: One year of zoology; senior standing.
18. PROTOZOOLOGY.—Morphology, physiology, and life history of representative free-living and parasitic protozoa. Lectures and laboratory. S and I, (3 to 5). *Prerequisite*: One year of zoology; senior standing.
19. WILDLIFE MANAGEMENT AND CONSERVATION.—Size and measurement of animal population, factors affecting reproduction and mortality, life history, management policies for fishes, mammals, and birds. I, (3). *Prerequisite*: One year of zoology and junior standing or, for students in the College of Agriculture, Zoology 14 or 15 and senior standing.
- 20a-20b. GENERAL SEMINAR.—For members of the staff and graduate students. Also open to seniors whose major is zoology. I and II, (no credit). Attention is called to the following special clubs and seminars, some of which are inter-departmental: Animal Ecology Club, Genetics Seminar, Physiology Journal Club, Animal Physiology Colloquium, and Hexapoccia (Entomology Club).
- 21a-21b. INDIVIDUAL TOPICS.—For those who wish to study individual problems. Candidates for honors and undergraduates who are enrolled for tutorial work or in individual curricula should register in this course. Graduates may register for topics involving individual work not assigned in other courses. Laboratory, conferences, and readings. S, I, and II, (2 to 5). *Prerequisite*: Two years of zoology; senior standing; approval of department.
22. ADVANCED VERTEBRATE ZOOLOGY.—II, (2 to 4). *Prerequisite*: Zoology 3; senior standing.
- 25a. GENETICS.—Principles of heredity. Lectures, readings, and discussions. II, (3). *Prerequisite*: Zoology 1 or 14, or one semester of any biological science; junior standing.

- 25b. GENETICS.—Laboratory experiments illustrating the principles of heredity, problems, demonstrations. II, (2). *Prerequisite:* Zoology 25a or concurrent registration therein; junior standing.
26. ORNITHOLOGY.—Structure, functions, environmental relations, habits, life history, and identification of birds. II, (2 or 3). *Prerequisite:* One year of zoology; junior standing.
31. HELMINTHOLOGY.—Parasites, life cycles, morphology, taxonomy. Laboratory technique, readings, quiz, demonstrations. II, (3 to 5). *Prerequisite:* Zoology 2; junior standing.
36. BIOLOGY FOR TEACHERS.—Same as Botany 36. Limited to teachers and those who expect to teach. II, (3). *Prerequisite:* One course in zoology and one in botany; junior standing.
- S59. INTRODUCTORY ECOLOGY.—S, (3). *Prerequisite:* One year of zoology; junior standing.

Courses for Graduates

NOTE: Graduate students who choose zoology as a major must have had at least two years of undergraduate work in zoology, except that under special circumstances advanced courses in closely allied subjects may be accepted in place of the fourth semester of zoology. Graduate students in other departments who choose zoology as a minor must have had at least one year of undergraduate work in zoology or ten hours of any laboratory science.

A reading knowledge of German and French is indispensable for graduate study in zoology, and familiarity with Latin and Greek is of great advantage.

Graduate students whose major is zoology are strongly advised to study at least one summer at a marine biological station. Every candidate for the Ph.D. degree in zoology is required to furnish evidence of having completed satisfactorily at least six weeks of work at an approved station.

Although no special degree in wildlife management is offered, students may prepare themselves for that type of work by selecting courses from the following list: Zoology 11, 17, 18, 19, 26, 31, 109, 110, 111, 118, 131, and research courses. Such students should choose their minors from botany, physiology, entomology, and bacteriology.

For a master's degree in the biological sciences, see page 297.

102. CLASSIFICATION, PHYLOGENY, AND EVOLUTION OF VERTEBRATES.—I, (1 unit).
103. CYTOLOGY.—I, (1 unit).
106. ADVANCED VERTEBRATE EMBRYOLOGY.—I, (1 unit). *Prerequisite:* Zoology 3 or equivalent.
107. EXPERIMENTAL VERTEBRATE EMBRYOLOGY.—II, (1 unit). *Prerequisite:* Zoology 3 or equivalent.
109. PHYSIOLOGICAL ECOLOGY.—II, ($\frac{1}{2}$ to 1 unit).
- [110. CLIMATIC ECOLOGY.—II, ($\frac{1}{2}$ to 1 unit).]
111. ADVANCED FIELD ECOLOGY.—II, ($\frac{1}{4}$ to 1 unit).
113. HISTORY OF ZOOLOGY.—The development of zoological science as a specialized field of human knowledge. I, (1 unit).
115. ADVANCED GENETICS.—I, (1 unit).
- [117. INVERTEBRATE TAXONOMY.—II, ($\frac{1}{2}$ to 1 unit).]
118. ADVANCED PROTOZOOLOGY.—II, ($\frac{1}{2}$ to 1 unit).
120. INDIVIDUAL RESEARCH.—S, I, and II, (1 to 2 units). Arrange. May be taken by students who can attend classes only on Saturdays. Work may be taken in the following fields:
- | | |
|---|------------------------------------|
| ANIMAL ECOLOGY, BEHAVIOR, AND
WILDLIFE MANAGEMENT. | MAMMALIAN TAXONOMY AND
ECOLOGY. |
| CHEMICAL EMBRYOLOGY. | ORNITHOLOGY. |
| GENETICS AND REGENERATION. | PHYSIOLOGICAL ZOOLOGY. |
| HELMINTHOLOGY AND PARASITOLOGY. | PHYSIOLOGY OF DEVELOPMENT. |
| HERPETOLOGICAL TAXONOMY AND
ECOLOGY. | PROTOZOOLOGY AND PARASITOLOGY. |
| HISTOLOGY AND CYTOLOGY. | VERTEBRATE EMBRYOLOGY. |
| INVERTEBRATE ZOOLOGY AND
PARASITOLOGY. | VERTEBRATE ZOOLOGY. |
- [131. HELMINTHOLOGY.—II, ($\frac{1}{2}$ to 1 unit).]

PHYSIOLOGY

Requirements for L.A.S. Students

Major: 20 hours in physiology, excluding Physiology 1, 1a, 3a, and 3b.

Minors: 20 hours in not more than two of the following: bacteriology, botany, chemistry, entomology, and zoology. At least eight hours must be taken in each subject, if two are chosen.

Courses for Undergraduates

NOTE: Division of General Studies 3 (General Biology) may be substituted for one semester of physiology in satisfying prerequisites.

1. MAMMALIAN PHYSIOLOGY.—A survey of the structure and function of the human body. Lectures and demonstrations. S, I, and II, (3). Credit is not given for Physiology 1 or 1a in addition to 3a. Seniors receive only two hours credit.
- 1a. MAMMALIAN PHYSIOLOGY.—With laboratory. S, I, and II, (5). Credit is not given for Physiology 1a or 1 in addition to 3a. Seniors receive only four hours credit.
- 1c. MAMMALIAN PHYSIOLOGY.—Half of a one-year Physiology-Psychology sequence dealing with an introductory study of the structure and function of the human body. This course also meets the general education requirements in the College of Liberal Arts and Sciences. I and II, (4). Credit is not given for Physiology 1c in addition to 1, 1a, or 3a.
- 3a-3b. PHYSIOLOGICAL ANATOMY.—For physical education students. Continuous through I and II, (5); credit toward graduation not allowed for either semester separately. Credit is not given for Physiology 3a-3b in addition to 1, 1a, or 1c. Seniors receive only four hours credit.
5. PHYSIOLOGY OF THE NERVOUS SYSTEM AND THE SPECIAL SENSES.—S and II, (3). *Prerequisite:* Three hours of physiology, or consent of instructor.
34. HUMAN ANATOMY AND PHYSIOLOGY.—A study of the essentials of anatomy and physiology with special reference to muscular and nervous system. For nurses and for students in the occupational therapy curriculum only. I and II, (5). *Prerequisite:* Sophomore standing; Zoology I, or consent of instructor.
35. KINESIOLOGY.—A study of the mechanics and motion of the human body emphasizing abnormal conditions and with special relation to re-education of muscle groups. For students in the occupational therapy curriculum only. I and II, (3). *Prerequisite:* Physiology 34.

Courses for Advanced Undergraduates

8. INDIVIDUAL TOPICS.—I and II, (3 to 5). *Prerequisite:* Senior standing; 15 hours of physiology.

Courses for Advanced Undergraduates and Graduates

6. ADVANCED MAMMALIAN PHYSIOLOGY.—Muscle, nervous system, circulation, and blood. S and I, (5). *Prerequisite:* Twenty hours of chemistry or biology, or consent of instructor.
7. ADVANCED MAMMALIAN PHYSIOLOGY.—Respiration, digestion, excretion, endocrine glands, and temperature regulation. II, (5). *Prerequisite:* Twenty hours of chemistry, or consent of instructor.
41. COMPARATIVE PHYSIOLOGY.—I, (5). *Prerequisite:* Senior standing; three semesters of zoology or two of zoology and one of physiology. Elementary physiology recommended.
42. CELLULAR PHYSIOLOGY.—II, (5). *Prerequisite:* One year of zoology; one year of chemistry; senior standing.
43. ENDOCRINOLOGY.—The glands of internal secretion with special reference to the vertebrates. II, (3). *Prerequisite:* Zoology 1 and 2; one year of chemistry, or consent of instructor; senior standing.

Courses for Graduates

NOTE: Graduate students who choose physiology as a major must have at least two years of undergraduate work in physiology or physiological zoology, or three semesters in these studies in addition to biochemistry. Graduate students in other departments

who choose physiology as a minor must have had at least one year of physiology or its equivalent or an undergraduate major in either chemistry or physics. A reading knowledge of German and French is required.

For a master's degree in the biological sciences, see page 297.

101. JOURNAL CLUB.—Review of literature. Continuous through I and II, ($\frac{1}{4}$ unit).
102. RESEARCH.—S, I, and II, (1 to 2 units).
103. EXPERIMENTAL PHYSIOLOGY.—Respiration, circulation, digestion, metabolism, excretion, secretion, glands of internal secretion, nervous system. I and II, ($\frac{1}{2}$ to 1 unit).
142. ADVANCED GENERAL PHYSIOLOGY SEMINAR.—Lectures, reports, discussions. I and II, ($\frac{1}{2}$ unit). *Prerequisite:* Physiology 42, or equivalent.
- [144. PHYSIOLOGY OF REPRODUCTION IN ANIMALS.—II, ($\frac{1}{2}$ unit).]

THE UNDERGRADUATE DIVISION IN CHICAGO

THE CHICAGO UNDERGRADUATE DIVISION OF THE UNIVERSITY of Illinois was established in 1946 as a part of the program of the State to meet its share of the national emergency in higher education resulting from the increased demand, primarily by veterans, for instruction at the university level. The Division is located on Navy Pier, at the foot of Grand Avenue, near the heart of Chicago's Loop. It is a unique campus extending five-eighths of a mile into Lake Michigan. The north half of the Pier houses administrative offices and teaching facilities for four thousand students.

A city amusement and marine shipping center converted into a Naval Training Station during the wartime emergency, Navy Pier has been remodeled to provide fifty-two classrooms, four large lecture halls, and twenty-two laboratories, as well as cafeteria, lounge, and library facilities. An auditorium is available for student social events and extracurricular activities. The physical education, intercollegiate athletic, and intramural sports programs use the Navy Pier Gymnasium, formerly the Drill Hall. The University leases one-half million square feet, nearly half of the Pier.

The Library, a branch of the main Library on the Urbana campus, has approximately 10,000 volumes. Special emphasis is placed on general reference service, in addition to the circulation and reserve book services. A complete dictionary card catalog is maintained, and several periodical indexing services are available. Over 200 magazines and journals are received. The Library supplies bibliographic materials and services for the courses offered and also many items of broad cultural and recreational interest.

In order to promote a well-rounded college life for students at Navy Pier, the Division has established a program of student welfare. This program, which is under the guidance of the Dean of Students, includes counseling and guidance, health, employment, recreational and social activities, and student organizations.

For *admission*, see page 99; for *fees*, see page 118; for general University requirements for *graduation*, see page 114; for *honors*, see page 116; for *loan funds*, see page 133; for *prizes and awards*, see page 136; for *scholarships*, see page 130; for *student welfare*, see page 123.

COLLEGES

Instruction at the freshman and sophomore levels is offered in the College of Commerce and Business Administration, the College of Engineering, and the College of Liberal Arts and Sciences. In addition, architecture and architectural engineering curricula are offered in the College of Fine and Applied Arts. Curricula and courses are identical with those made available in similar fields of undergraduate work on the Urbana campus. Students transferring for advanced work on the main campus receive full credit for their work and have priority over students transferring from other universities.

Suitable adjustments will be made in the academic program to provide facilities of a semi-professional and technical nature for those students who are qualified to succeed in a terminal program rather than one designed for further studies at the college level.

Every effort is made to integrate the instructional program with the cultural resources of the City of Chicago so as to provide a superior educational unit.

THE COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION

The College of Commerce and Business Administration is organized to offer the first two years of study corresponding with that offered in the Lower Division at Urbana (page 162). This two-year program may serve two groups of students. For those who plan only two years of study, the program offers basic general material which will be of the most value in a limited course of study, as well as study in commerce subjects. For others, it serves as a foundation for subsequent concentration in specific fields of Commerce, for entrance into the College of Education, the School of Journalism, or later study in the College of Law.

THE COLLEGE OF ENGINEERING

The College of Engineering is meeting the heavy post-war demand for technical education by offering the first two years of training in the following fields of engineering: aeronautical, civil, electrical, mechanical, metallurgical, mining, and engineering physics. These curricula are outlined on pages 181-194.

The first two years of the curricula in architecture and architectural engineering also are offered under the College of Engineering. A general understanding of the profession of architecture from the standpoint of design, safety, and economy, and of the architect's duties, is emphasized in these curricula. Outlines of these curricula are shown on pages 198 and 199.

THE COLLEGE OF LIBERAL ARTS AND SCIENCES

The College of Liberal Arts and Sciences offers the first two years in the general liberal arts curriculum. This curriculum, outlined on page 223, gives the student a well-balanced intellectual development and provides the resources for a liberal education. Emphasis is placed on subjects leading to a general knowledge and interpretation of the cultures of both the past and present.

The first two years of undergraduate work are offered in the following fields: chemical engineering, chemistry, pre-dentistry, pre-journalism, pre-law, pre-medicine, and teacher training.

The curricula in chemical engineering and chemistry afford more specialized training than is required of students who make chemistry their major subject in the general curriculum. Outlines of these curricula are given on pages 236-240.

The pre-medical curriculum (page 240) includes the first two years of the courses required for admission to the College of Medicine. The work covered also enables students to meet the requirements for admission to the College of Dentistry.

Of the curricula in teacher-training offered by the College of Liberal Arts and Sciences, preliminary work in twelve curricula is offered at the Chicago Undergraduate Division, as follows: Biology, Chemistry, English, French, Geography, German, Mathematics, Mathematics and Physical Sciences, Physics, Social Studies, Spanish, and Speech. These curricula are outlined on pages 242-265.

THE DIVISION OF SPECIAL SERVICES FOR WAR VETERANS

The Division of Special Services for War Veterans is an agency established to assist the veteran in his return to civilian life. It offers its help both to those who are now veterans and to those who are still in the services. The Division supplies information about the various services of the University and gives advice on matters of educational aids and adjustments. It assists the veteran in

securing those benefits to which he is entitled by directing him to the sources of such benefits and assisting him in finding the proper procedure for obtaining them with the least delay.

The Division assists the veteran in finding in the curricula now offered by the schools and colleges of the University the program which he needs and wants, and in obtaining such needed or desirable revisions of these existing programs as can be agreed to by the college administering the program. In the event the veteran's needs can not be met by the established curricula, and the veteran requests a special program, the Division will assist in arranging an educational program especially planned to meet the individual needs and interests of the veteran. All such programs must be equivalent in quality and quantity to the traditional curricula. After successfully completing such a program at Navy Pier, the veteran may continue the program at Urbana for a degree of Bachelor of Science in the Division of Special Services for War Veterans (see page 278).

COURSES OF INSTRUCTION

NOTE: The following is a list of courses offered in the Chicago Undergraduate Division during the academic year 1946-1947. The courses are arranged in alphabetic order of subjects, and in numerical order under each subject. Special requirements for admission to certain courses are introduced by the word *prerequisite*. The Roman numerals I and II indicate the first and second semesters, and the Arabic numerals in parenthesis indicate the credit value in semester hours. The courses closely parallel those given at Urbana, and detailed descriptions are given in that section of the Catalog.

ACCOUNTANCY

- 1a. PRINCIPLES OF ACCOUNTING.—Students who present one unit of bookkeeping for entrance will not be allowed credit for Accountancy 1a and should register in Accountancy 1e. I and II, (3).
- 1b. ACCOUNTING PROCEDURE.—I and II, (3). *Prerequisite*: Accountancy 1a or 1e.
- 1e. PRINCIPLES OF ACCOUNTING.—Similar to Accountancy 1a, for those who present one unit of entrance credit in bookkeeping. Students who have failed in Accountancy 1a are permitted to register in Accountancy 1e and receive credit as in Accountancy 1a if their final grade is "C" or above. I and II, (2). *Prerequisite*: One unit of entrance credit in bookkeeping.
- 2a. ELEMENTARY COST ACCOUNTING.—I and II, (3). *Prerequisite*: Accountancy 1b; registration or credit in Economics I or 2.
- 2b. INTERMEDIATE ACCOUNTING.—I and II, (3). *Prerequisite*: Accountancy 2a.

ARCHITECTURE

13. ARCHITECTURE AND CIVILIZATION OF THE NEAR ORIENT.—I and II, (2). *Prerequisite*: Architecture 31 or 32, or sophomore standing.
14. ARCHITECTURE AND CIVILIZATION OF GREECE AND ROME.—I and II, (2). *Prerequisite*: Architecture 13.
- 31-32. ARCHITECTURAL DESIGN.—I and II, (3).
- 33-34. ARCHITECTURAL DESIGN.—I and II, (3). *Prerequisite*: Architecture 32.
43. MATERIALS AND METHODS OF CONSTRUCTION.—I and II, (3). *Prerequisite*: Architecture 32.
44. MATERIALS AND METHODS OF CONSTRUCTION.—I and II, (3). *Prerequisite*: Architecture 43 or consent of instructor.

ART

- 21a-21b. FREEHAND DRAWING.—Primarily for students in architecture and landscape architecture. I and II, (2).
- 22a-22b. FREEHAND DRAWING (CONTINUED).—Primarily for students in architecture and landscape architecture. I and II, (2). *Prerequisite*: Art 21b.

BACTERIOLOGY

- 5a. INTRODUCTORY BACTERIOLOGY.—Designed to accompany Bacteriology 5b, but may be elected without it. I and II, (3). *Prerequisite:* Sophomore standing or consent of instructor.
- 5b. INTRODUCTORY BACTERIOLOGY LABORATORY.—Designed to accompany Bacteriology 5a. I and II, (2). *Prerequisite:* Bacteriology 5a, or concurrent registration therein.

BOTANY

- 1a. INTRODUCTORY BOTANY.—Designed to accompany Botany 1b, but may be elected without it. I and II, (3).
- 1b. INTRODUCTORY BOTANY LABORATORY.—I and II, (2). *Prerequisite:* Botany 1a, or concurrent registration therein.
16. ECONOMIC BOTANY.—I and II, (3). *Prerequisite:* Botany 1a or 1b.

CHEMISTRY

1. INORGANIC CHEMISTRY.—For students who have no entrance credit for high school chemistry. I and II, (5). *Prerequisite:* One unit of entrance credit in physics, or 2½ units of entrance credit in mathematics, or credit in Mathematics 2 or 3.
2. INORGANIC CHEMISTRY.—For all students who have had one year of high school chemistry. Students who have not used their high school chemistry for entrance may receive five hours credit for Chemistry 2 if they complete the course with a grade of "C" or higher. Students who have failed in Chemistry 1 are permitted to register for Chemistry 2 and will receive five hours credit if their final grade is "C" or higher. I and II, (3). *Prerequisite:* One unit of entrance credit in chemistry. Students whose preparation proves to be inadequate for continuing this course will be required to change their registration to Chemistry 1 or 3.
3. INORGANIC CHEMISTRY.—For engineering students who have had no chemistry. I and II, (4). Students who have received credit in high school chemistry are given only three hours credit.
4. CHEMISTRY OF THE METALLIC ELEMENTS.—Limited to students in the engineering curriculum. I and II, (4). Credit in Chemistry 4 will not be granted to students who have received credit in Chemistry 5 or Chemistry 6. *Prerequisite:* Chemistry 1, 2, or 3.
5. INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS.—For students who are not eligible for Chemistry 4 or 6. Credit in Chemistry 5 will not be granted to students who have received credit in Chemistry 4 or Chemistry 6. I and II, (5). *Prerequisite:* Chemistry 1, 2, or 3.
6. INORGANIC CHEMISTRY.—For students in the curriculum of chemistry, and chemistry majors who are not pre-medics. Credit in Chemistry 6 will not be granted to students who have received credit in Chemistry 4 or Chemistry 5. I and II, (5). *Prerequisite:* Chemistry 1, 2, or 3.
10. QUALITATIVE ANALYSIS.—Required of students whose major is chemistry and those registered in the curriculum of chemistry or chemical engineering. I and II, (5). *Prerequisite:* Chemistry 6.
22. ELEMENTARY QUANTITATIVE ANALYSIS.—For students in pre-medical courses and all others who have not followed the sequence Chemistry 1, 2 or 3, 6, and 10. I and II, (5). *Prerequisite:* Chemistry 4 or 5.
24. QUANTITATIVE ANALYSIS.—I, (5). *Prerequisite:* Chemistry 10.
33. ELEMENTARY ORGANIC CHEMISTRY.—For pre-medical students. I and II, (5). *Prerequisite:* Chemistry 5 or 10.
34. ORGANIC CHEMISTRY.—For students whose major is chemistry or for those registered in the curriculum of chemistry or chemical engineering. I, (5). *Prerequisite:* Chemistry 6, 10, and 24.

CIVIL ENGINEERING

1. PLANE SURVEYING.—At summer camp only, (3). *Prerequisite:* General Engineering Drawing 1; Mathematics 4.
2. TOPOGRAPHIC SURVEYING.—At summer camp only, (3). *Prerequisite:* Civil Engineering 1.

- 3a. ROUTE SURVEYING.—I and II, (3). *Prerequisite:* Civil Engineering 2, 15, or 18.
 35. PLAIN CONCRETE.—I and II, (2). *Prerequisite:* Sophomore standing in engineering, architecture, or landscape architecture.
 36. CONSTRUCTION MATERIALS.—I and II, (1). *Prerequisite:* Sophomore standing.
 60. BRIDGE AND BUILDING CONSTRUCTION.—I and II, (3). *Prerequisite:* Sophomore standing.

ECONOMICS

NOTE: Economics I is the fundamental course in economics and is prerequisite for most of the advanced courses. Students expecting to do advanced work in economics should take Economics I in their sophomore year.

Economics 2, though open to all students who have had one year of University work, is primarily for students in the College of Engineering and in chemistry and other sciences. It may not be used as a prerequisite for advanced courses in economics except as indicated.

1. PRINCIPLES OF ECONOMICS.—I and II, (5). *Prerequisite:* One year of University work.
 2. ELEMENTS OF ECONOMICS.—For non-commerce students. I and II, (3). *Prerequisite:* One year of University work.
 22. ECONOMIC HISTORY OF THE UNITED STATES.—Open to freshmen only. I and II, (3).
 27. INTRODUCTION TO BUSINESS.—Open to freshmen who have had one semester of University work. I and II, (3).
 70. ELEMENTS OF STATISTICS.—I and II, (3). *Prerequisite:* Economics I or 2; sophomore standing.

ELECTRICAL ENGINEERING

- 20a. ILLUMINATING ENGINEERING AND SECONDARY POWER.—Open only to students in electrical engineering. I and II, (3). *Prerequisite:* Sophomore standing.
 21. INTRODUCTION TO ELECTRODYNAMICS.—I and II, (3). *Prerequisite:* Physics 1a, 3a; Mathematics 7; registration in Physics 1b, 3b, Mathematics 9.

ENGLISH

- 10a. TYPES OF POETRY.—Intended primarily for those who expect to do considerable work in literature, in English, or in any other language. Credit is not given for English 11a or 11b in addition to English 10a, or for any of these courses in addition to English 20a and 20b. I and II, (3). *Prerequisite:* Minimum entrance requirements in English.
 10b. STUDY OF DRAMA.—See note under English 10a. I and II, (3). *Prerequisite:* English 10a or 11a.
 11a. CHRONOLOGICAL STUDY OF MASTERPIECES.—See note under English 10a. I and II, (3). *Prerequisite:* Minimum entrance requirement in English.
 11b. CHRONOLOGICAL STUDY OF MASTERPIECES.—See note under English 10a. I and II, (3). *Prerequisite:* English 11a.
 12. AMERICAN LITERATURE.—I and II, (2). *Prerequisite:* Sophomore standing or exemption from Rhetoric 2.
 13. AMERICAN LITERATURE.—II, (2). *Prerequisite:* Sophomore standing, or exemption from Rhetoric 2.
 20a. CHIEF ENGLISH WRITERS OF THE NINETEENTH CENTURY.—For students in professional and technical courses. Credit is not given for English 20a in addition to English 10a-10b or 11a-11b. I and II, (4). *Prerequisite:* Sophomore standing.
 20b. CHIEF ENGLISH WRITERS BEFORE 1800.—Credit is not given for English 20b in addition to English 10a-10b or 11a-11b. II, (4). *Prerequisite:* English 20a.
 23. INTRODUCTION TO SHAKESPEARE.—I and II, (3). *Prerequisite:* Sophomore standing or exemption from Rhetoric 2.

FRENCH

- 1a. ELEMENTARY FRENCH.—I and II, (4). No credit toward graduation is given for French 1a without French 1b.
 1b. ELEMENTARY FRENCH (CONTINUED).—I and II (4). *Prerequisite:* French 1a, or one year of high school French.
 2a. MODERN FRENCH.—I and II, (4). *Prerequisite:* French 1b, or two years of high school French.

- 2b. MODERN FRENCH (CONTINUED).—I and II, (4). *Prerequisite:* French 2a, or three years of high school French.
- 3a. INTRODUCTION TO FRENCH LITERATURE.—I, (3). *Prerequisite:* French 2b, or four years of high school French.

GENERAL ENGINEERING DRAWING

1. ELEMENTS OF DRAWING.—I and II, (4). *Prerequisite:* Plane geometry, 1 unit.
2. DESCRIPTIVE GEOMETRY.—I and II, (4). *Prerequisite:* Plane and solid geometry, 1½ units.
3. AIRCRAFT DRAFTING AND LOFTING.—I and II, (2). *Prerequisite:* General Engineering Drawing 1 and 2.
6. ELEMENTS OF DRAWING.—For students in chemical engineering. I and II, (3). *Prerequisite:* Plane geometry, 1 unit.
7. ARCHITECTURAL PROJECTIONS.—I and II, (2). *Prerequisite:* Plane and solid geometry, 1½ units.
8. ARCHITECTURAL PROJECTIONS (CONTINUED).—I and II, (2). *Prerequisite:* General Engineering Drawing 7.
10. PICTORIAL DRAWING.—I and II, (3). *Prerequisite:* General Engineering Drawing 2.
12. GRAPHICAL CALCULATIONS.—For students in engineering; accepted as an approved elective in all curricula in the College of Engineering. I and II, (1). *Prerequisite:* General Engineering Drawing 1; Mathematics 6a.

GEOGRAPHY

1. ELEMENTS OF GEOGRAPHY.—I and II, (5).
2. ECONOMIC GEOGRAPHY.—I and II, (5). *Prerequisite:* Geography 1.
22. GENERAL GEOGRAPHY.—For commerce students only. Not open to students who have credit in Geography 1 or 2. I and II, (5).

GEOLOGY

1. GENERAL GEOLOGY.—I and II, (3).
- 1a. GENERAL GEOLOGY LABORATORY.—I and II, (2). *Prerequisite:* Geology I or concurrent registration therein.
- 2a. HISTORICAL GEOLOGY.—II, (4). *Prerequisite:* Geology 1.
43. ENGINEERING GEOLOGY.—I and II, (3). *Prerequisite:* Sophomore standing in the College of Engineering.

GERMAN

- 1a. ELEMENTARY COURSE.—Not open to students who have had high school credit in this language. No credit toward graduation is given for German 1a without German 1b. I and II, (4).
- 1b. ELEMENTARY COURSE (CONTINUED).—I and II, (4). *Prerequisite:* German 1a, or one year of high school German, or equivalent.
- 2a. INTERMEDIATE COURSE.—I and II, (4). *Prerequisite:* German 1b, or two years of high school German, or equivalent.
- 2b. INTERMEDIATE COURSE (CONTINUED).—I and II, (4). *Prerequisite:* German 2a, or three years of high school German, or equivalent.

HISTORY

- 1a. CONTINENTAL EUROPEAN HISTORY TO 1815.—I and II, (4).
- 1b. CONTINENTAL EUROPEAN HISTORY, 1815-1947.—II, (4).
- 2a. HISTORY OF ENGLAND TO 1688.—I and II, (3).
- 2b. HISTORY OF ENGLAND, 1688-1947.—II, (3).
- 3a. HISTORY OF THE UNITED STATES TO 1828.—I, (3). *Prerequisite:* Sophomore standing.
- 3b. HISTORY OF THE UNITED STATES, 1828-1947.—II, (3). *Prerequisite:* Sophomore standing.
- 5a-5b. THE ANCIENT WORLD.—I and II, (3). *Prerequisite:* Sophomore standing.

MATHEMATICS

- R. ELEMENTARY ALGEBRA FOR VETERANS.—For veterans who are not ready for Mathematics 3. Registration follows a placement examination. I and II, (no credit).
- G. PLANE GEOMETRY FOR VETERANS.—Students may meet entrance requirements for the colleges of Commerce or Engineering through this course. I and II, (no credit).
1. SOLID GEOMETRY.—Satisfies deficiency in solid geometry for engineering students; all other students receive full credit. I and II, (3). *Prerequisite:* Entrance algebra, I unit; plane geometry, I unit.
2. COLLEGE ALGEBRA.—I and II, (3). *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units; plane geometry, I unit.
3. ALGEBRA.—Students having $1\frac{1}{2}$ entrance units in algebra receive only three hours credit. I and II, (5). *Prerequisite:* Entrance algebra, I unit; plane geometry, I unit.
4. PLANE TRIGONOMETRY.—I and II, (2). *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units, or concurrent registration in Mathematics 3.
- 4a. ELEMENTS OF ALGEBRA AND TRIGONOMETRY.—For pre-medical students who have entered with only one unit of high school algebra and who need credit in trigonometry as a prerequisite to physics. This course does not serve as a prerequisite for Mathematics 6a. Pre-medical students who enter with $1\frac{1}{2}$ units of algebra must take Mathematics 4 above. I and II, (3). *Prerequisite:* High school algebra, I unit.
5. ADVANCED TRIGONOMETRY.—Intended for students having entrance credit in trigonometry. I and II, (2). *Prerequisite:* Entrance algebra, $1\frac{1}{2}$ units; plane geometry, I unit; solid geometry, $\frac{1}{2}$ unit; Mathematics 4 or entrance trigonometry ($\frac{1}{2}$ unit) provided the student can pass placement test to be given in the first two class meetings.
- 6a. ANALYTIC GEOMETRY.—I and II, (4). *Prerequisite:* Mathematics 2 or 3 and 4 or 5.
7. CALCULUS.—First course for students of mathematics and engineering. I and II, (5). *Prerequisite:* Mathematics 6a.
9. CALCULUS.—Second course for students of mathematics and engineering. I and II, (3). *Prerequisite:* Mathematics 7.

MECHANICAL ENGINEERING

- 31a. MECHANISM.—To be taken with Physics 1a. I and II, (2).
81. MACHINE TOOL OPERATION.—For aeronautics students only. I and II, (4). *Prerequisite:* Sophomore standing.
82. MACHINE TOOL PRODUCTION METHODS.—I and II, (2). *Prerequisite:* Sophomore standing; General Engineering Drawing I.
85. PATTERN AND FOUNDRY LABORATORY.—I and II, (3). *Prerequisite:* Sophomore standing; General Engineering Drawing I.
87. MACHINE TOOL LABORATORY.—I and II, (3). *Prerequisite:* Sophomore standing.

PHILOSOPHY

1. INTRODUCTION TO PHILOSOPHY.—I and II, (3). *Prerequisite:* Sophomore standing.
2. LOGIC.—I and II, (3). *Prerequisite:* Sophomore standing.

PHYSICAL EDUCATION FOR MEN

20. ADAPTED SPORTS.—Open only to students who are assigned by the Health Service. I and II, (1).
22. BADMINTON AND HANDBALL.—I and II, (1).
23. VOLLEYBALL.—I and II, (1).
25. INDIVIDUAL TUMBLING.—I and II, (1).
26. DOUBLE TUMBLING STUNTS.—I and II, (1).
27. APPARATUS STUNTS.—I and II, (1).
28. BOXING.—I and II, (1).
29. WRESTLING.—I and II, (1).
53. WEIGHT LIFTING.—I and II, (1).
60. BASIC PHYSICAL FITNESS.—I and II, (1).

PHYSICAL EDUCATION FOR WOMEN

51. ELEMENTARY RHYTHMS.—I and II, (1).
52. INTERMEDIATE RHYTHMS.—I and II, (1).
56. PRESCRIBED ACTIVITIES.—Open only to students assigned by the Health Service. I and II, (1).
58. TEAM SPORTS.—First semester, volleyball and basketball; second semester, volleyball and tennis. I and II, (1).
60. INDIVIDUAL SPORTS.—Badminton, golf. I and II, (1).
72. BASIC PHYSICAL FITNESS.—I and II, (1).

PHYSICS

- 1a. GENERAL PHYSICS (MECHANICS, SOUND, AND HEAT).—For students in engineering, mathematics, physics, and chemistry. I and II, (4). *Prerequisite:* Mathematics 2 and 4; concurrent registration in Physics 3a.
- 1b. GENERAL PHYSICS (ELECTRICITY, MAGNETISM, AND LIGHT).—I and II, (4). *Prerequisite:* Physics 1a; registration in Physics 3b.
- 3a. GENERAL PHYSICS LABORATORY.—To accompany Physics 1a. I and II, (1). *Prerequisite:* Physics 1a or registration therein.
- 3b. GENERAL PHYSICS LABORATORY.—To accompany Physics 1b. I and II, (1). *Prerequisite:* Physics 1b, or registration therein.

PHYSIOLOGY

1. MAMMALIAN PHYSIOLOGY.—Without laboratory. I and II, (3).

POLITICAL SCIENCE

- 1a. AMERICAN GOVERNMENT: ORGANIZATION AND POWERS.—I and II, (3). *Prerequisite:* Sophomore standing.
- 1b. AMERICAN GOVERNMENT: FUNCTIONS.—II, (3). *Prerequisite:* Sophomore standing; Political Science 1a or consent of the department.
16. GOVERNMENT IN ILLINOIS.—II, (2). Only one hour credit for this course is allowed to students who also take Political Science 1a. *Prerequisite:* Sophomore standing.

PSYCHOLOGY

1. INTRODUCTION TO PSYCHOLOGY.—I and II, (4). *Prerequisite:* Sophomore standing.
2. FIELDS OF PSYCHOLOGY.—I, (4). *Prerequisite:* Psychology 1.
21. CHARACTER AND PERSONALITY.—II, (3). *Prerequisite:* Psychology 1.

RHETORIC

0. RHETORIC AND COMPOSITION.—Open to students who fail the placement test for admission to Rhetoric 1. Students passing the course will be admitted to Rhetoric 1 without further examination. I and II, (no credit).
1. RHETORIC AND COMPOSITION.—I and II, (3). *Prerequisite:* A passing grade on the Rhetoric 1 placement examination or a passing grade in Rhetoric 0. Rhetoric 1 and 2 are not counted toward a major in English.
2. RHETORIC AND COMPOSITION.—See note under Rhetoric 1. I and II, (3). *Prerequisite:* Rhetoric 1 or exemption from Rhetoric 1.
3. EXPOSITION.—I and II, (3). *Prerequisite:* Rhetoric 1 and 2; sophomore standing.
4. NARRATION AND DESCRIPTION.—I and II, (3). *Prerequisite:* Rhetoric 1 and 2; sophomore standing.
5. RHETORIC AND COMPOSITION.—Required of students who fail the qualifying examination. I, (3).
10. BUSINESS LETTER WRITING.—I and II, (2). This course is not counted toward a major in English. *Prerequisite:* Rhetoric 1 and 2.

SOCIOLOGY

1. PRINCIPLES OF SOCIOLOGY.—I and II, (3). *Prerequisite:* Sophomore standing.
2. SOCIAL FACTORS IN PERSONALITY.—I and II, (3). *Prerequisite:* Sociology 1.

SPANISH

- 1a. ELEMENTARY SPANISH.—For students who have had no work in Spanish. No credit for graduation is given for Spanish 1a without Spanish 1b. I and II, (4).
- 1b. ELEMENTARY SPANISH (CONTINUED).—I and II, (4). *Prerequisite:* Spanish 1a, or one year of high school Spanish.
- 2a. MODERN SPANISH.—I and II, (4). *Prerequisite:* Spanish 1b, or two years of high school Spanish.
- 2b. MODERN SPANISH (CONTINUED).—I and II, (4). *Prerequisite:* Spanish 2a, or three years of high school Spanish.
- 3a. INTRODUCTION TO SPANISH LITERATURE.—I and II, (3). *Prerequisite:* Spanish 2b, or four years of high school Spanish.
- 3b. INTRODUCTION TO SPANISH LITERATURE (CONTINUED).—II, (3). *Prerequisite:* Spanish 3a.

SPEECH

1. PRINCIPLES OF EFFECTIVE SPEAKING.—Open to freshmen. I and II, (3).
2. BUSINESS AND PROFESSIONAL SPEAKING.—I and II, (2). *Prerequisite:* Speech 1; sophomore standing.
10. ORAL INTERPRETATION OF LITERATURE.—Open to freshmen. I and II, (2).

THEORETICAL AND APPLIED MECHANICS

1. ANALYTICAL MECHANICS (STATICS).—I and II, (2). *Prerequisite:* Mathematics 7; concurrent registration in Mathematics 9.
2. ANALYTICAL MECHANICS (DYNAMICS).—I and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 1.
17. ELEMENTS OF MECHANICS (STATICS) AND STRENGTH OF MATERIALS.—For architects and others who have not taken the calculus. I and II, (3). *Prerequisite:* Mathematics 6a.
18. ELEMENTS OF MECHANICS (STATICS) AND STRENGTH OF MATERIALS (CONTINUED).—I and II, (3). *Prerequisite:* Theoretical and Applied Mechanics 17.

ZOOLOGY

1. GENERAL ZOOLOGY.—I and II, (5).
2. COMPARATIVE VERTEBRATE ANATOMY.—I and II, (5). *Prerequisite:* Zoology 1. Grade of "C" in Zoology 1 is required of freshmen.

THE UNDERGRADUATE DIVISION AT GALESBURG

THE GALESBURG UNDERGRADUATE DIVISION OF THE UNIVERSITY of Illinois was established in 1946 to meet the unprecedented demand for college instruction, particularly by veterans. The Division is located at Galesburg, a community of 32,000 people in the northwestern section of the state. In geographical distance, it is 183 miles southwest of Chicago, 45 miles northwest of Peoria, and 108 miles northwest of the state capital of Springfield. The main lines of the Burlington and Santa Fe railroads run through the city. The campus is one and one-half miles north of the downtown business area of Galesburg and is served directly by the city bus lines.

The Division occupies the buildings of the former Mayo General Hospital. The hospital, constructed for use by the United States Army, was declared surplus by the Army and temporarily assigned to the University. The 117 permanent brick buildings, located on a 156-acre tract, furnish complete administrative, classroom, library, and laboratory facilities for two thousand students.

Unique in construction, the campus has more than a mile and one-half of corridors connecting the individual units. The buildings, though nearly all connected, are separate, well lighted, and well ventilated. In addition to forty-four classrooms, library, and laboratories, all necessary living utilities are included at the Division. Forty-five buildings are used for housing—twenty-two dormitory units for men students, twelve buildings for faculty and staff, nine buildings for married veterans, and two buildings for women students. Adequate study hall facilities and lounges are in each dormitory unit. Residence counselors for both men and women are available in each section of the student housing units to provide guidance and assistance.

Other buildings are used for food service, hospital, chapel, bookstore, post office, theater, laundry, dry cleaning plant, and barbershop. There is a large gymnasium and swimming pool. Adjacent outside athletic grounds include football fields, baseball diamonds, archery range, tennis courts, soccer field, and a five-hole golf course. All facilities are available to students, faculty, and administrative personnel at cost and are self-supporting.

The Library, with space for approximately 10,000 volumes, consists of a reference and periodical reading room and a combination circulation, reserve, general reading, and browsing room. The reference and periodical room houses a non-circulating reference collection and more than 175 current periodicals. Reference works consist of the standard dictionaries, atlases, encyclopedias, and other specialized aids.

Recognizing the responsibility of the University for the life of the student outside the classroom, the Division provides for the welfare of the student in every way possible—counseling and guidance, health, housing, employment, recreational and social activities, and student organizations. This program operates under the guidance of a Director of Student Welfare.

For *admission*, see page 99; for *fees*, see page 118; for general University requirements for *graduation*, see page 114; for *honors*, see page 116; for *loan funds*, see page 133; for *prizes and awards*, see page 136; for *scholarships*, see page 130; for *student welfare*, see page 123.

COLLEGES

Instruction at the freshman and sophomore levels is offered in the College of Commerce and Business Administration, the College of Engineering, and the College of Liberal Arts and Sciences. Curricula and courses are identical with those made available in similar fields of undergraduate work on the Urbana campus. Students transferring from the Galesburg Undergraduate Division for advanced work on the main campus receive full credit for their work and have priority over students transferring from other universities.

THE COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION

The College of Commerce and Business Administration offers the first two years of study corresponding with that offered in the Lower Division at Urbana (page 162). The program is organized about a nucleus of courses in accountancy and economics, mathematics and science, language and literature, rhetoric and speech. Students who complete the two-year program with satisfactory scholastic record are qualified for admission to the Upper Division or for admission to the College of Education, the School of Journalism, or the College of Law. The program also affords a well-balanced combination of studies to those who are in college for only two years of preparation for work in the business world.

THE COLLEGE OF ENGINEERING

The College of Engineering offers instruction for freshmen and sophomores in the following fields of engineering: aeronautical, civil, electrical, mechanical, metallurgical, mining, and engineering physics. The curricula, though widely varied and specialized, are built on a general foundation of scientific facts and theories applicable to many different fields. Work in the classrooms, laboratories, shops, and drafting rooms is correlated with practical problems.

The curricula in engineering are outlined on pages 181-194.

THE COLLEGE OF LIBERAL ARTS AND SCIENCES

The College of Liberal Arts and Sciences offers the first two years in a general curriculum for those whose primary aim is a liberal education. This curriculum requires a nucleus of courses in literature and philosophy, social studies and natural sciences, a reading knowledge of at least one foreign language, and a certain amount of concentration in the subjects chosen as majors and minors.

Instruction at the freshman and sophomore level is offered in the following professional fields: chemical engineering, chemistry, pre-dentistry, pre-journalism, pre-law, pre-medicine, and teacher-training.

The curricula in chemical engineering and chemistry afford more specialized training than is required of students who make chemistry their major subject in the general curriculum.

The pre-medical curriculum includes the first two years of the courses required for admission to the College of Medicine. The work covered also enables students to meet the requirements for admission to the College of Dentistry.

The curricula in this college are outlined on pages 232-265.

THE DIVISION OF SPECIAL SERVICES FOR WAR VETERANS

The Division of Special Services for War Veterans is an agency through which the University assists the veteran in his return to civilian life. It supplies information to the veteran on the various services of the University, helps him to

determine his educational aims, aids him in making educational adjustments, and guides him in his search for the curriculum which will best satisfy his needs. For the veteran whose special needs can not be satisfied by existing curricula, the Division will arrange and administer educational programs equivalent in quality and quantity to the traditional curricula. After completing such a program at Galesburg, the veteran may continue the program at Urbana for a degree of Bachelor of Science in the Division of Special Services for War Veterans (page 278).

COURSES OF INSTRUCTION

NOTE: The following is a list of courses offered in the Galesburg Undergraduate Division during the academic year 1946-1947. The courses are arranged in alphabetic order of subjects, and in numerical order under each subject. Special requirements for admission to certain courses are introduced by the word *prerequisite*. The Roman numerals I and II indicate the first and second semesters, and the Arabic numerals in parenthesis indicate the credit value in semester hours. The courses closely parallel those given at Urbana, and detailed descriptions are given in that section of the Catalog.

ACCOUNTANCY

- 1a. PRINCIPLES OF ACCOUNTING.—Students who present one unit of bookkeeping for entrance will not be allowed credit for Accountancy 1a and should register in Accountancy 1e. I and II, (3).
- 1b. ACCOUNTING PROCEDURE.—I and II, (3). *Prerequisite*: Accountancy 1a or 1e.
- 1e. PRINCIPLES OF ACCOUNTING.—Similar to Accountancy 1a, for those who present one unit of entrance credit in bookkeeping. Students who have failed in Accountancy 1a are permitted to register in Accountancy 1e and receive credit as in Accountancy 1a if their final grade is "C" or above. I and II, (2). *Prerequisite*: One unit of entrance credit in bookkeeping.
- 2a. ELEMENTARY COST ACCOUNTING.—II, (3). *Prerequisite*: Accountancy 1b; registration or credit in Economics 1 or 2.

BOTANY

- 1a. INTRODUCTORY BOTANY.—Designed to accompany Botany 1b, but may be elected without it. I and II, (3).
- 1b. INTRODUCTORY BOTANY LABORATORY.—I and II, (2). *Prerequisite*: Botany 1a, or concurrent registration therein.

CHEMISTRY

1. INORGANIC CHEMISTRY.—For students who have no entrance credit for high school chemistry. I and II, (5). *Prerequisite*: One unit of entrance credit in physics, or 2½ units of entrance credit in mathematics, or credit in Mathematics 2 or 3.
2. INORGANIC CHEMISTRY.—I and II, (3). *Prerequisite*: One unit of entrance credit in chemistry.
3. INORGANIC CHEMISTRY.—For engineering students. I and II, (4). Students who have received entrance credit for high school chemistry are given only three hours credit for Chemistry 3.
4. CHEMISTRY OF METALLIC ELEMENTS.—For engineering students. II, (4). *Prerequisite*: Chemistry 1, 2, or 3.
5. INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS.—For non-engineers and non-chemistry majors. II, (5). *Prerequisite*: Chemistry 1, 2, or 3.
6. INORGANIC CHEMISTRY.—For chemical engineers and chemistry majors. Credit in Chemistry 6 will not be granted to students who have received credit in Chemistry 4 or 5. II, (5). *Prerequisite*: Chemistry 1, 2, or 3.
10. QUALITATIVE ANALYSIS.—II, (5). *Prerequisite*: Chemistry 6.
22. ELEMENTARY QUANTITATIVE ANALYSIS.—II, (5). *Prerequisite*: Chemistry 4 or 5.
24. QUANTITATIVE ANALYSIS.—II, (5). For chemistry majors. *Prerequisite*: Chemistry 10.
34. ORGANIC CHEMISTRY.—For chemical engineers and chemistry majors. II, (5). *Prerequisite*: Chemistry 6, 10, and 24.

ECONOMICS

1. PRINCIPLES OF ECONOMICS.—I and II, (5). *Prerequisite*: One year of university work.
2. ELEMENTS OF ECONOMICS.—For non-commerce students. I and II, (3). *Prerequisite*: One year of university work.
22. ECONOMIC HISTORY OF THE UNITED STATES.—Open to freshmen only. I and II, (3).
27. INTRODUCTION TO BUSINESS.—Open to freshmen who have had one semester of university work. II, (3).
70. ELEMENTS OF STATISTICS.—II, (3). *Prerequisite*: Economics 1 or 2; sophomore standing.

ENGLISH

- 10a. TYPES OF POETRY.—I and II, (3). Credit is not given for English 11a or 11b in addition to English 10a, or for any of these courses in addition to English 20a and 20b. *Prerequisite*: Minimum entrance requirement in English.
- 11a. CHRONOLOGICAL STUDY OF MASTERPIECES.—I and II, (3). See note under English 10a. *Prerequisite*: Minimum entrance requirement in English.
- 11b. CHRONOLOGICAL STUDY OF MASTERPIECES.—I and II, (3). See note under English 10a. *Prerequisite*: English 11a.
12. AMERICAN LITERATURE.—I and II, (2). *Prerequisite*: Sophomore standing or exemption from Rhetoric 2.
- 20a. CHIEF ENGLISH WRITERS OF THE NINETEENTH CENTURY.—II, (4). For non-English majors. See note under English 10a. *Prerequisite*: Sophomore standing.
23. INTRODUCTION TO SHAKESPEARE.—II, (3). *Prerequisite*: Sophomore standing or exemption from Rhetoric 2.

FRENCH

- 1a. ELEMENTARY FRENCH.—I and II, (4). No credit toward graduation is given for French 1a without French 1b.
- 1b. ELEMENTARY FRENCH (CONTINUED).—II, (4). *Prerequisite*: French 1a, or one year of high school French.
- 2a. MODERN FRENCH.—I and II, (4). *Prerequisite*: French 1b, or two years of high school French.
- 2b. MODERN FRENCH (CONTINUED).—II, (4). *Prerequisite*: French 2a, or three years of high school French.

GENERAL ENGINEERING DRAWING

1. ELEMENTS OF DRAWING.—I and II, (4). *Prerequisite*: Plane geometry, 1 unit.
2. DESCRIPTIVE GEOMETRY.—II, (4). *Prerequisite*: Plane and solid geometry, 1½ units.

GEOGRAPHY

1. ELEMENTS OF GEOGRAPHY.—I and II, (5).
22. GENERAL GEOGRAPHY.—For commerce students only. Not open to students who have credit in Geography 1 or 2. I and II, (5).

GEOLOGY

1. GENERAL GEOLOGY.—I and II, (3).
- 1a. GENERAL GEOLOGY LABORATORY.—I and II, (2). *Prerequisite*: Geology 1 or concurrent registration therein.

GERMAN

- 1a. ELEMENTARY COURSE.—I and II, (4). Not open to students who have had high school credit in this language. No credit toward graduation is given for German 1a without German 1b.
- 1b. ELEMENTARY COURSE (CONTINUED).—II, (4). *Prerequisite*: German 1a, or one year of high school German.
- 2a. INTERMEDIATE COURSE.—II, (4). *Prerequisite*: German 1b, or two years of high school German.

HISTORY

- 1a. CONTINENTAL EUROPEAN HISTORY TO 1815.—I and II, (4).
- 1b. CONTINENTAL EUROPEAN HISTORY, 1815-1946.—II, (4).
- 2a. HISTORY OF ENGLAND TO 1688.—I and II, (3).
- 3a. HISTORY OF THE UNITED STATES TO 1828.—I, (3). *Prerequisite:* Sophomore standing.
- 3b. HISTORY OF THE UNITED STATES, 1828-1946.—I and II, (3). *Prerequisite:* Sophomore standing.

HYGIENE

2. ESSENTIALS OF HYGIENE AND SANITATION.—I and II, (2).
5. ELEMENTARY HYGIENE AND SANITATION.—I and II, (2).

MATHEMATICS

- A. REFRESHER COURSE IN ALGEBRA FOR VETERANS.—II, (no credit).
- G. REFRESHER COURSE IN GEOMETRY FOR VETERANS.—II, (no credit).
- R. REFRESHER COURSE IN HIGH SCHOOL MATHEMATICS FOR VETERANS.—I, (no credit).
1. SOLID GEOMETRY.—I and II, (3). *Prerequisite:* Entrance algebra, 1 unit; plane geometry, 1 unit.
2. COLLEGE ALGEBRA.—I and II, (3). *Prerequisite:* Entrance algebra, 1½ units; plane geometry, 1 unit.
3. ALGEBRA.—I and II (5). *Prerequisite:* Entrance algebra, 1 unit; plane geometry, 1 unit.
4. PLANE TRIGONOMETRY.—I and II, (2). *Prerequisite:* Entrance algebra, 1½ units, or concurrent registration in Mathematics 3.
- 4a. ELEMENTS OF ALGEBRA AND TRIGONOMETRY.—I and II, (3). *Prerequisite:* High school algebra, 1 unit.
5. ADVANCED TRIGONOMETRY.—I and II, (2). *Prerequisite:* Entrance algebra, 1½ units; plane geometry, 1 unit; solid geometry, ½ unit; Mathematics 4 or entrance trigonometry (½ unit) provided the student can pass placement test to be given in the first two class meetings.
- 6a. ANALYTIC GEOMETRY.—I and II, (4). *Prerequisite:* Mathematics 2 or 3 and 4 or 5.
7. CALCULUS.—II, (5). *Prerequisite:* Mathematics 6a.

PHILOSOPHY

1. INTRODUCTION TO PHILOSOPHY.—II, (3). *Prerequisite:* Sophomore standing.

PHYSICAL EDUCATION FOR MEN

- 20a. PRESCRIBED EXERCISES.—I and II, (1).
- 20b. PRESCRIBED EXERCISES.—II, (1).
23. VOLLEYBALL.—II, (1).
24. BEGINNING SWIMMING.—I and II, (1).
27. APPARATUS AND STUNTS (GYMNASTICS).—II, (1).
28. BOXING.—II, (1).
33. TENNIS.—II, (1).
34. SOFTBALL.—II, (1).
41. ADVANCED SWIMMING.—II, (1). *Prerequisite:* Ability to swim 100 yards.
43. TOUCH FOOTBALL.—I, (1).
60. BASIC PHYSICAL FITNESS.—II, (1).

PHYSICAL EDUCATION FOR WOMEN

51. ELEMENTARY RHYTHMS.—I, (1).
57. MODIFIED ACTIVITIES.—Recommendation from the Department of Health Service is necessary for registration in this course. I and II, (1).
58. TEAM SPORTS.—I and II, (1).
60. BADMINTON.—II, (1).
74. ELEMENTARY SWIMMING.—II, (1).

PHYSICS

- 1a. GENERAL PHYSICS (MECHANICS, SOUND, AND HEAT).—I and II, (4). *Prerequisite:* Mathematics 2 and 4; concurrent registration in Physics 3a.
- 1b. GENERAL PHYSICS (ELECTRICITY, MAGNETISM, AND LIGHT).—II, (4). *Prerequisite:* Physics 1a; registration in Physics 3b.
- 3a. GENERAL PHYSICS LABORATORY.—I and II, (1). *Prerequisite:* Concurrent registration in Physics 1a.
- 3b. GENERAL PHYSICS LABORATORY.—II, (1). *Prerequisite:* Concurrent registration in Physics 1b.

PHYSIOLOGY

1. MAMMALIAN PHYSIOLOGY.—Without laboratory. I and II, (3).

POLITICAL SCIENCE

- 1a. AMERICAN GOVERNMENT: ORGANIZATION AND POWERS.—I and II, (3). *Prerequisite:* Sophomore standing.

PSYCHOLOGY

1. INTRODUCTION TO PSYCHOLOGY.—I and II, (4). *Prerequisite:* Sophomore standing.

RHETORIC

0. RHETORIC AND COMPOSITION.—Open to students who fail the placement test for admission to Rhetoric 1. Students passing the course will be admitted to Rhetoric 1 without further examination. I and II, (no credit).
1. RHETORIC AND COMPOSITION.—I and II, (3). Rhetoric 1 and 2 are not counted toward a major in English. *Prerequisite:* A passing grade on the Rhetoric 1 placement examination or a passing grade in Rhetoric 0.
2. RHETORIC AND COMPOSITION.—See note under Rhetoric 1. I and II, (3). *Prerequisite:* Rhetoric 1 or exemption from Rhetoric 1.
4. NARRATION AND DESCRIPTION.—II, (3). *Prerequisite:* Rhetoric 1 and 2; sophomore standing.
10. BUSINESS LETTER WRITING.—I and II, (2). This course is not counted toward a major in English. *Prerequisite:* Rhetoric 1 and 2.

SOCIOLOGY

1. PRINCIPLES OF SOCIOLOGY.—I and II, (3). *Prerequisite:* Sophomore standing.

SPANISH

- 1a. ELEMENTARY SPANISH.—For students who have had no work in Spanish. I and II, (4). No credit toward graduation is given for Spanish 1a without Spanish 1b.
- 1b. ELEMENTARY SPANISH (CONTINUED).—I and II, (4). *Prerequisite:* Spanish 1a, or one year of high school Spanish.
- 2a. MODERN SPANISH.—I and II, (4). *Prerequisite:* Spanish 1b, or two years of high school Spanish.
- 2b. MODERN SPANISH (CONTINUED).—I and II, (4). *Prerequisite:* Spanish 2a, or three years of high school Spanish.

SPEECH

1. PRINCIPLES OF EFFECTIVE SPEAKING.—Open to freshmen. I and II, (3)
10. ORAL INTERPRETATION OF LITERATURE.—Open to freshmen. I and II, (2).

ZOOLOGY

1. GENERAL ZOOLOGY.—I and II, (5).
2. COMPARATIVE VERTEBRATE ANATOMY.—II, (5). *Prerequisite:* Zoology 1.

PROFESSIONAL COLLEGES IN CHICAGO

THE COLLEGES OF DENTISTRY, MEDICINE, AND PHARMACY, OF the University of Illinois, are located near the Cook County Hospital in the great medical center on the west side of Chicago. The work of these colleges, together with the related work in the Graduate School, is centralized in the Medical and Dental College Laboratories Building, facing on Polk, Wood, and Wolcott Streets. The campus, which is about three miles from the "Loop," or main business district of the city, can be reached conveniently by elevated train, street car, or automobile.

The University buildings contain the administrative offices of the three colleges, the library, several museums, many classrooms and large laboratories for class work, numerous smaller laboratories for individual research projects, an autopsy amphitheater, a large and unusually well-equipped surgical amphitheater, and the clinics of the College of Dentistry. The Student Union Building is at 715 South Wood Street.

Available for instruction are the Research and Educational Hospital and the Illinois Surgical Institute for Children, both of which were operated by the State Department of Public Welfare until they were transferred to the University in 1941. Additional facilities for instruction and research are available in the Illinois Neuropsychiatric Institute, the Illinois Eye and Ear Infirmary, and the Institute for Juvenile Research, which are located on or near the campus and are operated jointly by the University and the Department of Public Welfare.

The Research and Educational Hospital, planned and built for teaching and investigation, with 400 beds, connects directly with the classrooms and laboratories of the three colleges. Each year nearly 6,000 patients, all charity cases, are admitted. The obstetrics department handles approximately 1,000 patients annually, seventy per cent in the hospital and the remainder cared for at home. There are seven surgical operating rooms, all with facilities for students, including a large amphitheater, seating nearly 200, completely equipped for all types of dental and medical surgery. There is also a well-equipped cancer clinic with a 400,000-volt therapeutic X-ray machine and an adequate supply of radium. The entire hospital is constantly in use for teaching, primarily of undergraduate medical students.

The Illinois Surgical Institute for Children, commonly called the Orthopaedic Institute, has beds for 130 patients, with complete equipment for physiotherapy and hydrotherapy. It has also a therapeutic pool, a solarium for ultra-violet treatment of patients in groups, school rooms, occupational therapy facilities, a recreational room, a large research laboratory, and a complete shop for manufacturing braces and plaster casts.

The Neuropsychiatric Institute has two separate divisions, one for neurological and one for psychiatric cases. Provision has been made for teaching in all sections, including outpatient service, wards, and a combination operating and lecture room. Extensive research facilities are also provided.

Under an agreement made in 1941, the Presbyterian Hospital, a neighboring institution with 450 beds, became affiliated with the University of Illinois. Members of its staff, who formerly were on the staff of Rush Medical School of the University of Chicago, were added to the clinical faculty of the College of Medicine.

The administration of the Illinois Eye and Ear Dispensary has been trans-

ferred to the University of Illinois. The very extensive facilities thus made available are used primarily in specialty and graduate training but also add materially to the undergraduate program.

Active teaching is being conducted also in Cook County Hospital, the Municipal Contagious Hospital, West Suburban Hospital, University Hospital, and St. Luke's Hospital. The Chicago Board of Health also provides facilities for the study of public health problems.

The Library contains a comprehensive collection of standard and modern works on dental, medical, and pharmaceutical subjects, with over 850 current periodicals and more than 79,000 books on the shelves at present. It is used by professional men throughout the Chicago area, and its service to the University staff and student body is supplemented by loan arrangements with other libraries.

Some matters of interest to all students in the Chicago professional colleges of the University are presented below. For further description of the College of Medicine, see page 426; the College of Dentistry, page 415; the College of Pharmacy, page 448.

Veterans

Veterans of World War II may attend any of the professional colleges in Chicago under the provisions of Public Law 16 (Rehabilitation) or Public Law 346 (G.I. Bill of Rights). Under each act the government pays all school charges and provides all required books and equipment. The veteran should consult the office of the Veterans Administration to apply for the benefits of either act.

Applicants who are veterans will be given such special consideration as their service record may make advisable. Men who have been injured or specially decorated in service will be considered accordingly.

Graduate Research Fellowships and Assistantships

Four research fellowships are awarded annually in the fields of dentistry, medicine, and pharmacy, at a stipend of \$1,200 for the calendar year (with one month's vacation). Fellows are eligible for reappointment in competition with new applicants.

Walgreen Fellowship in Pharmacy.—One graduate fellowship of \$1,000, for work leading to the degree of Doctor of Philosophy in Chemistry or Pharmacognosy and Pharmacology, is offered annually by the Graduate School, through the College of Pharmacy. The stipend is paid in the form of a monthly salary, but no teaching or technical services are required. Candidates for this fellowship should possess a Master of Science degree, preferably in some field of pharmaceutical endeavor, a reading knowledge of German and French, and should have demonstrated an ability to conduct independent research.

Graduate Assistantships in Pharmacy.—A limited number of half-time graduate assistantships, carrying an annual stipend of \$660 plus exemption from tuition and other fees for graduate study, are available in the College of Pharmacy. Candidates for these positions must have received a Bachelor of Science degree in Pharmacy from an accredited college and must possess not less than a 3.5 grade point average in their undergraduate courses. A certificate of registration as a licensed pharmacist is not essential, but it is an advantage to all students who apply for graduate work in Hospital Pharmacy. The program of study, requiring at least two full calendar years, leads to the degree of Master of Science in the fields of Chemistry, Pharmacognosy, Pharmacology, or Hospital Pharmacy.

Recreational Facilities

The social and recreational center for students, alumni, and faculty is the Chicago Illini Union Building, 715 South Wood Street. Its facilities include a cafeteria, grill, soda fountain, browsing room, music room, gymnasium, meeting rooms, and game rooms. Intramural sports under a trained director are encouraged, and facilities and equipment are available for softball, touch football, horseshoes, tennis, archery, wrestling, fencing, badminton, basketball, handball, and ping pong. Through special arrangements, the swimming pools of the nearby Y.M.C.A. and Y.W.C.A. are available to students. In winter the cement tennis courts are flooded for ice skating.

Chicago College Organizations

The Chicago Illini Center, located in the LaSalle Hotel, is headquarters for the Chicago alumni of the University, and particularly for the alumni associations of the Colleges of Dentistry, Medicine, and Pharmacy.

Alpha Omega Alpha.—The international honorary medical fraternity, Alpha Omega Alpha, was founded in the College of Medicine in 1902. Third-year and fourth-year medical students whose grades rank them in the highest one-sixth of their class are eligible to membership.

Omicron Kappa Upsilon.—A chapter of Omicron Kappa Upsilon, national honorary dental fraternity, was organized in the College of Dentistry in 1928. Students completing the dental course with grades that rank them in the highest twelve per cent of their class are eligible to membership.

Pharmaceutical Association.—The Chicago Branch of the American Pharmaceutical Association, composed of representative pharmacists of Chicago and vicinity, holds its monthly meetings at the College of Pharmacy. Students of pharmacy are eligible to membership.

Pi Kappa Epsilon.—This is a national honorary medical fraternity to which members are elected on the basis of character, personality, and professional qualities.

Rho Chi.—Phi Chapter of Rho Chi, national honorary pharmaceutical society, organized to promote the advancement of the pharmaceutical sciences, is located at the College of Pharmacy. Students who have completed 115 quarter hours in the curriculum in pharmacy with an average grade of at least 4.0 are eligible for membership.

Sigma Xi.—In 1928 the Society of the Sigma Xi granted a charter for a chapter at the College of Medicine. Its purpose is the promotion of research.

PHYSICAL EDUCATION

All men students in the Colleges of Dentistry, Medicine, and Pharmacy are required to secure six hours (two academic years) credit in Physical Education. One hour must be in Physical Education Theory and five hours in Physical Education Practice. Women students are required to take Physical Education Theory. All new students, except those permanently excused by the Health Service, are required to take a Physical Fitness Test. This test is given by the Department of Physical Education in Chicago. Men students who fail to pass this test must register in Physical Education Practice. Men students who pass the test will receive one hour credit in Physical Education Practice. A student may continue to receive credit each quarter in Physical Education Practice by repassing the Physical Fitness Test.

Required Courses — First Year

1. PHYSICAL EDUCATION THEORY.—The measurement of normal health levels, including somatotyping, posture, cardio-respiratory, weight analysis, motor fitness; prescribed exercises for the handicapped and post-operative cases. Two hours each week, I.
- 2-3. PHYSICAL EDUCATION PRACTICE.—A continuation of Physical Education I. The measurement, development, and maintenance of physical fitness in each student. Two hours each week, II and III.
- 2a-3a. PRESCRIBED EXERCISE AND SPORTS.—Open only to students assigned by the University Health Service. An individualized program is designed for each student. Two hours each week, II and III.

Required Courses — Second Year

- 4-5-6. PHYSICAL EDUCATION PRACTICE.—See Physical Education 2-3. Two hours each week, I, II, and III.
- 4a-5a-6a. PRESCRIBED EXERCISE AND SPORTS.—See Physical Education 2a-3a. Two hours each week, I, II, and III.

Elective Courses

11. SPECIAL PHYSICAL FITNESS.—These courses are designed for those students desiring a better knowledge of physical fitness as related to the field of Medicine. Courses will be offered to students who receive permission from the head of the department. The work will be of a research nature.

The College of Dentistry

808 South Wood Street, Chicago 12

THE COLLEGE OF DENTISTRY WAS FIRST ESTABLISHED IN 1892 as a proprietary institution, the Columbian Dental College. After a partial reorganization in 1898, it became known as the Illinois School of Dentistry. Its first affiliation with the University was made in 1901, when it was named the School of Dentistry of the University of Illinois. In 1905 the name was changed to the College of Dentistry, and in 1913 the University assumed complete control.

Since 1937 the College of Dentistry has been located in the Medical and Dental College Laboratories Building at the corner of Polk and Wood Streets. Its offices, classrooms, and clinics occupy the east tower of this building. To promote efficiency in teaching and better service to patients, each clinical department has its own infirmary, with equipment specially designed for its particular work. Some of the laboratories of the Colleges of Medicine and Pharmacy in the same building are used also for pre-clinical instruction of students in the College of Dentistry.

Instruction in the College of Dentistry is offered to candidates for the degree of Doctor of Dental Surgery and to graduate students who may or may not be candidates for higher degrees. The curriculum leading to the degree of Doctor of Dental Surgery, summarized on the following page, extends through four academic years. Since dentistry draws upon the same fundamental sciences as does medicine the courses of the first two years parallel the medical courses in these subjects and are presented mainly by members of the staff of the College of Medicine. The dental student has, in addition, to train himself in the use of his hands so that he may execute the multitude of fine technical operations essential in the treatment of oral disease. To this end, courses in basic and applied technic are presented during the first two years.

Clinical practice on patients begins with the third year and is continuous through the third and fourth years. The third year is devoted largely to training the student to apply the technics he has learned in the laboratories to living patients so that he may be in a position to correlate all of his scientific and technical training during the fourth year. The important interrelations of dentistry and other branches of medicine are stressed by courses in medicine, pediatrics, and dermatology, which are given conjointly by members of the medical and dental faculties.

The clinical facilities and equipment in the dental infirmaries are of the most modern design, and the various clinics have been organized to provide maximum efficiency in operation and comfort for patients. Fully-equipped operating units have been provided in the major clinical departments to simulate the privacy of a dental office.

During their third and fourth years, students who have shown special aptitude and whose previous work has been of a sufficiently high quality, may be permitted to pursue advanced work in any department. If at the end of the fourth year the student's application and attainment are regarded as of a sufficiently high character, he may be awarded an honorary research assistantship.

Each year more hospitals are establishing dental internships. Students of the College of Dentistry are urged to take advantage of these opportunities to gain experience before entering private practice, and every effort is made to assist fourth-year students in securing such positions for the year following graduation. Most of the departments in this college also offer graduate courses leading to

SUMMARY OF CLOCK HOURS IN THE COLLEGE OF DENTISTRY

Subjects	First Quarter		Second Quarter		Third Quarter		Total
	Didactic	Laboratory	Didactic	Laboratory	Didactic	Laboratory	
FIRST YEAR							
Anatomy, Gross	22	66	22	66	22	66	264
Anatomy, Neurology .....	..	..	..	..	11	22	33
Anatomy, Oral	11	33	11	33	11	33	132
Biological Chemistry	33	66	33	66	..	..	198
Histology, Dental .....	..	..	10	20	22	44	96
Histology, General	22	44	12	24	..	..	102
History of Medicine and Dentistry	11	..	11	..	11	..	33
Operative Dentistry .....	..	..	..	..	11	33	44
Physiology .....	..	..	..	..	44	57	101
Technics, Basic Dental	11	55	11	55	..	..	132
<i>Total</i>	110	264	110	264	132	255	1,135
SECOND YEAR							
Applied Anatomy of Head and Neck .....	..	..	5	..	11	..	16
Bacteriology	33	66	11	33	..	..	143
Crowns and Fixed Dentures	11	66	11	33	11	66	198
Dentures, Full .....	..	..	2	12	8	58	80
Dentures, Removable and Partial	11	33	9	54	..	..	107
History of Medicine and Dentistry	33	..	..	..	..	..	33
Operative Dentistry .....	..	33	11	33	11	33	121
Pathology .....	..	..	44	55	44	55	198
Physiology	44	57	44	33	11	55	178
Therapeutics .....	..	..	..	..	..	..	66
<i>Total</i>	132	255	137	253	96	267	1,140
Subjects	First Quarter		Second Quarter		Third Quarter		Total
	Didactic	Laboratory or clinic	Didactic	Laboratory or clinic	Didactic	Laboratory or clinic	
THIRD YEAR							
Anesthetics .....	..	..	10	..	..	..	10
Crowns and Fixed Dentures (Clinic)	4	45	4	50	..	50	153
Crowns and Fixed Dentures (Technic) ¹	(11)	(99)	..	..	..	..	(110)
Dentistry and Society .....	..	..	11	..	11	..	22
Dentures, Removable	4	45	4	50	..	50	153
Dermatology .....	..	..	11	..	..	..	11
Diagnosis .....	..	3	..	3	..	3	9
Materia Medica	22	..	22	..	22	..	66
Medicine	11	..	11	..	11	..	33
Operative Dentistry	11	45	11	50	11	50	178
Oral Hygiene and Public Health	11	..	..	..	..	..	11
Oral Pathology	33	44	..	..	..	..	77
Oral Surgery, Minor .....	..	..	..	4	..	4	8
Orthodontia	11	..	11	..	11	..	33
Pediatrics, Dental	11	..	11	..	11	..	33
Preventive Medicine .....	..	..	..	..	33	..	33
Radiology .....	..	..	..	7	..	7	14
Radiographic Interpretation .....	..	..	11	..	..	..	11
Therapeutics, Clinic .....	..	45	..	50	..	50	145
Therapeutics, Didactic .....	..	..	11	..	11	..	22
<i>Total</i>	118	227	128	214	121	214	1,022
FOURTH YEAR							
Crowns and Fixed Dentures	8	55	8	50	..	50	171
Dentistry for Children	6	22	..	22	..	22	72
Dentures, Removable	5	55	6	50	5	50	171
Elective	(11)	(33)	..	..	..	..	(44)
Jurisprudence .....	..	..	10	..	..	..	10
Medicine	11	..	11	..	11	..	33
Operative Dentistry	6	55	5	50	5	50	171
Oral Surgery	22	25	22	25	22	25	141
Oral Surgery, Minor .....	..	16	..	16	..	16	48
Orthodontia	11	..	11	6	..	8	36
Seminar .....	..	..	11	..	22	..	33
Therapeutics, Clinic .....	..	55	..	50	..	50	155
Therapeutics, Didactic	11	..	11	..	..	..	22
<i>Total</i>	80	283	95	269	65	271	1,063
GRAND TOTAL							4,360

¹ Not offered to third-year students after 1946-1947.

advanced degrees. Graduate work in orthodontia is available as preparation for the practice of orthodontia as a specialty.

The College of Dentistry has a museum of dental anatomy and comparative odontology containing fifteen hundred specimens, which supplement the anatomy and pathology museums in the College of Medicine.

For the *faculty* of the College of Dentistry, see page 62; for *admission*, see page 110; for *fees*, see page 120; for *scholarships*, see page 133; for *loan funds*, see page 136; for *college organizations*, see page 414; for *prizes*, see page 143.

Requirements for Graduation

A candidate for any degree in the College of Dentistry must show evidence of good moral character, pay all indebtedness to the University, obtain passing grades in all courses of the required curriculum, and have grades of "C" or better in at least three-fourths of the total hours taken in this college and counted toward the degree.

Doctor of Dental Surgery.—Awarded on the completion of the four-year curriculum in dentistry. At least the third and fourth years must be done in the College of Dentistry.

Bachelor of Science in Dentistry.—Awarded to students who have completed the first two years of work in the College of Dentistry, and who have the proper distribution of entrance credits (see page 99).

Special Courses for Dentists

The College of Dentistry offers to legally qualified practitioners the following special short courses, each of which continues four weeks: ceramics; crowns and fixed partial dentures; full dentures and removable partial dentures; histology; operative dentistry; oral surgery; and therapeutics. The fee for each course is \$50. Descriptions of these courses appear under the various departments on the following pages.

In the special graduate course in orthodontia, which continues one year, the fee is \$100 for each quarter.

License to Practice in England

The College of Dentistry of the University of Illinois has been listed since 1916 as one of the dental schools recognized by the Royal College of Surgeons, in London. This recognition implies that the Royal College of Surgeons will exempt graduates in dental surgery of the University of Illinois from the preliminary science examination for the license in dental surgery, and will accept such parts of the curriculum for the license as are completed in the College of Dentistry of the University of Illinois toward the curriculum of studies required for the license.

COURSES OFFERED IN THE COLLEGE OF DENTISTRY

NOTE: The following list of courses is in alphabetic order of departments. The courses offered in each department are listed numerically. In the description of each course the Roman numerals I, II, III indicate the first, second, and third quarters, respectively, and the Arabic numerals preceding them indicate the number of one-hour periods required for lecture, recitation, laboratory, etc., each week throughout the quarter unless otherwise stated. Credit is calculated in clock hours except in courses for graduate students which show the units of credit in parenthesis.

A circular announcing courses to be offered in the coming year, and including other information for prospective students, may be obtained by addressing the Dean of the College of Dentistry, 808 South Wood Street, Chicago 12.

ADMITTING CLINIC

Required Courses — Third Year

35. DIAGNOSIS.—Clinic and conference, three 1-hour periods, I; one 3-hour period (two weeks), II or III. Students assigned in groups. Heads of clinical departments cooperating.

Elective Courses — Fourth Year

51. **DIAGNOSIS.**—Lecture or conference, 1, clinic, one 3-hour period, I. Eligibility to be determined by student's record.

ANATOMY**Required Courses — First Year**

11. **SYSTEMATIC AND REGIONAL ANATOMY.**—This includes a complete dissection of the body. Lecture, demonstration, recitation, and seminar, 2; laboratory, two 3-hour periods. Continuous through I, II, and III.
13. **NEUROLOGY.**—Gross and microscopic anatomy of the nervous system; dissection of the brain and examination of stained sections; correlation of structure and function. Lecture, demonstration, and laboratory, one 3-hour period, I.

Elective Courses — Fourth Year

51. **ADVANCED ANATOMY OF THE HEAD AND NECK.**—Lecture or quiz, 1, laboratory, one 3-hour period, I. Eligibility to be determined by student's record.

Courses for Graduate Students

101. **ADVANCED ANATOMY.**—The work may take the direction either of macroscopic or of microscopic anatomy, or of both, according to the student's major problem: in macroscopic anatomy, a detailed redissection of the human body, or any of its parts; in microscopic anatomy (embryology, cytology, histology, etc.), a consideration of morphological changes in the organism which are directly correlated with normal processes, such as reproduction, differentiation, nutrition, growth, variation, regulation, regeneration, activity, secretion, rest, fatigue, senility. Course designed for students choosing anatomy as a minor and for students preparing for individual research in anatomy. (1 to 2 units).
103. **INDIVIDUAL RESEARCH.**—In embryology, cytology and histology, neurology, anthropology and biometrics, experimental morphology, functional and allied anatomy. (1 to 3 units).

APPLIED MATERIA MEDICA AND THERAPEUTICS**Required Courses — Second Year**

23. **TECHNIC.**—Methods of exposing, cleaning, enlarging, and filling root-canals. Principles of mouth examination and technic of oral prophylaxis. Lecture, 1, laboratory, 5, III.

Required Courses — Third Year

31. **MATERIA MEDICA AND THERAPEUTICS.**—Nomenclature, classification, and action of drugs, and prescription writing. Lecture, 2. Continuous through I, II, and III.
33. **ORAL HYGIENE AND PUBLIC HEALTH.**—Measures for prevention of dental disease. The oral flora and its relation to disease. Technic of oral hygiene. Relation of the dentist to public health problems. Lecture, 1, I.
34. **PERIODONTIA.**—Etiology, pathology, and treatment of diseases of the investing tissues of the teeth and of other oral tissues. Lecture, 1, II and III.
35. **CLINICAL PRACTICE.**—Clinical and laboratory examination; oral prophylaxis; treatment of the periodontal tissues; general management of root-canals. Conferences and demonstrations to groups. Continuous through I, II, and III.

Required Courses — Fourth Year

41. **CLINICAL APPLIED MATERIA MEDICA AND THERAPEUTICS.**—Dental hypoplasias, erosion, and caries. Pathology and treatment of diseases of the dental pulp and periapical tissue. Tissue reactions in periapical region following pulp removal. Lecture, 1, I and II.
45. **CLINICAL PRACTICE.**—Clinical and laboratory examination and diagnosis of oral conditions; interpretation of radiograms; treatment of root-canals and periodontal tissues; records. Conferences and demonstrations to groups. Continuous through I, II, and III.

Elective Courses — Fourth Year

51. **ADVANCED THERAPEUTICS.**—Group or individual conference, 1, laboratory, one 3-hour period, I. Course limited to six students who are acceptable to the department.

Special Courses for Dentists

61. **APPLIED MATERIA MEDICA AND THERAPEUTICS.**—Diseases of the dental pulp and the periapical tissues and their treatment. A study of tissue reactions following treatment as exhibited by clinical, radiographic, and microscopic findings. The management of clinical cases. Fee for one month, \$50.
62. **APPLIED MATERIA MEDICA AND THERAPEUTICS.**—Diseases of the periodontal tissues and their treatment. The microscopic study of the gingival crevice and pathologic pockets in human material. The management of clinical cases. Fee for one month, \$50.

Courses for Graduate Students

101. **ADVANCED THERAPEUTICS.**—(1 or 2 units).
103. **THERAPEUTIC RESEARCH.**—(1 or 2 units).

BACTERIOLOGY AND PUBLIC HEALTH**Required Courses — Second Year**

21. **GENERAL BACTERIOLOGY AND PROTOZOOLOGY.**—Same as B.P.H. 1 in College of Medicine.

Required Courses — Third Year

33. **PREVENTIVE MEDICINE.**—Same as B.P.H. 2 in College of Medicine.

Courses for Graduate Students

101. **ADVANCED BACTERIOLOGY.**—Same as B.P.H. 101 in College of Medicine.
102. **SEMINAR IN BACTERIOLOGY.**—Same as B.P.H. 102 in College of Medicine.
103. **RESEARCH IN BACTERIOLOGY.**—Same as B.P.H. 103 in College of Medicine.
104. **IMMUNOLOGY.**—Same as B.P.H. 104 in College of Medicine.
105. **VIRUSES.**—Same as B.P.H. 105 in College of Medicine.
106. **CYTOLOGY AND METABOLISM OF MICROORGANISMS.**—Same as B.P.H. 106 in College of Medicine.

BASIC DENTAL TECHNICHS**Required Courses — First Year**

11. **BASIC DENTAL TECHNICHS.**—A course designed to give the beginning dental student experience in the handling of dental materials and to afford him practice in the basic principles of laboratory procedures. Lecture and laboratory, 6, I and II.

BIOLOGICAL CHEMISTRY**Required Courses — First Year**

11. **CHEMISTRY OF CELL CONSTITUENTS.**—Physical and chemical properties of solutions; chemistry of carbohydrates, lipides, and proteins; enzymes and digestion. Lectures, demonstrations, conferences, laboratory, 9, I.
12. **METABOLISM.**—Chemistry of bile, blood, milk, and tissues; chemistry of urine (qualitative and quantitative). Lectures, demonstrations, conferences, laboratory, 9, II.

Elective Courses

RESEARCH.—The laboratories are open to persons with the requisite scientific training for the conduct of original investigation.

BIOCHEMICAL SEMINAR.—The members of the teaching staff, graduate students, and others working in the field of biochemistry meet weekly to present and discuss the results of their own investigations, as well as to summarize some of the important advances in the field.

Courses for Graduate Students

101. **ADVANCED BIOLOGICAL CHEMISTRY.**—Biochemical methods of research, biological colloids, enzyme action, and metabolism. (1 or 2 units).
102. **SPECIAL TOPICS IN BIOCHEMISTRY.**—Blood analysis; vitamin studies; methods and clinical significance. (1 unit).
103. **PHYSICAL AND COLLOID CHEMISTRY.**—Elements of physical and colloid chemistry and their application to biology and medicine, with emphasis on the chemistry of proteins. (1 unit).
104. **PROTEINS.**—Methods of preparation of pure proteins and study of their immunological and chemical properties. (1 unit).
105. **BIOCHEMICAL SEMINAR.**—The members of the teaching staff, graduate students, and others working in the field of biochemistry meet weekly to present and discuss the results of their own investigations, as well as to summarize some of the important advances in the field. ($\frac{1}{2}$ unit).
106. **BIOCHEMICAL RESEARCH.**—(1 or 2 units).

DENTISTRY FOR CHILDREN

Required Courses — Fourth Year

45. **DENTISTRY FOR CHILDREN.**—Operative and therapeutic care of children's teeth. Clinical practice. Students assigned in groups. Lecture, 6, I; clinic, 22 hours, I, II, and III.

Elective Courses — Fourth Year

51. **DENTISTRY FOR CHILDREN.**—Advanced studies in therapeutics, operative procedures, and principles of space maintenance. Lecture or conference, 1, clinic, one 3-hour period, I. Eligibility to be determined by student's record.

HISTOLOGY AND EMBRYOLOGY

Required Courses — First Year

11. **ORAL ANATOMY AND COMPARATIVE ODONTOLOGY.**—A study of the oral structures of man, with emphasis on tooth form and function. The natural history of the teeth and jaws approached through the evidence of genetics, comparative anatomy, and organic evolution. Lecture or quiz, 1, laboratory, one 3-hour period. Continuous through I, II, and III.
15. **GENERAL HISTOLOGY.**—Cell structure; relation of cells and intercellular substances; the elementary tissue; the histology of the organs of the circulatory, alimentary, respiratory, genito-urinary, and nervous systems, and the skin and its appendages. Lecture or quiz, 2, laboratory, two 2-hour periods, I; six weeks, II.
16. **DENTAL HISTOLOGY AND EMBRYOLOGY.**—Embryology of the face, oral cavity and teeth. The development of the tooth and its investing apparatus in terms of its growth, calcification, and eruption. The structure of the dental and oral tissues. The course also includes histo-physiologic aspects of clinical dentistry. Lecture, recitation, or seminar, 2, laboratory, two 2-hour periods, five weeks, II; III.

Elective Courses — Fourth Year

51. **ADVANCED EMBRYOLOGY OF THE TEETH AND ORAL CAVITY.**—Course limited to five students acceptable to the department. Lecture, 1, laboratory, one 3-hour period, I.
53. **ADVANCED HISTOLOGY OF THE TEETH AND ORAL CAVITY.**—Course limited to five students acceptable to the department. Lecture, 1, laboratory, one 3-hour period, I.

Special Courses for Dentists

61. **HISTOLOGY.**—Conference and demonstration on the following subjects: cells, epithelial tissue, connective tissue, embryology of tooth, enamel, dentin, and cementum, periodontal membrane, mandible, mouth tissues. Histologic analysis of the teeth of animals which have been subjected to various endocrine, vitamin, and other metabolic disturbances. Fee for one month, \$50.

Courses for Graduate Students

101. **ADVANCED DENTAL HISTOLOGY.**—(1 or 2 units).
 102. **RESEARCH IN MICROSCOPIC ANATOMY (TEETH AND RELATED TISSUES).**—(1 to 3 units).
 103. **EXPERIMENTAL HISTO-PHYSIOLOGY OF TEETH AND INVESTING TISSUES.**—(1 to 3 units).

JURISPRUDENCE**Required Courses — Fourth Year**

43. **JURISPRUDENCE.**—The principles of law governing individual and professional rights and obligations; rights and obligations arising from the relationship of dentist and patient and their enforcement in court; expert testimony; state dental statute and general law. Lecture, 1, ten weeks, II.

MEDICAL AND DENTAL HISTORY**Required Courses — First Year**

11. **HISTORY OF MEDICINE AND DENTISTRY.**—1. Continuous through I, II, and III.

Required Courses — Second Year

21. **HISTORY OF MEDICINE AND DENTISTRY.**—3, I.

Required Courses — Third Year

32. **DENTISTRY AND SOCIETY.**—1, II and III.

Required Courses — Fourth Year

42. **SEMINAR.**—Consultations on the preparation of scientific papers. Reading and discussion of papers. 1, II; 2, III.

Elective Courses — Fourth Year

51. **SOCIAL PROBLEMS.**—1, I.

MEDICINE**Required Courses — Third Year**

31. **DENTAL PEDIATRICS.**—Lecture, 1. Continuous through I, II, and III.
 34. **DERMATOLOGY.**—Lecture and clinic, 1, II.
 35. **MEDICINE.**—Lecture, 1. Continuous through I, II, and III.

Required Courses — Fourth Year

45. **MEDICINE.**—Lecture and clinic, 1. Continuous through I, II, and III.

Elective Courses

51. **HOSPITAL DENTISTRY.**—Dental treatment of hospital patients, with a discussion of hospital procedure. Open to five qualified students. Lecture or conference, 1, clinic, one 3-hour period, 1. Eligibility to be determined by student's record.

Courses for Graduate Students

NOTE: Registration for investigative work is open to qualified students who register for one unit of postgraduate clinical instruction.

101. **RESEARCH IN MEDICINE.**—(1 to 3 units).

OPERATIVE DENTISTRY**Required Courses — First Year**

13. **OPERATIVE DENTISTRY (TECHNIC).**—Theory of the etiology and treatment of dental caries; various types of restorations on models and manikins. Lecture and quiz, 1, laboratory, 3, III.

Required Courses — Second Year

21. OPERATIVE DENTISTRY (TECHNIC).—Continuation of course 13. Laboratory, 3, I; lecture and quiz, 1, laboratory, 3, II and III.

Required Courses — Third Year

35. OPERATIVE DENTISTRY (CLINICAL PRACTICE).—Principles of practice. Diagnosis. Restorations. Conferences and demonstrations to groups. Lecture, 1. Continuous through I, II, and III.

Required Courses — Fourth Year

45. OPERATIVE DENTISTRY (CLINICAL PRACTICE).—Continuation of course 35, with emphasis on study of the patient. Greater responsibility for the management of cases is placed on the student to encourage the development of individual responsibility and initiative. Lecture, 1, bi-weekly. Continuous through I, II, and III.

Elective Courses

51. OPERATIVE DENTISTRY.—Research and analysis of methods of treatment. Eligibility to be determined by student's record. 4, I.

Special Courses for Dentists

61. OPERATIVE DENTISTRY.—Special courses for dentists may be arranged by consultation with the Dean and the Head of the Department. Fee for one month, \$50.

ORAL AND MAXILLOFACIAL SURGERY**Required Courses — Third Year**

31. ANESTHETICS.—Lecture and conference, 1, II.
34. MINOR ORAL SURGERY CLINIC.—Students assigned in groups, one 4-hour period, two weeks, II or III.

Required Courses — Fourth Year

41. ORAL SURGERY.—Demonstration clinics in minor oral surgery and Cook County Hospital diagnostic clinics with ward rounds covering the major problems in maxillofacial surgery. Students assigned in groups throughout the year. Clinic, 25 hours; lecture, 22 hours, I, II, and III.
45. MINOR ORAL SURGERY CLINIC.—Students assigned in groups, four 4-hour periods. Continuous through I, II, and III.

Elective Courses — Fourth Year

51. MINOR ORAL SURGERY.—Extended instruction. Lecture, 1, laboratory, one 3-hour period, I. Eligibility to be determined by student's record.

Special Courses for Dentists

61. MINOR ORAL SURGERY.—Instruction in extraction of teeth, minor oral surgery, and oral pathology. Arranged by conference with the Head of the Department. Fee for one month, \$50.

Courses for Graduate Students

103. ORAL SURGERY.—(2 units).

ORTHODONTIA**Required Courses — Second Year**

22. ANALYSIS OF ANATOMY OF HEAD AND NECK.—Review of osteology and myology of head and neck; significance of bone design in relation to function; analysis of muscular forces operating in the dental region. Lecture, 1, five weeks, II and III.

Required Courses — Third Year

31. ORTHODONTIA.—Analysis of anatomy of head and neck; growth and development of head and neck; orthopaedic principles; etiology of malocclusion; diagnosis and case analysis. Lecture, 1. Continuous through I, II, and III.

Required Courses — Fourth Year

41. ORTHODONTIA.—History, development of appliances and treatment methods, principles of treatment; possibilities and limitation of treatment. Lecture, I, I and II.
44. ORTHODONTIA.—Presentation of cases showing records taken, analysis, prognosis, treatment, and results. Three 2-hour periods, II; students assigned in groups, four 2-hour periods, III.

Elective Courses — Fourth Year

51. ORTHODONTIA.—Growth and development of the head. Lecture, 1, laboratory, one 3-hour period, I. Eligibility to be determined by student's record.

Courses for Graduate Students

NOTE: Graduate students in orthodontia who desire to become candidates for the master's degree are required to complete four quarters of the organized orthodontia program and a minimum of one-half time for an extra quarter in research.

Graduate students in pedodontics who desire to become candidates for the master's degree are required to complete three quarters of the organized pedodontic program and a minimum of one-half time for an extra quarter in research.

101. ORTHODONTIA.—(1 to 3 units).
102. APPLIED ANATOMY AND GROWTH OF THE HEAD.—(1 unit).
103. PEDODONTICS.—(1 to 3 units).

PATHOLOGY**Required Courses — Second Year**

22. GENERAL AND SPECIAL PATHOLOGY.—The basic principles of pathologic processes, including tissue injury and repair, inflammation, circulatory disturbances, retrograde processes, and tissue responses to specific infectious agents and neoplasms, are considered in the first part of this course. In the latter part of the course, the disease processes affecting each organ and anatomic system are considered in greater detail. Post-mortem examinations with student assistance are conducted before the class. Lectures, demonstrations, quiz conferences, autopsies, and laboratory. Nine hours each week. II and III.

Required Courses — Third Year

31. ORAL PATHOLOGY.—Lecture, recitation, demonstration, 3, laboratory, two 2-hour periods, I.

Elective Courses

51. ORAL PATHOLOGY.—Tumors of the mouth. Lecture, 1, laboratory, one 3-hour period, I. Eligibility to be determined by student's record.

Courses for Graduate Students

101. ADVANCED PATHOGENESIS.—(1 to 3 units).
103. INDIVIDUAL RESEARCH.—(1 to 3 units).
105. ORAL PATHOLOGY.—(1 to 3 units).

PHYSIOLOGY**Required Courses — First Year**

13. HUMAN PHYSIOLOGY.—Same as Physiology I in College of Medicine.

Required Courses — Second Year

21. HUMAN PHYSIOLOGY.—Same as Physiology 2 in College of Medicine.
 23. HUMAN PHYSIOLOGY.—Same as Physiology 3 in College of Medicine.

Elective Courses

51. SPECIAL ADVANCED PHYSIOLOGY.—Same as Physiology 51 in College of Medicine.
 55. PROBLEMS IN PHYSIOLOGY.—Same as Physiology 55 in College of Medicine.

Courses for Graduate Students

101. RESEARCH IN PHYSIOLOGY.—Same as Physiology 101 in College of Medicine.
 102. RESEARCH IN BIOPHYSICS.—Same as Physiology 102 in College of Medicine.
 103. SEMINAR IN SELECTED FIELDS.—Same as Physiology 103 in College of Medicine.
 104. CURRENT LITERATURE SEMINAR.—Same as Physiology 104 in College of Medicine.

PROSTHETIC DENTISTRY**CROWNS AND FIXED PARTIAL DENTURES****Required Courses — Second Year**

21. TECHNIC.—Construction of inlay, three-quarter and crown retainers; pontics. Lecture, 1, laboratory, two 3-hour periods, I.
 22. CERAMICS AND SYNTHETIC RESINS.—History, physical characteristics, and application of porcelain; preparations and construction of complete crowns and pontics; stains. Construction of acrylic crowns. Lecture, 1, laboratory, one 3-hour period, II.
 23. TECHNIC.—Simple and compound types of fixed and semi-fixed partial dentures. Lecture, 1, laboratory, two 3-hour periods, III.

Required Courses — Third Year

35. CLINICAL PRACTICE.—Simple types of crowns and partial dentures; diagnosis. Conferences and demonstrations to groups, continuous through I, II, and III. Lecture, 1 (four weeks), I and II.

Required Courses — Fourth Year

45. CLINICAL PRACTICE.—Diagnosis; complex types of fixed and semi-fixed partial dentures, obturators; porcelain restorations. Conferences and demonstrations, continuous through I, II, and III. Lecture, 1 (eight weeks), I and II.

Elective Courses

51. DENTAL MATERIALS.—A study of the chemical and physical properties of the materials used in dentistry. Lecture, 1, laboratory, one 3-hour period, I. Eligibility to be determined by student's record.

Special Courses for Dentists

61. ORAL, FACIAL, AND SOMATOPROTHESIS.—The replacement of oral, facial, and other anatomical structures by artificial substitutes. Clinical and laboratory training in constructing and adapting anatomical replacements such as velum obturators and artificial ears and noses of resilient and elastic synthetic resins. Fee for one month, \$50.
 62. DENTAL CERAMICS, CROWNS, AND FIXED PARTIAL DENTURES.—The principles underlying the preparation and construction of crowns, bridge retainers, pontics, and connectors. An analysis of clinical data in relation to proper diagnosis, classification, and indications of various types of fixed restorations. A correlation of the manipulation and properties of the various materials used in this course. Fee for one month, \$50.

FULL DENTURES AND REMOVABLE PARTIAL DENTURES**Required Courses — Second Year**

21. **TECHNIC.**—Partial denture construction. Lecture and laboratory, 4, I; lecture and laboratory, 7 (nine weeks), II.
22. **TECHNIC.**—Full denture construction. Lecture and laboratory, 7 (two weeks), II; lecture and laboratory, 6, III.

Required Courses — Third Year

35. **CLINICAL PRACTICE.**—Partial and full dentures. Conferences and demonstrations to groups, continuous through I, II, and III. Lecture, 1 (four weeks), I and II.

Required Courses — Fourth Year

45. **CLINICAL PRACTICE.**—Partial and full denture construction. Lecture, 1, bi-weekly. Continuous through I, II, and III.

RADIOLOGY**Required Courses — Third Year**

31. **ORAL DIAGNOSIS AND RADIOGRAPHIC INTERPRETATION.**—Principles and methods. Lecture and quiz, I, II.
35. **RADIOLOGY.**—Technic and clinical practice. Demonstrations and conferences. Students assigned in groups, one 7-hour period, II and III.

The College of Medicine

1853 West Polk Street, Chicago 12

THE COLLEGE OF MEDICINE WAS FIRST ESTABLISHED IN 1881 as a proprietary school, the College of Physicians and Surgeons of Chicago. It became affiliated with the University of Illinois in 1897, the name was officially changed in 1900 to the College of Medicine of the University of Illinois, and in 1913 all the property and the stock of the old institution were transferred to the University. For buildings and equipment, see page 412.

The curriculum in the College of Medicine is summarized on the following page. During the first two years the work is confined mainly to the fundamental sciences, and the time of the student is largely spent in the laboratory. During the first year he studies anatomy, histology, embryology, neurology, chemistry, and physiology. In the second year the study of physiology is continued, and in addition the student takes up bacteriology, pathology, pharmacology, laboratory diagnosis, physical diagnosis, and hygiene. Throughout the first two years there is definite correlation between the clinical and the preclinical courses, and a regular schedule of lectures by clinical instructors is followed in the courses in anatomy, physiology, and biological chemistry, to give an understanding of the practical applications.

During the third and fourth years the time is devoted to the various clinical branches. In the dispensary the student examines the cases personally under the guidance of instructors and makes laboratory examinations for his own cases. Such examinations as the Wassermann reaction are made by the instructors, but the student has opportunity to repeat these and learn the technic.

Throughout the third year emphasis is laid on the acquisition of a thorough knowledge of clinical problems. There are didactic courses in surgery, medicine, pediatrics, obstetrics, urology, orthopaedics, and otolaryngology. In addition, the students attend clinics in each field and spend a large amount of time in dispensaries (dermatology, neurology, obstetrics, ophthalmology, orthopaedic surgery, otolaryngology, pediatrics, radiology, surgery, and urology). There is also a six-week clinical clerkship in medicine. Here the student spends on the average six hours daily in the laboratories and the wards of the Research and Educational Hospital, Cook County Hospital, and Presbyterian Hospital learning the fundamentals of diagnosis and treatment.

In the fourth year the emphasis is on the practical application of the fundamental concepts acquired throughout the preceding three years. In the dispensaries and wards, the student is given more responsibility although carefully supervised. The student has two six-week ward clerkships: obstetrics and gynecology, and pediatrics. There is a twelve-week clerkship in general surgery and in internal medicine. During the obstetrics service, students attend deliveries within the hospital and accompany the outpatient resident for home deliveries. Each student has a two-week service at the Intensive Treatment Center observing the latest methods of handling venereal diseases. There is a one-week clerkship at the Municipal Contagious Hospital. The remaining time is spent in dispensaries or divided among clinics and laboratories studying such topics as surgical anatomy and tropical medicine.

The examinations at the end of the second and fourth years are of a comprehensive nature and may be either written or oral, or both.

The fifth year consists of twelve months of interne service in a hospital ap-

proved by the University. During the fourth year the students apply to the hospitals in which they wish to serve as internes and, if successful, sign contracts for the service desired. Research work may be submitted for the hospital work of the fifth year.

Students are prohibited from doing work that interferes in any way with the fulfillment of the requirements of the curriculum. Unofficial clinical work may not be substituted for the requirements of the curriculum.

SUMMARY OF CLOCK HOURS IN THE COLLEGE OF MEDICINE First and Second Years

Subjects	First Quarter		Second Quarter		Third Quarter		Total
	Didactic	Laboratory	Didactic	Laboratory	Didactic	Laboratory	
FIRST YEAR							
Anatomy, including Histology, Embryology, and Neurology	58	141	64	160	58	132	613
Biological Chemistry	33	66	33	66	..	..	198
Physiology	..	..	..	..	44	66	110
Psychiatry	12	..	12	..	..	..	24
<i>Total</i>	103	207	109	226	102	198	945
SECOND YEAR							
Bacteriology	33	66	11	33	..	..	143
Hygiene	..	..	..	..	33	..	33
Medicine	..	..	..	..	11	..	11
Obstetrics	..	..	..	..	22	..	22
Pathology, General	..	..	48	108	44	99	299
Pathology, Clinical	..	..	24	48	22	44	138
Pharmacology	22	..	22	33	33	22	132
Physiology	44	33	44	57	..	..	178
Physical Diagnosis	11	22	..	..	..	22	55
Psychiatry	..	..	11	..	11	..	22
Surgery	..	..	..	..	11	..	11
<i>Total</i>	110	121	160	279	187	187	1,044

Third and Fourth Years

Subjects	Total Hours	
	Third Year	Fourth Year
Anatomy, Topographic	48	..
Anesthesia	12	(Included in Surgery)
Autopsies and Pathology	60	..
Criminology	20	..
Dermatology	56	24
Gynecology (including Obstetrics)	..	270
Hygiene and Public Health	36	..
Jurisprudence	12	..
Medical Sociology	12	..
Medicine (including Tropical Medicine)	318	482
Neurology and Neurological Surgery	24	48
Obstetrics	116	(Included in Gynecology)
Ophthalmology	32	..
Orthopaedics	112	(Included in Surgery)
Otolaryngology	60	..
Pediatrics	72	234
Psychiatry	12	30
Radiology	36	(Included in Medicine)
Stomatology	12	..
Surgery	216	480
Therapeutics	36	..
Urology	44	(Included in Surgery)
<i>Total</i>	1,346	1,568

For the *faculty* of the College of Medicine, see page 64; for *admission*, see pages 110 and 111; for *fees*, see page 120; for *scholarships*, see page 133; for *loan funds*, see page 136; for *college organizations*, see page 414; for *prizes*, see page 144.

Occupational Therapy

Occupational therapy is that branch of physical medicine which utilizes various physical and mental activities for remedial purposes. Graduation from an accredited course qualifies the therapist by examination for admission to the Registry maintained by the American Occupational Therapy Association. The course of study which was introduced at this university in 1943 meets the requirements of this profession's educational standards as determined by the American Medical Association's Council on Medical Education in Hospitals. Upon successful completion of this course, which consists of ten college semesters of didactic instruction and clinical experience, the student receives a Bachelor of Science degree.

Though the curriculum is administered by the College of Medicine, the student registers in the College of Liberal Arts and Sciences on the Urbana campus for the first six semesters, where he devotes his time to the study of basic cultural subjects, biological sciences including anatomy, physiology, kinesiology, and psychology, and technical subjects including arts and crafts and recreation.

An equivalent of four semesters of the program is taken on the Chicago campus and in affiliated hospitals. Instruction in the clinical subjects is given by the members of the faculty of the College of Medicine; additional instruction in training is offered in the principles and practices of occupational therapy, the social sciences, and group work activities. During the three semesters spent on this campus the student averages an eight-hour day in the teaching units of the Research and Educational Hospitals and in the College, dividing his time between study, lecture periods, and clinical experience. Two months of the fourth semester are spent in a tuberculosis sanatorium where the student devotes his full time to clinical experience; the remaining two months are spent in a state mental hospital.

Because of the concentrated program, students are not permitted to engage in work that interferes in any way with the fulfillment of the requirements of the curriculum.

Medical Technology

A curriculum in medical technology leading to the degree of Bachelor of Science in Medical Technology is offered in the College of Medicine. This course has been approved by the Council on Medical Education and Hospitals of the American Medical Association and meets the requirements for examination by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists.

The program of instruction covers twelve full months and includes routine clinical laboratory procedures, hematology, bacteriology, parasitology, serology, basal metabolism, blood and urine chemistry, and tissue technic; classroom and laboratory instruction in biological chemistry, bacteriology, and clinical pathology; and special lectures and conferences.

The number of students admitted each year is limited to eight. Students are chosen on the basis of their previous scholastic record. Preference is given to residents of the State of Illinois. Applications will be received at any time during the year. Choice of applicants is made on July 1. If the class is not filled at that time the remaining places are considered on September 1.

Requirements for Graduation

A candidate for any degree in the College of Medicine must show evidence of good moral character, pay all indebtedness to the University, obtain passing grades in all courses of the required curriculum, and have grades of "C" or better in at least three-fourths of the total hours taken in the College of Medicine and counted for the degree.

Bachelor of Science in Medicine.—May be awarded to students who have completed the first two years of work in the College of Medicine.

Certificate in Medicine or Bachelor of Medicine.—On the completion of four years in attendance at an approved medical school, of which at least the last year must have been at the University of Illinois, the completion of the prescribed curriculum, and

the passing of the comprehensive examinations required at the end of the fourth year, the student may be awarded a Certificate in Medicine, upon application, or the degree of Bachelor of Medicine. (For the duration of the war, such a student is eligible for the degree of Doctor of Medicine as stated in the following paragraph.)

Doctor of Medicine.—Awarded to students who have qualified for the Certificate in Medicine (see preceding paragraph) and who have completed satisfactorily an internship of not less than twelve months in a hospital approved by the University of Illinois, or a year of research work acceptable to the University. In 1941, by special action of the Board of Trustees of the University, the internship requirement was waived for the duration of the war, and the degree of Doctor of Medicine is now awarded instead of the Certificate of Medicine.

Bachelor of Science in Occupational Therapy.—Awarded on completion of a ten-semester curriculum, six semesters of which are taken on the Urbana campus and an equivalent of four on the Chicago campus and in affiliated hospitals. A minimum total of 180 quarter hours (120 semester hours) is required for graduation.

Bachelor of Science in Medical Technology.—Awarded on completion of the twelve-month curriculum in medical technology.

Special Courses for Physicians

The College of Medicine offers a number of special advanced courses for physicians, which are open to graduates of approved schools. Each course lasts one quarter, or sometimes a full year, and is designed to aid in meeting the requirements for specialization. The fee for each course is \$75 a quarter for residents of Illinois, or \$150 a quarter for nonresidents, plus laboratory and clinic fees. For courses offered for less than one quarter, the fees are determined by the fraction of a quarter covered by the course. Members of the staff of the University and of Cook County Hospital and Morgue are permitted to attend the lectures in these courses without paying the tuition fee. Laboratory and clinic fees are determined for each individual registration on the basis of the cost of the materials involved. These courses are not accepted by the Graduate School for advanced degrees, and no grades are given. Descriptions of the courses appear under the various departments.

Short refresher courses for practicing physicians have also been offered from time to time, usually in the summer, each consisting of one or two weeks of special instruction, for a fee of \$10.

Lectureships in Medicine

World War Memorial Lectureship.—The faculty, alumni, and students of the College of Medicine have established a fund to support a lectureship in commemoration of those who lost their lives in the first World War. At least one lecture is delivered annually by a prominent educator on a subject of general medical interest.

Gehrmann Lectureship.—In 1924, in accordance with the will of Mrs. Albertina Gehrmann, widow of Dr. Adolph Gehrmann, for many years Professor of Bacteriology and Hygiene in the College of Medicine, the sum of \$10,000 was given for the support of an annual lectureship in memory of Dr. Gehrmann.

Bacon Lectureship.—In 1927, when Dr. Charles S. Bacon was made Professor of Obstetrics, *Emeritus*, members of the faculty and friends contributed the sum of \$5,000 to found the Charles S. Bacon Lectureship in Obstetrics. The income from this fund is used for special lectures each year.

Sachs Residency.—In 1930 the Chicago Tuberculosis Institute established in the College of Medicine the Theodore B. Sachs Residency in the field of tuberculosis and allied diseases.

Hedblom Lectureship.—In 1938 the Phi Beta Pi medical fraternity contributed a fund to establish an annual lectureship in honor of Dr. Carl Hedblom, who until his death was Professor of Surgery and Head of the Department.

Davis Lectureship.—The inauguration of the D. J. Davis Lectureship on Medical History was held on October 15, 1943. These lectures are maintained by interest on the funds subscribed by friends and associates of Dr. Davis, Professor of Pathology and Dean of the College of Medicine, *Emeritus*, who served the University for thirty years.

COURSES OFFERED IN THE COLLEGE OF MEDICINE

NOTE: The following list of courses is in alphabetic order of departments. The courses offered in each department are listed numerically. In the description of each course the Roman numerals I, II, and III indicate the first, second, and third quarters, and the periods of time required each week apply to the whole quarter unless the number of weeks is stated. Courses not given in the current year are enclosed in brackets. Credit is calculated in clock hours except in courses for graduate students which show the units of credit in parenthesis.

A circular announcing courses to be offered in the coming year, and including other information for prospective students, may be obtained by addressing the Dean of the College of Medicine, 1853 West Polk Street, Chicago 12.

ANATOMY

Required Courses — First Year

1-4 HUMAN ANATOMY.—To insure greater correlation and unity in presentation of the subject matter, the following major divisions are merged into a single course extending continuously throughout three quarters. Credit toward graduation is not allowed for any one quarter separately. The total time, 612 hours (including final examinations), is apportioned approximately as follows: regional and systematic anatomy, 270 hours; histology, 142 hours; embryology (including histogenesis), 100 hours; neurology (including sense organs), 100 hours. One hour each week during the three quarters (33 hours total for the year) is set aside for introductory clinical demonstrations presented by selected members of the several clinical departments, and designed to illustrate the applications of anatomical knowledge in medical and surgical practice. Approximately three-fourths of the time of the course is given to laboratory work, and the remaining one-fourth to lectures, demonstrations, and quizzes.

Required Courses — Third Year

30. CLINICAL ANATOMY.—Redissection of the body, stressing the topography and relations of the various regions and organs, as displayed by incisions, window dissections, and transections; intimate correlation of subject matter with clinical conditions and procedure. One 4-hour period each week throughout one quarter. (Given each quarter to one-third of the class; one-third of each class section meets at Rush Medical College.)

Required Courses — Fourth Year

67. OBSTETRICAL AND GYNECOLOGICAL ANATOMY.—(For content of course, see page 438).

Elective Courses

50. MICROSCOPICAL TECHNIC.—Preparation of tissues for study; methods of maceration, decalcification, injection, corrosion, preservation, fixation, embedding, sectioning, staining, clearing, mounting, etc. One 2-hour period each week. I, II, and III. Registration limited.

52. COMPARATIVE NEUROLOGY.—A comparative study of the morphology of the central nervous system, particularly of those animals in the phylogenetic line leading to man; a consideration also of related problems in comparative embryology, physiology, and psychology in their bearing on clinical neurology. Two 1-hour periods each week during one quarter. I.

53. PREPARATIONS FOR ANATOMICAL MUSEUM.—The creation of special dissections, reconstructions, models, and demonstration specimens for the anatomical teaching collection, requiring skill, ingenuity, neatness, and accuracy in execution. Two 2-hour periods each week during any one quarter. Limited to two or three qualified students.

54. PHYSICAL ANTHROPOLOGY.—Phylogeny of human races; anthropometry of living and skeletal material; anthropogeography; racial physiology and pathology; growth of populations and racial distributions of modern man; social anthropology; racial psychology and eugenics. Two 2-hour periods each week. I.

[80. **DISSECTION.**—In this course opportunity is given for a complete redissection of the human body during any two successive quarters. The course can not be taken for credit, and is open only to students of the second to the fifth year, inclusive. The course provides for no formal instruction, but strict supervision is maintained to ensure the proper use of the material. Four students are assigned to a body. The department reserves the right to limit, when necessary, the total number of students taking the course. Every student wishing to enroll must apply personally to the head of the department before approval may be given. No student will be accepted unless he can give to this work at least 8 hours per week throughout two quarters. The fee for each student is \$25. Due to the present shortage of human material for dissection, this course is suspended indefinitely.]

SEMINAR.—Critical reviews of recent anatomical literature; preparation of bibliographies and of scientific papers for publication; presentation and discussion of the results of investigations.

Special Courses for Physicians

90. **DISSECTION.**—This course for physicians and surgeons provides for complete or partial dissection of the human cadaver. Two students will be assigned to each cadaver. The number of applicants taken is limited, depending on the material and the laboratory space available. Special instruction is given only if four or more persons are taking the course at the same time, and if they arrange for such instruction. For fees, see page 429. *Note:* Physicians and surgeons who are members of the staff of the College of Medicine have the privilege of dissection in the Department of Anatomy after payment of a fee covering the cost of the material.

Courses for Graduate Students

101. **ADVANCED ANATOMY.**—The work may take the direction either of macroscopic or of microscopic anatomy, or of both, according to the student's major problem: in macroscopic anatomy, a detailed redissection of the human body, or any of its parts; in microscopic anatomy (embryology, cytology, histology, etc.), a consideration of morphological changes in the organism which are directly correlated with normal processes, such as reproduction, differentiation, nutrition, growth, variation, regulation, regeneration, activity, secretion, rest, fatigue, senility. Course designed for students choosing anatomy as a minor and for students preparing for individual research in anatomy. (1 to 2 units).

103. **INDIVIDUAL RESEARCH.**—In embryology, cytology and histology, neurology, anthropology and biometrics, experimental morphology, functional and allied anatomy. (1 to 3 units).

BACTERIOLOGY AND PUBLIC HEALTH

NOTE: The course in bacteriology is offered at the beginning of the second year. Instruction is based upon a study of fundamental principles involving morphology, physiology, and distribution of bacteria and related organisms. Following a brief study of representative members of nonpathogenic and useful species, the student is introduced to harmful bacteria and the nature of the diseases which they produce together with immunological and serological considerations. Pathogenic fungi, protozoa, and viruses are included in this beginning course, including those species responsible for tropical diseases. Especial emphasis is placed on the ubiquitous nature of bacteria so that the student can more readily comprehend epidemiological problems and the host-parasite relationship in subsequent courses. A study of preventive medicine and hygiene follows in natural sequence and is partly correlated with the beginning course. Practical aspects of sanitary science and the control of communicable diseases are emphasized as they are related to public health practice. During the third year, the student is introduced to the field of industrial hygiene which is taught as a separate entity. The public health course for juniors conveys to the student the purpose and functions of the Illinois Department of Public Health. Especial emphasis is placed on the relationship between the practicing physician and health departments.

Required Courses — Second Year

1. GENERAL BACTERIOLOGY AND PROTOZOOLOGY.—Lectures, demonstrations, and laboratory. Nine hours each week, I; four hours each week, II.
2. PREVENTIVE MEDICINE.—General principles of prevention of disease. Epidemiology. Three hours each week. III.

Required Courses — Third Year

11. INDUSTRIAL HYGIENE.—Industrial and occupational diseases. One hour each week. III.
50. PUBLIC HEALTH.—Functions of departments of health and their relationship to practicing physicians. One hour each week. I and II.

Elective Courses

(Open only to properly qualified students. Time to be arranged.)

71. ADVANCED BACTERIOLOGY AND RESEARCH.—
 72. INDUSTRIAL HYGIENE.—(Minimum ten students).
 73. INTRODUCTORY COURSE IN PUBLIC HEALTH.—General survey of the field of public health practice, including vital statistics, epidemiology, sanitary science, general and specific methods of controlling communicable diseases, and a study of public health practice, duties, requirements, and functions of medical public health officers. Thirty-two lectures. Elective for third-year and fourth-year students. II.
 74. ADVANCED WORK IN PUBLIC HEALTH.—
 75. BLOOD BANKS AND BLOOD TRANSFUSION TECHNIC.—Basis for blood groups, accessory antigenic factors, laboratory tests for compatibility and sources of errors, selection of donors, methods of blood and plasma preservation, maintenance of a blood and plasma bank, and medico-legal aspects. Lectures, demonstrations, and laboratory work. Two hours each week. II.
- SEMINAR AND LITERATURE REVIEW.—Regular weekly meetings are held to discuss timely subject material and recent research contributions. Each graduate student is required to present one seminar per quarter. Critical literature reviews are conducted by senior staff members. Attendance is required of all graduate students.

Courses for Graduate Students

101. ADVANCED BACTERIOLOGY.—Lectures, discussions, and necessary laboratory work pertaining to special subjects involving physiology and pathogenicity of microorganisms. (1 unit).
102. SEMINAR IN BACTERIOLOGY.—Presentation of timely subject material and individual research contributions. Each student is assigned a subject for presentation during the quarter. Required of all graduate students. (½ unit).
103. RESEARCH IN BACTERIOLOGY.—(1 to 3 units).
104. IMMUNOLOGY.—Lectures and laboratory work on general principles of serological reactions; preparation of biologicals; demonstration of immunity in animals; the allergic response; forensic serological tests; practical diagnostic methods based on serological and cutaneous reactions. (Minimum eight students). (1 unit).
105. VIRUSES.—Lectures and laboratory work on the nature of ultramicroscopic organisms; their physical and chemical characteristics; methods of isolating, propagating, and indentifying them in the laboratory; preparation and testing of virus vaccines. (Minimum eight students). (1 unit).
106. CYTOLOGY AND METABOLISM OF MICROORGANISMS.—Bacterial structure as it is related to function and biochemical activity of the cell; influence of germicides and antibiotic substances on morphology and metabolism; nature of bacterial respirations. Lectures and necessary laboratory demonstrations. (1 unit).

BIOLOGICAL CHEMISTRY**Required Courses — First Year**

1. CHEMISTRY OF CELL CONSTITUENTS.—Physical and chemical properties of solutions; chemistry of carbohydrates, lipides, and proteins; enzymes and digestion. Lectures, demonstrations, conferences, and laboratory. Nine hours each week. I.

2. METABOLISM.—Chemistry of bile, blood, milk, and tissues; chemistry of urine (qualitative and quantitative). Lectures, demonstrations, conferences, and laboratory. Nine hours each week. II. (*Note:* Approximately eight hours of the lectures will be delivered to correlate the work in Biological Chemistry with Medicine).
RESEARCH.—The laboratories are open to persons with the requisite training for the conduct of original investigations under direction of members of the staff.

Courses for Graduate Students

101. ADVANCED BIOLOGICAL CHEMISTRY.—Biochemical methods of research, biological colloids, enzyme action, and metabolism. (1 or 2 units).
102. SPECIAL TOPICS IN BIOCHEMISTRY.—Blood analysis; vitamin studies; methods and clinical significance. (1 unit).
103. PHYSICAL AND COLLOID CHEMISTRY.—Elements of physical and colloid chemistry and their application to biology and medicine, with emphasis on the chemistry of proteins. (1 unit).
104. PROTEINS.—Methods of preparation of pure proteins and study of their immunological and chemical properties. (1 unit).
105. BIOCHEMICAL SEMINAR.—The members of the teaching staff, graduate students, and others working in the field of biochemistry meet weekly to present and discuss the results of their own investigations, as well as to summarize some of the important advances in the field. (½ unit).
106. BIOCHEMICAL RESEARCH.—(1 or 2 units).

CRIMINOLOGY, SOCIAL HYGIENE, AND MEDICAL JURISPRUDENCE

NOTE: The Department concerns itself with three distinct fields. The first of these, Criminology, encompasses the study of the personality of the offender against the law, with special reference to the juvenile delinquent. The second field, Social Hygiene, is primarily represented in a course in Medical Sociology. The third, Medical Jurisprudence, is presented not only as a separate and distinct course, but together with the first two is a part of the whole.

The Department concerns itself also with the clinical and administrative problems of juvenile and adult criminality, the legal implications of medicine and medical ethics, the sociological problems which surround medical cases and which are a part of the physician's responsibility to the family and to the community.

Required Courses — Third Year

- 10a. CLINICAL DESCRIPTIVE PSYCHIATRY.—Two hours each week. I, II, and III.
10b. CRIMINOLOGY.—Study of the personality of offenders against the law, with special reference to the aspects of crime. One hour each week. II.

Required Courses — Fourth Year

50. MEDICAL JURISPRUDENCE.—One hour each week for twelve weeks. I.
55. MEDICAL SOCIOLOGY.—General outline of social services which form a part of the general practice of medicine. One hour each week for twelve weeks. I or II.

Elective Courses — Fourth Year

- [72a. JUVENILE DELINQUENCY.—Historical discussion of the theories of delinquency and a consideration of the contemporary diagnostic, therapeutic, and administrative factors. One hour each week for six weeks. I.]
[72b. ADULT DELINQUENCY.—Individualization in treatment of adult offenders. A study of personality and the determinants of deviations in behavior with respect to the relationships within the situation of the individual. Synthesis is attempted through a system of classification according to personality type, etiology, prognosis, and the indicated therapy. One hour each week. I.]
[74. HOSPITAL ORGANIZATION AND ADMINISTRATION.—One hour each week for six weeks. I.]
[75. INTRODUCTION TO PUBLIC WELFARE ADMINISTRATION.—One hour each week for six weeks. I.]

Special Courses for Physicians

90. LECTURES AND CONFERENCES.—The treatment of behavior problems in children may be a function of the pediatrician and the general practitioner. This course is designed to meet the needs of the physician in the recognition and treatment of such problems. The course will consist of an organized program of case presentations followed by discussions dealing with behavior disorders as a symptom of organic disease, the recognition and management of mental deficiency, problems of habit training (bed-wetting, anorexia, etc.), behavior disorders due to unhealthy parent-child relationships, and delinquency. Eight evening meetings. Hours to be arranged. For fees, see page 429.
- 90a. CLINICAL COURSE.—Analysis and treatment of behavior problems in children under supervision in the clinic of the Institute for Juvenile Research. *Prerequisite or concurrent:* Criminology, Social Hygiene, and Medical Jurisprudence 90. Duration, four months. Six hours weekly to be arranged. For fees, see page 429.

Courses for Graduate Students

NOTE: Training in clinical psychology is provided by courses offered at the Institute for Juvenile Research in Chicago. Students who have pursued requisite graduate courses in the Department of Psychology at Urbana may do part of their work at the Institute for Juvenile Research under the following conditions: The prerequisite to these courses is recommendation by the Department of Psychology and one year of graduate work with a major in psychology, or, in case of especially qualified students who have majored in psychology as undergraduates, one semester of graduate work. The minimum period of attendance at the Institute necessary for the Master of Arts degree is six months, and for the Doctor of Philosophy degree, one academic year. Recommended minors are education and sociology.

101. RESEARCH IN JUVENILE BEHAVIOR.—(1 to 3 units).
 102. ADVANCED WORK IN JUVENILE BEHAVIOR.—(1 to 3 units).
 103. SPECIAL ABILITIES AND DISABILITIES.—(1 or 2 units).
 104. PSYCHOLOGICAL TESTS.—(1 or 2 units).
 105. PSYCHOLOGY OF BEHAVIOR PROBLEMS.—(1 or 2 units).
 106. FIELD WORK IN CRIMINOLOGY.—(1 to 3 units).

DERMATOLOGY

Required Courses — Third Year

10. DIDACTIC LECTURES ON DERMATOLOGY AND SYPHILIS.—Lectures, lantern slides, and demonstrations. One hour each week. Continuous through I, II, and III.
 31. DISPENSARY.—Five 2-hour periods for two weeks. I, II, and III.

Required Courses — Fourth Year

50. CLINIC.—Case demonstrations with patients from Research and Educational and Cook County Hospitals. One hour each week. Continuous through I, II, and III.

Courses for Graduate Students

101. RESEARCH IN DERMATOLOGY.—(1 to 3 units).

MEDICAL ILLUSTRATION

Elective Courses — Third and Fourth Years

50. MEDICAL ILLUSTRATION.—Beginners' course designed for medical students and graduates who desire to improve their ability to sketch and make graphic records in their practice and research. The work consists in drawing medical subjects of various kinds from life, making of graphs and charts, lettering, and perspective, and use of crayon, pen and ink, wash and water color. Principles of medical photography and making of lantern slides, etc. Two 2-hour periods each week. I, II, and III. Limited to five students.

Special Courses for Non-Medical Students

90. **MEDICAL ILLUSTRATION.**—A two-year course in illustration as applied to the broad field of medical education, with students working in the Illustration Studios with the staff artists and in the Department of Anatomy, is offered to candidates presenting evidence of thorough training in art and a sound scholastic record, including two or more years of college with emphasis on work in premedical subjects. The first year of study includes: (a) a course in gross anatomy consisting of lectures and dissection of an entire human body; (b) drawing in detail of dissections, bones, and organs of the body prepared in conjunction with anatomy studies; (c) special consideration to accurate observation and interpretation of technics and media of illustration such as wash drawing, crayon, pen and ink, and water colors; (d) lettering and the preparation of charts and graphs as applied to medical subjects. The second year includes practical applications of illustration in the widest sense to publishing and medical education. Emphasis is placed on the theories of visual instruction and the growing responsibility of the illustrator for the improvement of medical education through all types of graphic media by means of (a) illustrative projects in anatomy, surgery, and pathology, working from autopsies, operating room, and dissection material; (b) opportunity to participate in the planning, design, and preparation of lay and scientific exhibit material; (c) adaptation of various materials to three-dimensional representation of scientific subjects. Technics for working clays, waxes, plaster, plastics, moulages, wood, and metals are among those studied. For those who wish to learn medical photography opportunity for study will be arranged in the photographic studio. Except in unusual cases application for admission must be made in person to the head of the department. The number of students which may be accepted in any one year is limited to five. The first half-year is a probation period for all students. Hours: 9:00 a.m. to 5:00 p.m. Monday to Friday inclusive. Fee for each quarter: residents, \$72.83; non-residents, \$81.83.

MEDICINE

NOTE: The student is introduced to medicine through two correlation courses, which are essentially extensions of those begun in the pre-clinical years. Thus in one the physiological and biochemical laws of nutrition are applied to patients with various diseases; and in the other the pathological changes in the morphology of the blood are studied.

In the third year, through the individual study and examination of patients in the hospital wards, the student learns the elements of physical diagnosis and the art of history-taking. He also learns to recognize the physical findings characteristic of various diseases. In the fourth year he becomes a clinical clerk in the hospital. In this capacity he studies his patients and assumes increasing responsibility for their care. In the outpatient clinic the patients come to him for consultation regarding their problems.

These basic approaches to medicine are amplified and extended by didactic quiz courses, by lecture and demonstration clinics, and by numerous small clinics covering completely and authoritatively the field of medicine.

Required Courses — Second Year

1. **PHYSICAL DIAGNOSIS.**—Practical drill on normal subjects. Small sections. Instructors in surgery cooperate with the Department of Medicine. Three hours each week. I, II, and III.
2. **CLINIC.**—Lectures and conferences with special reference to diseases of metabolism. one hour each week. III.

Required Courses — Third Year

10. **SYSTEMATIC STUDY OF IMPORTANT DISEASES.**—Lecture and seminar. One 1-hour period each week. Continuous through I, II, and III.
11. **CLINIC.**—Selected topics. Research and Educational Hospitals. One hour each week. Continuous through I, II, and III.

12. CLINIC.—Selected topics.
 (a) Cook County Hospital and Rush Medical College. One hour each week. Continuous through I, II, and III.
 (b) Rush Medical College. One-third of class. Two hours each week. I, II, and III.
13. CLINIC.—Allergy. Research and Educational Hospitals. One hour each week. One-third of class. Continuous through I, II, and III.
14. BEDSIDE TEACHING.—History-taking and physical diagnosis. Cook County and Research and Educational Hospitals and Outpatient Department of Presbyterian Hospital. Students are directed in their work by the associates and attending men of these hospitals. At the close of the morning the students gather in small groups and present before these groups cases they have studied. Eighteen hours each week for six weeks. I, II, and III.
15. CLINICAL LABORATORY.—Research and Educational Hospitals. One-sixth of class. Four hours each week for six weeks. I, II, and III.
16. CLINIC.—Hematology. Research and Educational Hospitals. One-sixth of class. Four hours each week for six weeks. I, II, and III.
17. CLINIC.—Cardiology. Research and Educational and Cook County Hospitals. One-sixth of class. One 2-hour period each week for six weeks. I, II, and III.

Required Courses — Fourth Year

50. CLINIC.—
 (a) Selected topics with special attention to differential diagnosis. Research and Educational Hospitals. One hour each week. Continuous through I and II.
 (b) Aviation medicine. Medicine and cooperating departments. III.
- [51. CLINIC.—Selected topics with especial attention to differential diagnosis. Cook County Hospital. One hour each week. Continuous through I, II, and III.]
52. CLINIC.—Chest and respiratory diseases. Research and Educational and Cook County Hospitals. One-sixth of class. One 2-hour period each week for six weeks. I, II, and III.
54. CLINIC.—Topical medicine. Research and Educational Hospitals. One hour each week. I.
55. TROPICAL MEDICINE LABORATORY.—Research and Educational Hospitals. One-third of class, one 3-hour period each week for twelve weeks. I, II, and III.
56. CLINIC.—Therapeutics. Research and Educational Hospitals. One 1-hour period. I, II, and III.
57. ADMITTING CLINIC.—Research and Educational Hospitals. One week. Eleven 2-hour periods.
58. DISPENSARY.—Research and Educational Hospitals. Four weeks. Fifteen hours a week. I, II, and III.
59. CLERKSHIPS.—Presbyterian, Cook County, and Research and Educational Hospitals. Thirty-six hours a week for six weeks. I, II, and III.
60. MEDICAL SEMINAR.—Research and Educational Hospitals. One hour each week for twelve weeks. I, II, and III. Each student attends two quarters.

Courses for Graduate Students

NOTE: Registration for investigative work is open to qualified students who register for one unit of postgraduate clinical instruction.

101. RESEARCH IN MEDICINE.—(1 to 3 units).

NEUROLOGY AND NEUROLOGICAL SURGERY

Required Courses — Third Year

10. FUNDAMENTALS OF NEUROLOGY.—A correlation of the anatomy, physiology, pathology, and clinical examination of the nervous system. One hour each week. I.
11. NEUROLOGY CLINIC.—Systematic lectures and clinical demonstrations of the principal diseases of the nervous system. One hour each week. II.

Required Courses — Fourth Year

50. **NEUROLOGY CLINIC.**—Lectures and demonstrations of clinical cases. One hour each week. I and II.
52. **NEUROLOGICAL SURVEY.**—Lectures and demonstrations of neurosurgical problems. Twelve weeks for each third of the class. One 2-hour period each week. I, II, and III.
53. **DISPENSARY.**—Six 2-hour periods each week. Two weeks for each sixteenth of the class. I, II, and III.

Special Courses for Physicians

90. **POSTGRADUATE NEUROPATHOLOGY.**—This course is intended as an introduction to the study of neuropathology for neurologists, psychiatrists, and neuro-surgeons who wish to acquire a knowledge of this field as a basis for their clinical work. Two hours of lecture-demonstration and four hours laboratory study weekly for six weeks. Periods of instruction to be arranged for in groups. For fees, see page 429.

Courses for Graduate Students

101. **RESEARCH IN NEUROLOGY, NEUROLOGICAL SURGERY, AND NEUROPATHOLOGY.**—(I to 3 units).

OBSTETRICS AND GYNECOLOGY

NOTE: The work of the obstetrical division is aimed to give the student a practical training in the fundamentals of obstetric practice. In the third year he covers systematically the entire subject in a didactic course supplemented by examination of patients in the dispensary and wards. In the fourth year he is thoroughly drilled in prenatal care, birthroom and newborn nursery methods. He assists at normal deliveries and is taught to give ether anesthesia to obstetrical cases. Complicated cases are presented clinically, and operations are demonstrated on the manikin and on living patients. Work in the outpatient service and in Research and Educational Hospital is supplemented by ward walks and demonstration of cases in the Cook County Hospital. Clerkships are given at Presbyterian Hospital, Research and Educational Hospital, and Cook County Hospital, including ward rounds, dispensary service, and clinical conferences.

OBSTETRICS**Required Courses — Third Year**

10. **PHYSIOLOGY AND PATHOLOGY OF PREGNANCY AND LABOR AND THE PUERPERIUM.**—
 - (a) Seminar and demonstration. One 1-hour period each week. I, II, and III.
 - (b) Demonstration clinic. One hour twice a week. Patients from the Research and Educational Hospital are presented and studied by the junior class. The cases are selected to illustrate the subject matter being presented in part (a). I, II, and III.
12. **DISPENSARY OUT-CLINIC.**—Ten 2-hour periods each week for two weeks. I, II, and III.
13. **WARD WALK.**—Six 2-hour periods for two weeks.
14. **COOK COUNTY CLERKSHIP.**—Each third-year student spends a twenty-four hour period on duty in the obstetrical ward in Cook County Hospital, observing all cases delivered during that time. Students see on the average ten deliveries.

Required Courses — Fourth Year

50. **MANIKIN.**—Obstetrical operations demonstrated and opportunity afforded to do the operation on the manikin under supervision and to become thoroughly familiar with the instruments and technic of such operations. Small groups and individual instruction. One 2-hour period each week for six weeks. I, II, and III.
51. **CLINIC.**—Demonstration of cases. Research and Educational Hospital. One hour each week. I, II, and III.
52. **CLERKSHIP.**—During the fourth year, six weeks of full-time clerkships are required. During two of these weeks students are housed in a group at the Research and Educational Hospital and are on call night and day. Two students are assigned to each case and are on duty from the time labor starts until the

patient is delivered. They are required to keep records of the labors and the post-partum visits. They are occupied in the obstetrical ward of the hospital when not attending outpatient cases, and attend gynecological conferences and operations when practicable.

GYNECOLOGY

Required Courses — Fourth Year

60. SEMINAR.—Conferences in groups of 20 students throughout the year. An orderly review of a standard textbook is undertaken and the assignments discussed. I, II, and III.
62. CLINIC.—Dry clinic. Various subjects such as carcinoma, fibroids, and birth injuries are covered and illustrative cases are presented. Diagnosis and therapy are discussed. Cook County Hospital. One and a half hours each week. I, II, and III.
63. DISPENSARY.—Small groups instructed in history-taking and physical examinations; ward rounds in the mornings and dispensary in the afternoons. One 2-hour period five days a week for two weeks. I, II, and III.
64. SPECIAL CLINICS AND WARD ROUNDS.—Venereal, endocrine, pre-cancer, carcinoma, and sterility clinics. Two hours each week for two weeks.
66. GYNECOLOGICAL AND OBSTETRICAL PATHOLOGY.—Same as Pathology 66. In cooperation with the Department of Pathology, gross and microscopic pathological material is presented for study and discussion. Clinical pathological correlations are stressed. On 2-hour period each week for six weeks. I, II, and III.
67. OBSTETRICAL AND GYNECOLOGICAL ANATOMY.—Discussion with groups of 30 students reviewing the fundamental anatomy of breast, uterus, ovary, kidney, ureter, perineum, placenta, and fetus as related to the problems of clinical obstetrics. Patients are used for demonstration and one session is spent in the anatomical department where special dissections of these tissues are demonstrated. The students are required to make drawings, and turn in drawings to scale, of this anatomical material. I, II, and III.
68. OBSTETRICAL AND GYNECOLOGICAL PHYSIOLOGY.—Normal pregnant women and women in labor and in the puerperium are presented, and the physiology of pregnancy, labor, the puerperium, lactation, and the newborn is discussed. Following a one-hour conference the students have an opportunity to observe and check the physiological findings in the wards and nurseries of the department.
69. COOK COUNTY HOSPITAL CLERKSHIP.—Ten students daily from 9 a.m. to 4 p.m. for two weeks. They attend ward walks, write histories, examine patients, and are present at five 2-hour operative clinics. Two 2-hour periods per week are spent on obstetrical work. Particular stress is laid on the demonstration and examination of puerperal sepsis and infected abortion cases.

Special Courses for Physicians

91. REFRESHER COURSE FOR PHYSICIANS.—
 - (a) A two-week course limited to four physicians. An informal course consisting of participation in departmental lectures, demonstrations, ward walks, and clinics, with opportunity to witness deliveries both in the hospital and in the home. This may be supplemented with similar work in the Department of Pediatrics if desired. The facilities of the Cook County Hospital, Presbyterian Hospital, and Research and Educational Hospital are used for this work. This course may be started any Monday morning.
 - (b) One-week course offered in conjunction with the Illinois State Department of Public Health at the Research and Educational Hospital. Limited to practitioners of the State of Illinois. The course consists of formal lectures, clinical conferences, round-table discussions, manikin demonstrations, ward walks, and outpatient clinics on prenatal care. The staff of the Research and Educational Hospital plus invited lecturers from Northwestern University, Loyola University, and the University of Chicago give the course. (This course is offered during the summer and will be announced in the State Medical Journal.) Registration fee \$10.

Courses for Graduate Students

101. RESEARCH IN OBSTETRICS AND GYNECOLOGY.—(1 to 3 units).

OPHTHALMOLOGY

Required Courses — Third Year

51. CLINIC AND PRACTICE.—Includes normal and pathological anatomy of the eye, practice in the use of ophthalmoscope, perimeter, focal light and test charts, and study of eye diseases which the general practitioner most frequently encounters. Five 2-hour periods each week for three weeks. I, II, and III.
52. DIDACTIC OPHTHALMOLOGY.—Illustrated lectures and quizzes. One hour each week. I, II, and III.

Special Courses for Physicians

90. CLINICAL COURSE.—Designed for those who wish to take up ophthalmology as a specialty. Only one process is studied at a time. Processes taught are: (a) determination of central visual acuity, neutralization of lenses, retinoscopy, refraction (with cycloplegia and without), tonometry, determination of degrees of strabismus or paralysis, types of discs (Elschnig's classification); (b) measurements of disc level, perimetry, objective findings in external and fundus diseases, case-history writing and diagnosis, prognosis, and treatment of a given case as a whole. This course extends over three periods of three months each, and no applicant is accepted for registration for less than the full nine months. Hours: 9:00 a.m. to 12:00 m., six days a week. Registration November 1. Classes limited to five students. Candidates under 35 years of age are given preference. For fees, see page 429.
91. PATHOLOGY OF THE EYE.—Four months. Hours to be arranged. I, II, or III. For fees, see page 429.

Courses for Graduate Students

101. RESEARCH IN OPHTHALMOLOGY.—(1 to 3 units).

ORTHOPAEDIC SURGERY

Required Courses — Third Year

10. PRINCIPLES OF ORTHOPAEDIC SURGERY.—Recitation and discussion. One hour each week. I, II, and III. Each student attends one quarter.
11. DISPENSARY.—Gives opportunity for students to question and examine numerous orthopaedic cases, including fractures and bone tumors, procuring histories, making diagnoses, suggesting indications, and giving minor dispensary treatment in the orthopaedic dispensary and in physiotherapy-hydrotherapy departments under the supervision and aid of the instructors. Two hours daily for two weeks. I, II, and III.
12. CLINICAL ORTHOPAEDIC SURGERY WITH DEMONSTRATIONS.—Consideration of orthopaedic problems, including diagnosis and operative treatment of fractures and bone tumors. One hour each week. I, II, and III.
13. CLERKSHIP.—Illinois Surgical Institute for Children. Observation and study of clinical cases. Two weeks, four hours daily.

Required Courses — Fourth Year

50. ADVANCED CLINICAL ORTHOPAEDIC SURGERY.—Illustration of major orthopaedic problems, their diagnosis and therapy through the presentation of representative cases. Two hours each week for six weeks.

Courses for Graduate Students

101. RESEARCH IN ORTHOPAEDIC SURGERY.—(1 to 3 units).

OTOLARYNGOLOGY

NOTE: This department is divided into the following divisions: (a) Otolaryngology, (b) Bronchoesophagology, (c) Speech and Hearing Rehabilitation, (d) Maxillofacial Surgery. The required courses in these divisions are so arranged that didactic instruction precedes practical application of the specialty, emphasizing its relation to general medicine. During the third year the student is given instruction in the basic principles of the specialty by means of formal lectures, augmented by informal conferences in

small groups, and through opportunities to apply the principles of diagnosis and treatment. This is carried on in the outpatient department by means of clinics designed to present the more common otolaryngologic affections, and in a dispensary service where the student is taught individually and directly by contact with patients.

Required Courses — Third Year

10. THE EAR.—Surgical anatomy, physiology, applied pathology, and treatment. One hour each week. I.
11. THE NOSE AND PARANASAL SINUSES.—Surgical anatomy, physiology, pathology, and treatment. One hour each week. II.
12. THE PHARYNX AND LARYNX.—Surgical anatomy, physiology, applied pathology, and treatment. One hour each week. III.
13. DISPENSARY.—Research and Educational Hospital. Six two-hour periods during two weeks. I, II, and III.

Required Courses — Fourth Year

50. CLINICAL OTOLARYNGOLOGY AND REHABILITATION.—Interesting cases are presented to groups of students who serve as clerks to illustrate practical points of diagnosis. Indications for treatment, operation, and rehabilitation are discussed. The Research and Educational Hospital, Illinois Eye and Ear Infirmary, and the clinics of the Division of Services for Crippled Children. One two-hour period each week.
 - (a) SEMINAR IN OTOLARYNGOLOGY.—Presentation and discussion of clinical cases; critical review of current research and literature. III.
 - (b) OTOLARYNGOLOGIC PATHOLOGY.—Presentation and study of histology and current pathologic material. I.
 - (c) SPEECH AND HEARING DISORDERS.—A consideration of the major organic and functional disorders of speech and audition together with a survey of modern rehabilitative procedures. II.

Special Courses for Physicians

The following courses may be registered for individually or in groups, the time being arranged with the instructor. Additional hours may be scheduled with consent of the Head of the Department. Applicants must be graduates of a Class A medical school and present acceptable credentials. For fees, see page 429.

90. POSTGRADUATE BASIC COURSE.—Provides a full-time basic course of instruction for those intending to prepare for special practice. Usually nine months but may be extended to twelve by the addition of a three-month period of clinical work. 9:00 a.m. to 4:00 p.m. Registration by the third Monday in September.
 - (a) PRINCIPLES OF OTOLARYNGOLOGY.—Lectures, demonstration, cadaver dissection, surgical anatomy, animal and cadaver surgery, physiology, laboratory and photographic technic, histology and pathology, and seminar. Duration: three months.
 - (b) PRACTICE OF OTOLARYNGOLOGY.—Further emphasis on morphology, physiology; study of pathological diagnosis and treatment in the outpatient department, clinics, and bedside. Duration: four months.
 - (c) BRONCHESOPHAGOLOGY.—Consists of lectures, animal and cadaver work, and actual experience in the bronchoscopic operating room and outpatient clinics. Includes indirect and direct laryngoscopy, bronchoscopy, and esophagoscopy. May also be scheduled separately by accredited specialists. Duration: didactic and laboratory, two weeks.
 - (d) MAXILLOFACIAL SURGERY.—Preparation of moulages, prosthetics, cadaver demonstrations, surgical clinics, and lectures.
 - (e) SPEECH AND HEARING REHABILITATION.—May be taken by graduate medical and non-medical specialists. Psychology of the handicapped, methods and equipment for speech and hearing rehabilitation, clinical work.
91. REFRESHER COURSES.—Brief review courses of one to three weeks in length covering the more important subjects of the specialty. Largely didactic. Held several times during the academic year as determined by need.
92. CLINICAL SPECIALIST COURSE.—Designed to present standardized methods of diagnosis, the problems of treatment based on pathological findings on cases in the ambulatory clinics of the Research and Educational Hospital and the Illinois

Eye and Ear Infirmary. Taking of case histories, methods of examination, special anatomy, gross pathology, and instructions in treatment and surgery are stressed. The work is done independently under supervision and direction. An attempt is made to assist specialists with some of the more difficult aspects of their own clinical work through practical demonstrations. The course extends over a period of three months and is given three times a year.

93. **EXTENSION COURSES.**—For physicians and non-medical specialists engaged in general practice and teaching. Review of methods of examination diagnosis and the relation of the specialty to general medicine and special education. Speech and hearing rehabilitation. Instruction periods are arranged for groups.

Courses for Non-Medical Students

Courses in clinical speech, special education, and hearing conservation and therapy are provided for advanced students who wish to extend their preparation in an environment providing rich clinical facilities in areas related to their specialty. The work is closely integrated with the services of the Departments of Pediatrics, Orthopaedics, Orthodontics, Prosthetic Dentistry, and Neurology, as well as Otolaryngology. Emphasis is upon clinical applications through regular diagnostic and therapeutic speech and hearing clinics in the Research and Educational Hospital, Illinois Eye and Ear Infirmary, College of Dentistry, Illinois Surgical Institute for Children, and the clinics of the Division of Services for Crippled Children.

Upon proper admission to the Graduate School a program of study may be planned leading to the degrees of M.S. and Ph.D. in clinical speech and hearing. The pattern may include course work, research, and practical experience, to be derived from approved selections from curricula in the College of Medicine, the College of Dentistry, and the Graduate School. Courses are scheduled in response to need.

160. **SPEECH PATHOLOGY.**—A detailed consideration of the major organic and functional speech disorders. Two hours each week.
162. **SPEECH THERAPY.**—Diagnosis and treatment. Relations to collateral medical and dental areas are emphasized. Two hours each week.
164. **ELECTRO-AUDIOMETRY.**—Psycho-acoustics, quantification and residual hearing by electronic methods; clinical evaluation and interpretation of results. Two hours each week.
166. **HEARING AID SELECTION AND EVALUATION, AUDITORY TRAINING.**—A study of the electro-acoustic characteristics of current types of hearing aids: methods of evaluating their performance on the patient, and the conservation and retraining of residual hearing. Two hours each week.
168. **SPEECH (LIP) READING.**—Methods and materials employed in speech reading instruction. Two hours each week.
170. **SPEECH CLINIC.**—Case demonstration with patients in the Research and Educational Hospital, Illinois Eye and Ear Infirmary, Illinois Surgical Institute for Children, College of Dentistry, clinics of the Division of Services for Crippled Children. Four hours each week.
172. **HEARING CLINIC.**—Case demonstration with patients in the Research and Educational Hospital, Illinois Eye and Ear Infirmary, Illinois Surgical Institute for Children, clinics of the Division of Services for Crippled Children. Four hours each week.

Courses for Graduate Students

101. **RESEARCH IN LARYNGOLOGY, RHINOLOGY, OTOTOLOGY, AND REHABILITATION.**—Special scientific work for those desiring to do productive research in any area of the specialty, or to prepare for teaching. (1 to 3 units).
102. **RESEARCH IN SPEECH AND HEARING.**—Opportunity to do productive research in the areas of speech pathology, speech and hearing therapy, and the applications of electro-acoustics to clinical problems. (1 to 3 units).

PATHOLOGY

NOTE: Following the courses in anatomy and physiology of the first year, the student is prepared to undertake studies on the nature and causation of disease. Bacteriology is given in the quarter preceding pathology. General and special pathology and clinical pathology are given during the second and third quarters of the second year. A con-

tinuation course in special pathology with emphasis on autopsies and clinical pathological correlations is conducted in the third year. Courses in surgical and gynecological and obstetrical pathology in the fourth year conclude the formal instruction conducted by this department.

Required Courses — Second Year

1. GENERAL AND SPECIAL PATHOLOGY.—The basic principles of pathologic processes, including tissue injury and repair, inflammation, circulatory disturbances, retrograde processes and tissue responses to specific infectious agents and neoplasms, are considered in the first part of this course. In the latter part of the course, the disease processes affecting each organ and anatomic system are considered in greater detail. Lectures, demonstrations, quiz conferences, and laboratory. Thirteen hours each week. II and III.
2. CLINICAL PATHOLOGY.—Chemical, bacteriologic, serologic, and microscopic examination of the gastrointestinal contents, urine, blood, cerebro-spinal fluid, saliva, sputum, transudates, and exudates. Metabolism and the functional tests of liver, kidneys, etc., with emphasis on technic. Lectures, demonstrations, and laboratory. Six hours each week. II and III.

Required Courses — Third Year

11. AUTOPSY PATHOLOGY.—Attendance of and participation in scheduled autopsies at the Research and Educational Hospital and at Cook County Hospital. A complete protocol on each autopsied case is prepared by students assigned in rotation. The clinical and pathological data and pertinent literature is then presented before the class by these students.
12. SURGICAL PATHOLOGY.—Lectures and demonstrations in preparation for the fourth-year course in surgical pathology. One 1-hour period each week for twelve weeks. I, II, and III.

Required Courses — Fourth Year

50. SURGICAL PATHOLOGY.—Following the weekly surgical pathological conference the surgical clerks study systematically gross and microscopic specimens illustrating the common lesions removed by surgical procedures. One 1-hour period each week for twelve weeks. I, II, and III.
66. GYNECOLOGICAL AND OBSTETRICAL PATHOLOGY.—Same as Obstetrics and Gynecology 66. In cooperating with the Department of Obstetrics and Gynecology, gross and microscopic pathological material is presented for study and discussion. Clinical pathological correlations are stressed. One 2-hour period each week for six weeks. I, II, and III.

Courses for Graduate Students

101. ADVANCED PATHOGENESIS.—(1 to 3 units).
103. INDIVIDUAL RESEARCH.—(1 to 3 units).
105. ORAL PATHOLOGY.—(1 to 3 units).

PEDIATRICS

NOTE: The clinical instruction in the Department of Pediatrics is offered in the inpatient and outpatient pediatric services of the Research and Educational, Cook County, and Presbyterian Hospitals, the Contagious Disease Division of the Cook County Hospital, and the Municipal Contagious Disease Hospital. During the third year a systematic course in clinical pediatrics is given to the entire class. In place of the conventional systematic study of diseases in infancy and childhood the most common symptoms during this age period are considered from the standpoint of their basic physiology, pathology, and age incidence. Complementing this course is a series of twelve lectures on emotional growth and development in infancy and childhood. The purpose of this course is to point out the relationship of emotional to physical growth and development. Supplementing the didactic teaching are three-week clerkships on the pediatric ward of the Research and Educational Hospital. Infant feeding and nutri-

tion are taught to small groups by means of discussion of patients and the preparation of diets. Clinical and didactic instruction in applied immunology, public health work, and contagious diseases are offered in both the third and fourth years. The senior year consists of six weeks of clerkship at the Children's Division of the Cook County Hospital, Municipal Contagious Disease Hospital, LaRabida Cardiac Convalescent Sanitarium, pediatric outpatient departments of the Research and Educational and Cook County Hospitals, and the infant welfare units of the Cook County and Municipal Health Organization.

Required Courses — Third Year

10. SYMPTOM DIAGNOSIS IN INFANCY AND CHILDHOOD.—Systematic group lecture on the basic mechanisms and age incidence of thirty of the most common symptoms presented by infants and children. One hour each week. I, II, and III.
11. CLERKSHIP.—Introduction to methods of assessing the infant and child; demonstration of pediatric technics and appraisal by history, physical examination, and laboratory study of the newborn, infant, child, and adolescent. Discussion of nutritional principles and their application by means of a case study, to breast feeding, artificial feeding, and dietary supervision of the normal and sick child. Preparation of diets is presented by means of demonstration. Four hours daily for three weeks. I, II, and III.
12. EMOTIONAL GROWTH AND DEVELOPMENT.—Chronological consideration of emotional growth and developmental patterns as a basis for mental health in newborns, infants, the pre-school child, school children, and the adolescent. Twelve lectures one hour weekly. I, II, and III.
13. APPLIED IMMUNOLOGY AND ACUTE CONTAGIOUS DISEASES.—Group lectures are given to one-fourth of the class on the prophylaxis of the common contagious diseases, and the individual diseases are discussed mainly from the standpoint of pathogenesis, diagnosis, prognosis, and therapy. Two 3-hour periods each week for twelve weeks. I, II, and III. In addition to the didactic presentation, clinical demonstrations on the wards of Cook County Contagious Hospital are given to small groups of students three hours daily for one week for six sessions. I, II, and III.

Required Courses — Fourth Year

50. CLERKSHIP.—The entire clerkship is of six weeks' duration. It is divided into three small groups which are assigned to the pediatric departments of the Research and Educational Hospitals, Presbyterian Hospital, and the Children's Division of Cook County Hospital, for the study of patients on the wards and in the outpatient departments. Each week the students of one clerkship group conduct a clinical conference for the other two groups, demonstrating the interesting case material on their service. In this manner all the students have the opportunity of seeing the clinical material of the three institutions. During one week, each morning is devoted to the clinical and didactic discussion of contagious diseases. Three of these mornings are spent at the Chicago Municipal Contagious Disease Hospital, one at the College of Medicine, and one at the Children's Service of the Chicago Welfare Administration where the practical application of immunization procedures is presented. The afternoons of this week are spent with the Cook County Public Health Unit, at the Samuel Deutsch Serum Center, and at the State Health Laboratories. Two students spend the entire day for three sessions with the attending staff at the LaRabida Sanitarium where problems in the management of the child with rheumatic heart disease are considered. Once a week two students attend the Nursery Schools and Infant Welfare stations and serve as advisory members of the medical staff. The clerkship thus affords a broad orientation in the fields of infant and child welfare, public health, and pediatric practice in the office and in the hospital wards.
56. PEDIATRIC SEMINARS.—Pediatric symptom diagnosis, pediatric therapeutics, endocrinology, and current pediatric journal reviews are presented in seminar session. Three one-hour periods each week for six weeks for the students who are on the pediatric clerkship.

Courses for Graduate Students

101. RESEARCH IN PEDIATRICS.—(1 to 3 units).

PHARMACOLOGY

Required Courses — Second Year

1. PHARMACODYNAMICS, TOXICOLOGY, BIOASSAY, AND CHEMOTHERAPY.—Lectures, conferences, quizzes, and laboratory. Five hours each week for eleven weeks. II and III. *Prerequisite:* Chemistry 1 and 2; Physiology 1.

Required Courses — Third Year

2. THERAPEUTICS.—Lectures and quizzes. One hour each week. I, II, and III.

Courses for Graduate Students

101. RESEARCH IN CHEMOTHERAPY.—(1 to 3 units).
102. RESEARCH IN PHARMACODYNAMICS.—(1 to 3 units).
103. RESEARCH IN EXPERIMENTAL THERAPEUTICS.—(1 to 3 units).
104. RESEARCH IN CELLULAR PHARMACOLOGY.—(1 to 3 units).
105. BIOASSAY AND APPLIED STATISTICS.—(1 to 3 units).
106. PHARMACOLOGICAL SEMINAR.—(½ unit).

PHYSIOLOGY

Required Courses — First Year

1. HUMAN PHYSIOLOGY.—Physiology of blood, circulation, and respiration. Lectures, quiz conferences, demonstrations, and laboratory. Nine hours each week. III.

Required Courses — Second Year

2. HUMAN PHYSIOLOGY.—Continuation of Physiology 1. Physiology of muscle and nerve, central nervous system, and senses. Nine hours each week. I.
3. HUMAN PHYSIOLOGY.—Continuation of Physiology 2. Physiology of digestion, metabolism, endocrines, excretion, and heat regulation. Seven hours each week. II.

Elective Courses

(Open only to qualified students. Time to be arranged.)

51. SPECIAL ADVANCED PHYSIOLOGY.—This course is designed to meet the needs of students desiring advanced, detailed knowledge of a limited field. Each quarter different fields are selected and announced in advance. Subjects covered are blood, heart, circulation, muscle, gastrointestinal tract, kidney, endocrinology, general metabolism and nutrition, growth, and neurophysiology.
55. PROBLEMS IN PHYSIOLOGY.—

Courses for Graduate Students

101. RESEARCH IN PHYSIOLOGY.—(1 to 3 units).
102. RESEARCH IN BIOPHYSICS.—(1 to 3 units).
103. SEMINAR IN SELECTED FIELDS.—(1 unit).
104. CURRENT LITERATURE SEMINAR.—(½ unit). Recommended for all graduate students in physiology.

PSYCHIATRY

NOTE: The course in psychiatry extends through all four years of the medical curriculum. An attempt is made to unify the teaching by considering human behavior and the development of the human personality, both dynamically and descriptively. In the first year an introduction to psychiatry is given by presentation of striking examples of human behavior and by discussion of the broad principles underlying such behavior in order to provide an orientation for the student. Greater detail is introduced as the work develops in the second, third, and fourth years, and varying technics of presentation and approach to material are used. The usual methods of didactic lectures, reading, case presentation, ward rounds under supervision, and clerkships in the ward and dispensary are used. Discussions arising spontaneously and under the direction of preceptors in reviewing histories written by the students clarify understanding and

place emphasis on matters of importance. The clinical summary course is offered in the fourth year both for the purpose of reviewing the course in psychiatry as a whole and as a means of directing the student's attention to the uses of psychiatry in the general practice of medicine.

The objectives of undergraduate teaching of psychiatry are (1) the recognition of the psychiatric implications and problems that may be encountered in all patients regardless of the field of practice, (2) the learning of principles and methods of examination that will make recognition and differentiation of psychiatric problems possible, and (3) arriving at a fairly adequate knowledge of the application of psychiatric methods of treatment, including their use in general practice when definitely specialized therapy is not required.

Required Courses — First Year

1. GENERAL INTRODUCTORY LECTURES IN PSYCHIATRY.—(a) Orientation, (b) Biological Basis of Personality, (c) Psychiatric Psychology. One hour each week. I and II.

Required Courses — Second Year

5. CHILD PSYCHIATRY.—Two hours each week. I.

Required Courses — Third Year

10. CLINICAL DESCRIPTIVE PSYCHIATRY.—One hour each week. I, II, and III.
12. CLERKSHIP.—Clinical instruction in mental examination of patients in wards. Four hours each day for two weeks. I, II, and III.

Required Courses — Fourth Year

51. DISPENSARY.—One 2-hour period each week for six weeks. Entire class. I, II, and III.
52. CLERKSHIP.—Students are assigned in groups of six. Six hours daily for six weeks. I, II, and III.
53. SUMMARY COURSE.—One hour each week. I.

Elective Courses

(For selected students and graduates)

70. SEMINAR IN PSYCHOSOMATIC PROBLEMS.—One and one-half hours weekly. I, II, and III. Discussion of principles and demonstration of cases. Open to internes, residents, physicians, and to junior and senior students with consent of instructors.

Special Courses for Physicians

80. NEUROPSYCHIATRY.—Required of all residents in Psychiatry and Neurology. 216 hours, 18 hours weekly. I and III.
 BASIC PSYCHIATRY.—72 hours.
 ELECTROENCEPHALOGRAPHY.—18 hours.
 NEUROANATOMY.—36 hours.
 NEUROROENTGENOLOGY.—18 hours.
 NEUROPHYSIOLOGY.—36 hours.
 NEUROPATHOLOGY.—36 hours.
90. ELECTROENCEPHALOGRAPHY.—Instruction is provided in basic principles of electrophysiology and in electroencephalographic instrumentation, recording, interpretation, and location, for those qualified to become competent electroencephalographers. Two weeks, summer. Fee, \$50.

Courses for Graduate Students

101. RESEARCH IN PSYCHIATRY.—(1 to 3 units).

RADIOLOGY

NOTE: The diagnostic and therapeutic applications of radiology in the entire field of medicine are presented by means of lectures, film and slide demonstrations, and observation of clinical material.

Required Courses — Third Year

50. **RADIOLOGY.**—Application of Roentgen rays to medicine and surgery. Lectures and demonstrations. One hour each week. I, II, and III.
51. **DISPENSARY.**—Technic, interpretation, and therapy. Taught in connection with various clinical clerkships.

Courses for Graduate Students

101. **RESEARCH IN RADIOLOGY.**—(1 to 3 units).

SURGERY

NOTE: Class work in surgery is begun in the third quarter of the second year, and consists of an informal introductory seminar course covering such problems as surgical bacteriology, infections, and wounds; in addition, a short course in physical diagnosis is given during the third quarter. In the third year another seminar course is given throughout the year which takes up systematically all the important surgical subjects. Three weeks are spent in the dispensary taking histories and examining patients whose cases are discussed with the student by the staff men. Several clinics, including emergency surgery, are given to acquaint the student with clinical material. In the fourth year still more effort is made to have the student take care of patients and get acquainted with clinical methods. A twelve-week clerkship is designed to present the clinical material in this way. During the clerkship period numerous classes or clinics are held to discuss the important teaching cases with the students. Clerkships are given at the Research and Educational, Presbyterian, and Cook County Hospitals. During the fourth year the student is allowed considerable liberty in outlining his own study, and is encouraged to refer to current literature and textbooks about the clinical material as it is presented in the various clinics and clerkships.

GENERAL SURGERY**Required Courses — Second Year**

1. **PHYSICAL DIAGNOSIS.**—Methods of examining surgical patients. Two hours each week for six weeks. III.
2. **INTRODUCTION TO SURGERY.**—Asepsis, surgical bacteriology, infections, surgical methods, wounds, and miscellaneous surgical infections. One hour each week. III.

Required Courses — Third Year

10. **FUNDAMENTAL PRINCIPLES OF SURGERY.**—Seminar course. One hour each week for three quarters. I, II, and III.
11. **SURGICAL CLINIC.**—Research and Educational Hospital. One hour each week. I, II, and III.
12. **EMERGENCY SURGERY.**—One 1-hour period each week for twelve weeks. I, II, and III.
13. **MINOR SURGERY AND FIRST AID.**—One 1-hour period each week for twelve weeks. I, II, and III.
14. **SURGICAL CLINIC.**—One 1-hour period each week for twelve weeks. I, II, and III.
15. **INTRODUCTORY COURSE IN FRACTURES.**—Presbyterian Hospital. One 1-hour period each week for twelve weeks. I, II, and III.
16. **SURGICAL DISPENSARY.**—History-taking, diagnosis, minor surgery, and surgical dressings. Research and Educational Hospital. Two 2-hour periods daily for three weeks. I, II, and III.
17. **INDUSTRIAL SURGERY.**—St. Luke's Hospital. One 1-hour period each week for six weeks. I, II, and III.
18. **Emergency Surgery.**—Cook County Hospital. One 2-hour period each week for six weeks. I, II, and III.

Required Courses — Fourth Year

53. **SURGERY OF CHILDREN.**—Cook County Children's Hospital. One hour each week for six weeks. I, II, and III.

57. **SURGICAL CLERKSHIP.**—Students are assigned patients and are responsible for the history and laboratory work. Includes general (also emergency), thoracic, oral, and neuro-circulatory surgery. Thirty-six hours each week for twelve weeks. I, II, and III. Research and Educational Hospital, Presbyterian Hospital, and Cook County Hospital.
70. **FRACTURES.**—Two 1-hour periods each week for twelve weeks, given in conjunction with course 57. I, II, and III.
80. **SURGICAL CLINIC.**—Research and Educational Hospital. One hour each week for twelve weeks. III.

Courses for Graduate Students

101. **RESEARCH IN SURGERY.**—Registration is open to medical graduates and undergraduates. Registrants possessing the M.D. degree may be assigned to duties or privileges attending conferences and ward rounds in addition to research work but there is no opportunity for work in the operating room unless he is also a member of the house staff. (1 to 3 units).

UROLOGY

Required Courses — Third Year

40. **FUNDAMENTALS OF UROLOGY.**—Conferences and recitations. One hour each week. I.
42. **UROLOGY DISPENSARY.**—History-taking, diagnosis, and treatment. Research and Educational Hospital. Three 2-hour periods each week for two weeks. I, II, and III.

Required Courses — Fourth Year

57. **CLERKSHIP.**—In conjunction with Surgery 57 (Surgical Clerkship).

ANESTHESIA

Required Courses — Third Year

- 10.—**ANESTHESIA.**—Twelve weeks. II.

Required Courses — Fourth Year

57. **CLERKSHIP.**—Given as part of Surgery 57 (Surgical Clerkship). The student is assigned to anesthesia full time for one week; under supervision he gives the anesthetic to patients in the operating room. I, II, and III.

The College of Pharmacy

808 South Wood Street, Chicago 12

THE COLLEGE OF PHARMACY WAS FIRST ESTABLISHED IN 1859 as a proprietary school, the Chicago College of Pharmacy. The college was formally united with the University on May 1, 1896, becoming then the School of Pharmacy of the University of Illinois, and in 1932 the name was changed to the College of Pharmacy. In 1940 the College of Pharmacy was moved from its old location, 715 South Wood Street, to new quarters in the Medical and Dental College Laboratories Building, and most of its equipment was either reconditioned or replaced by new equipment.

Pharmacy is a health profession concerned with the selection, preservation, standardization, and preparation of drugs and medicinals. It is based on two groups of fundamental sciences, the physical and the biological. Advancements in these sciences have contributed so much to the health professions that it is imperative for the pharmacist to be thoroughly trained in the fundamental sciences before undertaking the study of applied and professional subjects. Accordingly, the first two years of the curriculum in the College of Pharmacy are devoted to the physical and biological sciences and other subjects necessary to the practice of pharmacy.

As there are several allied and related fields to which individuals with a pharmaceutical training are particularly adaptable, the College of Pharmacy permits each student to select a field of specialization for his third and fourth years. During these years all students pursue the prescribed courses in applied pharmacy, organic and pharmaceutical chemistry, bacteriology, physiology, and pharmacology, and each student elects additional courses pertinent to his field of specialization.

The four-year curriculum, leading to the degree of Bachelor of Science in Pharmacy, is summarized on pages 450-453. The courses listed for the first two years are required of all students. For the third and fourth years each student selects one of the five majors as his field of specialization. The retail pharmacy major and the hospital pharmacy major both permit specialization in applied pharmacy. The other three majors are designed for students desiring special preparation for work in analytical chemistry, food and drug laboratories, and pharmacognosy, or for graduate study.

Graduate courses leading to the degree of Master of Science are offered in chemistry, pharmacognosy, pharmacology, and hospital pharmacy. Courses leading to the degree of Doctor of Philosophy are offered in pharmacognosy and chemistry. For regulations of the Graduate School governing candidates for advanced degrees, see page 211.

The College of Pharmacy has a museum including more than 10,000 specimens of crude drugs and technical products. One collection is classified according to botanical origin and is arranged in cases illustrating habitat, commerce, etc. Another collection contains every drug officially listed in the United States Pharmacopoeia since 1820 or in the National Formulary since 1888.

For the *faculty* of the College of Pharmacy, see page 81; for *admission*, see pages 110 and 113; for *fees*, see page 120; for *scholarships*, see page 133; for *loan funds*, see page 136; for *college organizations*, see page 414; for *prizes*, see page 144.

Requirements for Graduation

A candidate for the degree of Bachelor of Science in Pharmacy must show evidence of good moral character, pay all indebtedness to the University, obtain passing grades in all courses of the required curriculum, and have grades of "C" or better in at least three-fourths of the total hours taken in the College of Pharmacy and counted toward the degree. A minimum total of 200 quarter hours of credit is required. Either the first three years or the last year of work must be done in the College of Pharmacy.

NOTE: Before a student may register for the regular number of quarter hours of work in the second, third, or fourth year, he must have earned a minimum of hours of credit with grades of "C" or better in the preceding year or years, as follows:

25 credit hours with grades of "C" or better, before beginning the second year.

70 credit hours with grades of "C" or better, before beginning the third year.

110 credit hours with grades of "C" or better, before beginning the fourth year.

Should these minima not be obtained, the student will be required to repeat some of the courses of the year just completed in which grades of "D" were received.

State Registration of Pharmacists

The Illinois pharmacy law provides that a candidate for the certificate of registered pharmacist must be at least twenty-one years of age, must be of good moral character and temperate habits, must be a graduate from a school of pharmacy recognized by the State Department of Registration and Education, and must have had four years of experience in pharmacy and have passed the examination given by the State Board of Pharmacy.

There is also a provision whereby persons may register by reciprocity with other states in which they hold certificates of registration. There are forty-six states that reciprocate with Illinois in this way. Certain rules must be complied with, certain fees paid, and the application should be made to the National Association of Boards of Pharmacy.

Particular attention is called to the clause regarding practical experience. Actual time of attendance at a recognized school of pharmacy, but not to exceed three years, will be allowed on the four years of experience required by law. The remainder of the experience must have been in compounding and dispensing drugs, medicines, and poisons under the supervision of a registered pharmacist in a drugstore or pharmacy where the prescriptions of medical practitioners are compounded. Attention is called to the fact that the College of Pharmacy is the only recognized school of this kind in Illinois.

It is important that every student desiring to qualify in Illinois should become registered as an apprentice as early as possible, since the experience time mentioned above is counted only from the date of registration as an apprentice. Any time spent prior to this date is not credited as experience.

Special Course for Pharmacists

A conference for practicing pharmacists is held annually by the College of Pharmacy. The three-day program includes lectures, demonstrations, and discussions on latest developments in pharmacy. A registration fee of \$5 is charged.

COURSES OFFERED IN THE COLLEGE OF PHARMACY

NOTE: The following list of subjects is arranged in alphabetical order. The description of each course includes a statement of the number of lecture, recitation, or laboratory periods each week (each period being one clock hour unless otherwise specified). The Roman numerals I, II, and III indicate the first, second, and third quarters, respectively, and the Arabic numerals in parenthesis indicate the credit hours. For example, "I, (3)" means that the course is given in the first quarter for three hours of credit. The expression "I, II, or III" is used if the course may be taken in any quarter.

A circular announcing courses to be offered in the coming year, and including other information for prospective students, may be obtained by addressing the Dean of the College of Pharmacy, 808 South Wood Street, Chicago 12.

SUMMARY OF CURRICULUM IN PHARMACY
First Two Years in All Curricula

Courses	Clock Hours Each Week		Total Clock Hours	Total Credit Hours
	Didactic	Laboratory		
FIRST YEAR				
FIRST QUARTER				
Chemistry 11	3	3	6	4
English 11	3	..	3	3
Pharmacy 11	3	..	3	3
Zoology 11	4	6	10	6
Hygiene 11	1	..	1	0
<i>Total</i>	14	9	23	16
SECOND QUARTER				
Chemistry 12	3	3	6	4
English 12	3	..	3	3
Mathematics 12	5	..	5	5
Pharmacy 12	2	2	4	3
Botany 12	2	4	6	4
<i>Total</i>	15	9	24	19
THIRD QUARTER				
Chemistry 13	3	3	6	4
English 13	3	..	3	3
Mathematics 13	4	..	4	4
Pharmacy 13	2	2	4	3
Botany 13	2	4	6	4
<i>Total</i>	14	9	23	18
SECOND YEAR				
FIRST QUARTER				
Chemistry 21	3	6	9	5
Pharmacy 21	3	3	6	4
Chemistry 25	3	6	9	5
Physics 21	3	3	6	4
<i>Total</i>	12	18	30	18
SECOND QUARTER				
Chemistry 22	2	6	8	4
Pharmacy 22	3	3	6	4
Chemistry 26	3	6	9	5
Physics 22	3	3	6	4
<i>Total</i>	11	18	29	17
THIRD QUARTER				
Chemistry 23	2	6	8	4
Pharmacy 23	3	3	6	4
Chemistry 27	3	6	9	5
Physics 23	3	3	6	4
<i>Total</i>	11	18	29	17

Retail Pharmacy Major

THIRD YEAR				
FIRST QUARTER				
Pharmacognosy 31	3	6	9	5
Pharmacy 31	3	4	7	4
Pharmacy 34	2	..	2	2
Pharmacy 35a	2	..	2	2
Accounting 31	2	3	5	3
<i>Total</i>	12	13	25	16
SECOND QUARTER				
Pharmacognosy 32	3	6	9	5
Pharmacy 32	3	4	7	4
Pharmacy 35b	2	..	2	2
Physiology 32	4	3	7	5
<i>Total</i>	12	13	25	16
THIRD QUARTER				
Bacteriology 33	5	6	11	8
Pharmacognosy 33	3	6	9	5
Pharmacy 33	3	4	7	4
<i>Total</i>	11	16	27	17

SUMMARY OF CURRICULUM IN PHARMACY (continued)
Retail Pharmacy Major (continued)

Courses	Clock Hours Each Week		Total Clock Hours	Total Credit Hours
	Didactic	Laboratory		
FOURTH YEAR				
FIRST QUARTER				
Chemistry 41	2	9	11	5
Pharmacology 41	3	2	5	4
Pharmacy 41	2	4	6	4
Pharmacy 45	1	..	1	1
Electives	(..)	(..)	(..)	3
<i>Total</i>	(8)	(15)	(23)	17
SECOND QUARTER				
Chemistry 42	4	..	4	4
Pharmacology 42	3	2	5	4
Pharmacy 42	2	4	6	4
Pharmacy 46	1	..	1	1
Pharmacy 44	2	6	8	4
<i>Total</i>	12	12	24	17
THIRD QUARTER				
Pharmacology 43	3	2	5	4
Pharmacy 43	2	4	6	4
Pharmacy 47	1	..	1	1
Hygiene 41	2	2	4	3
Pharmacy 48	3	..	3	3
<i>Total</i>	11	8	19	15

Hospital Pharmacy Major

THIRD YEAR				
FIRST QUARTER				
Pharmacognosy 31	3	6	9	5
Pharmacy 31	3	4	7	4
Pharmacy 35a	2	..	2	2
Pharmacognosy 34	2	3	5	3
Pharmacy 34	2	..	2	2
<i>Total</i>	12	13	25	16
SECOND QUARTER				
Pharmacognosy 32	3	6	9	5
Pharmacy 32	3	4	7	4
Pharmacy 35b	2	..	2	2
Physiology 32	4	3	7	5
Pharmacognosy 35	1	6	7	3
<i>Total</i>	13	19	32	19
THIRD QUARTER				
Pharmacognosy 33	3	6	9	5
Bacteriology 33	5	6	11	8
Pharmacy 33	3	4	7	4
<i>Total</i>	11	16	27	17
FOURTH YEAR				
FIRST QUARTER				
Chemistry 41	2	9	11	5
Chemistry 47	5	4	9	6
Pharmacology 41	3	2	5	4
Pharmacy 45	1	..	1	1
Pharmacy 49	1	6	7	3
<i>Total</i>	12	21	33	19
SECOND QUARTER				
Chemistry 42	4	..	4	4
Chemistry 48	5	4	9	6
Pharmacology 42	3	2	5	4
Pharmacy 46	1	..	1	1
Pharmacy 50	1	6	7	3
<i>Total</i>	14	12	26	18
THIRD QUARTER				
Bacteriology 43 .....	..	6	6	3
Hygiene 41	2	2	4	3
Pharmacology 43	3	2	5	4
Pharmacy 47	1	..	1	1
Pharmacy 51	1	7	8	3
Electives	(..)	(..)	(..)	2
<i>Total</i>	(7)	(16)	(23)	16

SUMMARY OF CURRICULUM IN PHARMACY (continued)

Chemistry Major

Courses	Clock Hours Each Week		Total Clock Hours	Total Credit Hours
	Didactic	Laboratory		
THIRD YEAR				
FIRST QUARTER				
Pharmacognosy 31.....	3	6	9	.5
Pharmacy 31.....	3	4	7	4
Pharmacognosy 34.....	2	3	5	3
Chemistry 34a.....	2	3	5	3
Total.....	10	16	26	15
SECOND QUARTER				
Pharmacognosy 32.....	3	6	9	5
Pharmacy 32.....	3	4	7	4
Physiology 32.....	4	3	7	5
Chemistry 34b.....	2	3	5	3
Total.....	12	16	28	17
THIRD QUARTER				
Pharmacognosy 33.....	3	6	9	5
Pharmacy 33.....	3	4	7	4
Bacteriology 33.....	5	6	11	8
Total.....	11	16	27	17
FOURTH YEAR				
FIRST QUARTER				
Chemistry 41.....	2	9	11	5
Pharmacology 41.....	3	2	5	4
Chemistry 45.....	4	..	4	4
Pharmacognosy 45.....	..	6	6	2
Chemistry 47.....	3	6	9	6
Total.....	12	23	35	21
SECOND QUARTER				
Chemistry 42.....	4	..	4	4
Pharmacology 42.....	3	2	5	4
Chemistry 48.....	3	6	9	6
Chemistry 46.....	2	9	11	5
Total.....	12	17	29	19
THIRD QUARTER				
Pharmacology 43.....	3	2	5	4
Chemistry 43.....	2	9	11	5
Chemistry 49.....	2	9	11	5
Total.....	7	20	27	14

Food and Drug Major

THIRD YEAR				
FIRST QUARTER				
Pharmacognosy 31.....	3	6	9	5
Pharmacy 31.....	3	4	7	4
Chemistry 34a.....	2	3	5	3
Pharmacognosy 34.....	2	3	5	3
Total.....	10	16	26	15
SECOND QUARTER				
Pharmacognosy 32.....	3	6	9	5
Pharmacy 32.....	3	4	7	4
Chemistry 34b.....	2	3	5	3
Physiology 32.....	4	3	7	5
Total.....	12	16	28	17
THIRD QUARTER				
Pharmacognosy 33.....	3	6	9	5
Pharmacy 33.....	3	4	7	4
Bacteriology 33.....	5	6	11	8
Total.....	11	16	27	17

SUMMARY OF CURRICULUM IN PHARMACY (continued)
Food and Drug Major (continued)

Courses	Clock Hours Each Week		Total Clock Hours	Total Credit Hours
	Didactic	Laboratory		
FOURTH YEAR				
FIRST QUARTER				
Chemistry 41.....	2	9	11	5
Pharmacology 41.....	3	2	5	4
Chemistry 40.....	2	..	2	2
Pharmacy 45.....	1	..	1	1
Chemistry 45.....	4	..	4	4
Pharmacognosy 45.....	..	6	6	2
<i>Total</i>	12	17	29	18
SECOND QUARTER				
Chemistry 42.....	4	..	4	4
Pharmacology 42.....	3	2	5	4
Pharmacy 46.....	1	..	1	1
Chemistry 44a.....	2	6	8	4
Pharmacognosy 43.....	2	9	11	5
<i>Total</i>	12	17	29	18
THIRD QUARTER				
Pharmacology 43.....	3	2	5	4
Chemistry 44b.....	2	6	8	4
Chemistry 43 or.....	2	9	11	5
Chemistry 49.....	(2)	(9)	(11)	(5)
Pharmacy 47.....	1	..	1	1
Pharmacognosy 41.....	3	..	3	3
<i>Total</i>	11	17	28	17

Pharmacognosy Major

THIRD YEAR				
FIRST QUARTER				
Pharmacognosy 31.....	3	6	9	5
Pharmacy 31.....	3	4	7	4
Pharmacognosy 34.....	2	3	5	3
Pharmacognosy 36.....	1	9	10	4
<i>Total</i>	9	22	31	16
SECOND QUARTER				
Pharmacognosy 32.....	3	6	9	5
Pharmacy 32.....	3	4	7	4
Pharmacognosy 35.....	1	6	7	3
Physiology 32.....	4	3	7	5
<i>Total</i>	11	19	30	17
THIRD QUARTER				
Pharmacognosy 33.....	3	6	9	5
Pharmacy 33.....	3	4	7	4
Bacteriology 33.....	5	6	11	8
<i>Total</i>	11	16	27	17
FOURTH YEAR				
FIRST QUARTER				
Chemistry 41.....	2	9	11	5
Pharmacology 41.....	3	2	5	4
Chemistry 45.....	4	..	4	4
Pharmacognosy 45.....	..	6	6	2
Pharmacognosy 41.....	3	..	3	3
<i>Total</i>	12	17	29	18
SECOND QUARTER				
Chemistry 42.....	4	..	4	4
Pharmacology 42.....	3	2	5	4
Pharmacognosy 43.....	2	9	11	5
Elective.....	(..)	(..)	(..)	4
<i>Total</i>	(9)	(11)	(20)	17
THIRD QUARTER				
Chemistry 43.....	2	9	11	5
Pharmacology 43.....	3	2	5	4
Pharmacognosy 42.....	2	6	8	5
Pharmacognosy 44.....	1	6	7	3
<i>Total</i>	8	23	31	17

ACCOUNTING

31. **PRINCIPLES OF ACCOUNTING.**—Fundamentals of bookkeeping practice as applied to a retail drugstore, including accounts, books, statements, and trial balances. Two lectures or recitations and one 3-hour laboratory period each week. I, (3). May be elected by juniors or seniors.

BACTERIOLOGY

33. **GENERAL BACTERIOLOGY.**—Characteristics of bacteria, yeasts, and moulds; their relation to disease; biologic products prepared from them; action of antiseptics, disinfectants, and sterilizants; cleaning and sterilizing glassware; preparation of culture media and staining solutions; preparation of cultures and stained mounts; isolation and identification of organisms from mixed cultures; study of pathogenic organisms; milk and water counts; disinfectant standardization. Five lectures and three 2-hour laboratory periods each week. III, (8).
43. **ADVANCED BACTERIOLOGICAL METHODS.**—Lectures and laboratory work on special subjects in bacteriology related to pharmacy, medicine, and dentistry. Three 2-hour laboratory periods each week. I or II, (3). *Prerequisite:* Bacteriology 33.

BOTANY

- 12-13. **PHARMACEUTICAL BOTANY.**—General principles of plant science, having special application to the knowledge of vegetable drugs, with particular reference to gross morphology, micromorphology, physiology, and taxonomy. Two lectures or recitations and two 2-hour laboratory periods each week. II and III, (4). Must be taken in sequence.

CHEMISTRY

- 11-12-13. **GENERAL CHEMISTRY.**—Elementary course in the states and properties of matter, the laws of chemical combination, the atomic and molecular theories, the elements and their periodic properties, the physical and chemical properties of the elements and their compounds. Two lectures and one recitation, and one 3-hour laboratory period each week. I, II, and III, (4). Must be taken in sequence.
21. **INORGANIC QUALITATIVE ANALYSIS.**—Properties of positive and negative radicals and the reactions used in detecting them when alone and when mixed with others. This course includes the systematic separation of the metals and an extended study of reactions of negative radicals. Practice in equation-writing is an essential part of the instruction. Three lectures or recitations and two 3-hour laboratory periods each week. I, (5). *Prerequisite:* Chemistry 13 or its equivalent.
- 22-23. **QUANTITATIVE ANALYSIS.**—Theories and technic of gravimetric and volumetric analysis. Whenever possible the methods of the U.S.P. are used to illustrate their application, and pharmaceutical or medicinal products are used for practical examinations. Two lectures or recitations and two 3-hour laboratory periods each week. II and III, (4). Must be taken in sequence. *Prerequisite:* Chemistry 21 or its equivalent.
- 25-26-27. **ORGANIC CHEMISTRY.**—Nomenclature, occurrence, general methods of preparation, type reactions, and special reactions of acyclic, alicyclic, and aromatic hydrocarbons; their oxygen, halogen, nitrogen, and sulfur derivatives; proteins, carbohydrates; the simpler oxygen, nitrogen, and sulfur heterocyclics. Three lectures and two 3-hour laboratory periods each week. I, II, and III, (5). Must be taken in sequence. *Prerequisite:* Chemistry 13 or its equivalent.
- 34a-34b. **PHYSICAL CHEMISTRY.**—Gases, liquids, solutions, electrolytes, law of mass action, chemical equilibria, the hydrogen ion, oxidation and reduction, rate of reaction, the colloid state, and absorption. Two lectures and one 3-hour laboratory period each week. I and II, (3). Must be taken in sequence. *Prerequisite:* Chemistry 23 or its equivalent.

40. COMPOSITION AND TECHNOLOGY OF FOODS.—The origin, manufacture, general characteristics, and common adulterations of foods and the relationship of foods to nutrition. Two class periods each week. I, (2). *Prerequisite:* Chemistry 27.
41. DRUG ASSAYING.—Principles and methods of drug standardization applied to substances included in the U.S.P. Preparation and standardization of volumetric solutions; assays of alkaloid-bearing drugs, resinous drugs, essential oils, aldehydes, phenol, and nitrites; determination of halogen in organic compounds; alcohol in pharmaceutical preparations; acid, saponification, and iodine value of fats; congealing point, refractive index, and specific rotation. Two lectures or recitations, and three 3-hour laboratory periods each week. I, (5). *Prerequisite:* Chemistry 23 and 27, or their equivalents.
42. CHEMISTRY OF SYNTHETIC DRUGS.—Constitution, properties, and methods of synthesis of representative synthetic drugs used in modern medicine. Classification of relationships between chemical constitution and physiological action. Four lectures each week. II, (4). *Prerequisite:* Chemistry 27 or its equivalent.
43. CHEMICAL TOXICOLOGY.—Isolation and identification of alkaloids and synthetic drugs from mixtures, tissues, and biological fluids. Two lectures and three 3-hour laboratory periods each week. I or III, (5). *Prerequisite:* Chemistry 23 and 27, or their equivalents.
- 44a-44b. FOOD ANALYSIS.—Principles and methods of food analysis. Samples of food products are subjected to physical and chemical examination for the detection of preservatives, added coloring, metallic poisons, and foreign substances. The chemical and physical constants of common food substances are determined and compared with the state and federal requirements for these substances. Flavoring extracts, milk, butter, salad oils, table syrups, and other food products are analyzed. Two lectures and two 3-hour laboratory periods each week. II and III, (4). *Prerequisite:* Chemistry 23 and 27, or their equivalents.
45. CHEMISTRY OF NATURAL PRODUCTS.—Classes of pharmaceutical and medicinal agents derived from plants and animals. Occurrence, origin, methods of isolation, and chemical properties of carbohydrates, gums, mucilages, tannins, glucosides, saponins, enzymes, oils, fats, waxes, sterols, essential oils, alkaloids, vitamins, and hormones. Four lectures each week. I or III, (4). *Prerequisite:* Chemistry 27 or its equivalent.
46. SYNTHESIS OF DRUGS.—Continuation of the study of organic chemistry and the applications of the type reactions to the manufacture of organic medicinal chemicals and their intermediates. Barbital, cinchophen, acetphenetidin, phenolphthalein, tryparsamide, hexylresorcinol, guaiacol, methylene blue, or others may be selected in consultation with the instructor. Reference to the original work on the substance elected is encouraged. Two lectures or recitations and three 3-hour laboratory periods each week. II, (5). *Prerequisite:* Chemistry 27 or its equivalent.
- 47-48. BIOLOGICAL CHEMISTRY.—Equivalent to Biological Chemistry 1 and 2 in the College of Medicine. I and II, (6). Must be taken in sequence. *Prerequisite:* Chemistry 23 and 27, or their equivalents.
49. PHARMACEUTICAL ASSAYING.—Analytical control of raw materials and finished preparations made in the Hospital Pharmacy. Two lectures or recitations, and three 3-hour laboratory periods each week. II or III, (5). *Prerequisite:* Chemistry 41.

Courses for Graduate Students

101. QUALITATIVE ORGANIC ANALYSIS.—($\frac{1}{2}$ to 1 unit).
102. ULTIMATE ANALYSIS OF ORGANIC COMPOUNDS.—($\frac{1}{2}$ unit).
103. ADVANCED DRUG ASSAY.—($\frac{1}{2}$ to 2 units).
104. PHYTOCHEMISTRY.—($\frac{1}{2}$ to 2 units).
105. ADVANCED ORGANIC CHEMISTRY.—($\frac{1}{2}$ unit).
106. ADVANCED ORGANIC CHEMISTRY.—($\frac{1}{2}$ unit).
107. ELECTROCHEMISTRY.—(1 unit).
108. CHEMISTRY OF HETEROCYCLIC COMPOUNDS.—($\frac{1}{2}$ unit).
109. VITAMIN ASSAY.—($\frac{1}{2}$ to 1 unit).
134. PHYSICAL CHEMISTRY.—(1 unit).
143. CHEMICAL TOXICOLOGY.—(1 unit).
200. RESEARCH IN CHEMISTRY.—Credit to be arranged.

ENGLISH

- 11-12-13. ENGLISH COMPOSITION.—Practice in writing, reading, note-taking, and organizing material related to the work in the other courses. A passing grade in English 11 is prerequisite to registration in English 12, etc. Three class periods each week. I, II, and II, (3).

HYGIENE

11. GENERAL HYGIENE AND PUBLIC HEALTH.—Required of all freshmen. I, (no credit).
41. FIRST AID.—Two lectures and one 2-hour demonstration period each week. I, II, or III, (3). May be elected by seniors only.

LANGUAGES

- GERMAN OR FRENCH.—During their junior or senior year students may elect German or French in any college or university accredited by the University of Illinois, and may present not more than twelve quarter-hours of either language for advanced credit in lieu of other electives, provided that approval of the executive committee is secured.

MATHEMATICS

12. COLLEGE ALGEBRA.—Five class periods each week. II, (5).
13. PLANE TRIGONOMETRY.—Four class periods each week. III, (4).

PHARMACOGNOSY

- 31-32-33. VEGETABLE AND ANIMAL DRUGS.—Titles, synonyms, definitions, history, distribution, collection, commerce, preservation, identification, standardization, therapeutic use, and dose. The laboratory work includes a study of the more important drugs in whole and powdered form, leading to their recognition and the determination of their quality and purity by organoleptic, microscopic, and microchemical means. Two lectures, one recitation, and two 3-hour laboratory periods each week. I, II, and III, (5). Must be taken in sequence. *Prerequisite:* Zoology 11, Botany 13, Chemistry 27.
34. CHEMICAL MICROSCOPY.—Morphology of crystals, including crystal growth, habit, angles, axes, intercepts, and symmetry; the six crystal systems and the 32 crystal classes; optical properties of crystals, including double refraction, wave and ray velocity, polarization by crystals, the uniaxial indicatrix, biaxial crystals and biaxial indicatrix, birefringence, etc., and the use of the petrographical microscope in the examination of crystals in parallel and convergent light. Designed for students desiring instruction in the fundamentals of optical crystallography and the use of the petrographical microscope in the identification of minute quantities of crystalline material. Two lectures and one 3-hour laboratory period each week. I, (3). May be elected in the junior or senior year.
35. CHEMICAL MICROSCOPY.—The practical application of chemical microscopy in analytical work, including manipulative methods, methods of applying reagents, the detection of the elements in the periodic system, the detection of anions, the detection of organic compounds of synthetic origin, and the detection of organic compounds of natural origin, including alkaloids, glucosides, volatile oil constituents, etc. One lecture and two 3-hour laboratory periods each week. II, (3). *Prerequisite:* Pharmacognosy 34.
36. MICROSCOPIC TECHNIC.—Collection, preservation, and preparation of plant and animal material for microscopic examination; methods of hardening, fixing, imbedding, sectioning, staining, and mounting; special stains and reagents; special microscopic methods and photomicrography. One lecture and three 3-hour laboratory periods each week. I or II, (4). *Prerequisite:* Pharmacognosy 33. May be elected in the junior or senior year.
41. ECONOMIC PHARMACOGNOSY.—Seminar course in the crude drug trade, including discussions of production and commerce in crude drugs and other crude technical products, as fats; oils, waxes, etc.; cultivation and preparation, imports and exports, markets and conditions affecting markets. Reports are made from

- trade journals, government bulletins, and other sources. Three class hours per week. For students planning to enter the manufacturing field. I or II, (3). May be elected in the senior year only.
42. **ADVANCED PHARMACOGNOSY.**—Special divisions of pharmacognosy, including pollen grains and other vegetable and animal material related to allergy; the pharmacognosy of the glandular products; vegetable insecticides; advanced methods of quantitative microscopy, and ultraviolet microscopy of drugs and medicinals. Two lectures or recitations and three 2-hour laboratory periods each week. I or III, (5). *Prerequisite:* Pharmacognosy 33. May be elected in the senior year only.
43. **MICROSCOPY OF FOODS.**—Microscopical study of foods, including the identification and determination of the quality and purity of cereals and cereal products, spices and condiments, oil seeds and oil cakes, legumes, nuts, fruit and fruit products, vegetables, tea, coffee, cacao, etc. Special reference to legal standards governing these foods. Food products purchased in the open market are brought to the laboratory for examination. Two lectures or recitations and three 3-hour laboratory periods each week. II or III, (5). *Prerequisite:* Pharmacognosy 33. May be elected in the senior year only.
44. **MICROSCOPY OF TECHNICAL PRODUCTS.**—Application of microscopical and microchemical methods to the identification of fibers, textiles, papers, woods, plastics, and other technical and industrial products. One lecture or recitation and two 3-hour laboratory periods each week. I, II, and III, (3). *Prerequisite:* Pharmacognosy 33. May be elected in the senior year only.
45. **MICROCHEMISTRY OF PLANTS.**—Laboratory study of the drugs of vegetable origin and a few of animal origin, based on their important constituents. The work includes microisolation of the constituents from plant material and identification of these constituents by microscopical and microchemical means. The groups studied include carbohydrates, mucilages, gums, glucosides, alkaloids, fixed and volatile oils, oleoresins, resins, balsams, tannins, phloroglucinol derivatives, enzymes, hormones, etc. Two 3-hour laboratory periods each week. I or III, (2). *Prerequisite:* Pharmacognosy 34; Chemistry 45 or concurrent registration therein. May be elected in the senior year only.
46. **MICROSCOPY OF COSMETICS.**—Application of microscopical and microchemical methods to the identification of cosmetics, cosmetic raw materials, and other toilet preparations, including powders, creams, sachets, and cosmetic specialties. One lecture or recitation and two 2-hour laboratory periods each week. I, II, or III, (3). *Prerequisite:* Pharmacognosy 33 and 34. May be elected in the senior year only.

Courses for Graduate Students

100. **SEMINAR IN PHARMACOGNOSY.**—($\frac{1}{4}$ unit).
101. **DRUG PLANT CULTIVATION.**—(1 unit).
102. **DRUG PLANT CULTIVATION (FIELD AND GREENHOUSE).**—(1 to 2 units).
103. **ANATOMY AND PHYSIOLOGY OF THE VASCULAR PLANTS.**—(1 unit).
104. **TAXONOMY AND GENETICS OF FLOWERING PLANTS.**—(1 unit).
134-135. **CHEMICAL MICROSCOPY.**—(1 unit).
136. **MICROSCOPIC TECHNIC.**—(1 unit).
142. **ADVANCED PHARMACOGNOSY.**—(1 unit).
143. **MICROSCOPY OF FOODS.**—(1 unit).
144. **MICROSCOPY OF TECHNICAL PRODUCTS.**—(1 unit).
145. **MICROCHEMISTRY OF PLANTS.**—(1 unit).
200. **RESEARCH IN PHARMACOGNOSY.**—Credit to be arranged.

PHARMACOLOGY

- 41-42-43. **USES AND ACTIONS OF DRUGS.**—Scope, mode of action, and pharmacological classification of drug agents; pharmacological and physiological aspects of the more important members of each group. Drugs of the United States Pharmacopoeia, National Formulary, and selected items from New and Non-Official Remedies, are discussed according to pharmacological action, toxicology, and therapeutic application. Controlled laboratory work combined with demonstrations illustrating methods of investigation, evaluation, and application of results. Three lectures or recitations and one 2-hour laboratory period each week. I, II, and III, (4). Must be taken in sequence. *Prerequisite:* Pharmacognosy 33, Physiology 32, and Chemistry 27.

PHARMACY

- 11-12-13. **INTRODUCTORY PHARMACY.**—An outline of the scope of pharmacy, including historical background, nomenclature, definitions, pharmaceutical manipulations and mathematics. The laboratory work consists in making the simpler types of products, such as aromatic waters, solutions, syrups, and elixirs. Three lectures or recitations each week. I, (3). Two lectures or recitations, and one 2-hour laboratory period each week. II and III, (3). Must be taken in sequence.
- 21-22-23. **PHARMACEUTICAL PREPARATIONS.**—Official and non-official preparations such as emulsions, lotions, tinctures, fluid extracts, etc., with one quarter devoted to inorganic compounds. Two lectures, one recitation, and one 3-hour laboratory period each week. I, II, and III, (4). Must be taken in sequence. *Prerequisite:* Pharmacy 13.
- 31-32-33. **DISPENSING PHARMACY.**—Fundamental dispensing technics with the manufacture of extemporaneous preparations. Compounding, labeling, filing, and wrapping of prescriptions. Two lectures, one recitation, and two 2-hour laboratory periods each week. I, II, and III, (4). Must be taken in sequence. *Prerequisite:* Pharmacy 23.
34. **PHARMACEUTICAL JURISPRUDENCE.**—Laws and regulations relating to the practice of pharmacy; principles of common law bearing upon the work and responsibilities of the pharmacist. Two lectures each week. I, II, or III, (2). May be elected by juniors and seniors. *Prerequisite:* Pharmacy 23.
- 35a-35b. **HISTORY OF PHARMACY.**—The history and literature of pharmacy. An elective course for juniors and seniors. Two conference periods each week. I and II, (2). Must be taken in sequence. *Prerequisite:* Pharmacy 23.
- 41-42-43. **ADVANCED DISPENSING.**—Dispensing procedures for the more complex types of prescriptions, incompatibilities, special fields of medicine and dentistry and commonly used non-official remedies. Two lectures or recitations and two 2-hour laboratory periods each week. I, II, and III, (4). Must be taken in sequence. Required of Pharmacy majors. *Prerequisite:* Pharmacy 33.
44. **COSMETICS.**—Materials, processes, and uses involved in the manufacture of cosmetics, including the manufacture of types in the laboratory work. Two lectures and six hours of laboratory work. I, II, or III, (4). *Prerequisite:* Pharmacy 33, Chemistry 27.
- 45-46-47. **PHARMACEUTICAL LITERATURE.**—Review of current literature relating to the profession of pharmacy. One conference period each week. I, II, and III, (1). Must be taken in sequence. May be elected by seniors only.
48. **PHARMACEUTICAL ECONOMICS.**—Business administration of the retail drugstore. Three periods each week. III, (3). May be elected by seniors only.
49. **MANUFACTURING PROCESSES.**—Manufacture of pharmaceutical products on a semi-commercial scale, including analytical control of raw materials and finished preparations. One conference period and six hours of laboratory work each week. I, II, and III, (3). *Prerequisite:* Pharmacy 33, Chemistry 27.
50. **HOSPITAL PHARMACY.**—Fundamentals of hospital pharmacy management. One conference period and six hours in the hospital pharmacy each week. II, (3). *Prerequisite:* Pharmacy 33, Chemistry 27.
51. **PARENTERAL AND SPECIAL SOLUTIONS.**—Preparation of solutions for intravenous and subcutaneous use. One conference period and six hours of laboratory work each week. III, (3). *Prerequisite:* Pharmacy 33, Chemistry 27, Bacteriology 33.

Courses for Graduate Students

100. **HOSPITAL PHARMACY.**—(1 or 2 units).
 101. **BEGINNING MANUFACTURING PHARMACY.**—(1 or 2 units).
 102. **ADVANCED MANUFACTURING PHARMACY.**—(1 or 2 units).
 110. **SEMINAR IN PHARMACY.**—($\frac{1}{4}$ unit).
 200. **RESEARCH IN PHARMACY.**—Credit to be arranged.

PHYSICS

- 21-22-23. **MECHANICS, HEAT, SOUND, ELECTRICITY, MAGNETISM, AND LIGHT.**—Two lectures, one recitation, and one 3-hour laboratory period each week. I, II, and III, (4). *Prerequisite:* Mathematics 12 and 13, or their equivalents.

PHYSIOLOGY

32. **ELEMENTARY PHYSIOLOGY.**—Consideration of the various activities of living beings with particular emphasis on the manner in which the human body works under different conditions of health and disease. Four lectures, quiz conferences, or demonstrations, and one 3-hour laboratory period each week. II, (5).

PHYSIOLOGY AND PHARMACOLOGY.—Courses in Physiology, pharmacology, and in certain other subjects offered in the College of Medicine may be elected for credit in the senior year by permission of the executive committee. Hours and credits to be arranged.

ZOOLOGY

11. **GENERAL ZOOLOGY.**—Fundamental principles of animal biology; structure, functions, interrelations, origin, and development of animal life. Three lectures, one recitation, and two 3-hour laboratory periods each week. I, (6).

The Division of Services for Crippled Children

1105 South Sixth Street, Springfield

THE DIVISION OF SERVICES FOR CRIPPLED CHILDREN IS AN INDEPENDENT unit of the University operating a statewide program of medical, surgical, corrective, and other services and facilities for diagnosis, hospitalization, and aftercare for children who are crippled or who are suffering from conditions which lead to crippling. Its director is responsible to the Vice-President in charge of the Chicago Professional Colleges of the University. Its program is carried out in part through funds allocated to the state under the terms of the federal Social Security Act and in part by funds appropriated to the University by the General Assembly for the Division's work.

The Division conducts more than 140 outpatient diagnostic, orthopaedic, and speech and hearing clinics throughout the state each year and provides hospitalization in various medical centers. It maintains close working relationships with the College of Medicine and the Research and Educational Hospitals, particularly the Surgical Institute for Children, where a considerable number of its patients are provided care. It is one of the sponsoring agencies of the Epilepsy Diagnostic Clinic in the Neuropsychiatric Institute. It cooperates with the State Department of Public Health, the State Department of Public Welfare, the State Superintendent of Public Instruction, the State Division of Vocational Rehabilitation, and the State Commission for Handicapped Children, as well as numerous other public and private health and social agencies operating at a statewide or local level.

The Division's field program is carried out through a staff of consultants in public health nursing, medical social work, and speech and hearing rehabilitation.

District offices are located at Chicago, East St. Louis, Mount Vernon, Peoria, Rockford, Springfield, Urbana, and Vandalia. All correspondence should be addressed to the director at 1105 South Sixth Street, Springfield.

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General Publications

Semi-Centennial History of the University of Illinois, Volume I, by Burt E. Powell, 1918; 631 pages, \$3.50.
History of the University of Illinois, by Carl Stephens and Charles W. Paape. (*In press*).
Sixteen Years at the University of Illinois, a statistical study of the administration of President Edmund J. James, 1920; 264 pages, \$2.50.
Selim Hobart Peabody, a biography, by Katherine Peabody Girling, 1923; 215 pages, \$1.70.
The Life and Work of Andrew Sloan Draper, by H. H. Horner, 1934; 291 pages, 9 illustrations, \$3.
Autobiography of David Kinley. (*In press*).
History of the Campus Plan of the University of Illinois, by L. D. Tilton and T. E. O'Donnell, 1930; 256 pages, 36 plates, \$5.
The Collected Works of George Abram Miller.
Volume I (Works through 1899) 1935; xii, 475 pages, 1 plate, \$7.50.
Volume II (Works through 1907) 1938; xi, 537 pages, 1 plate, \$7.50.
Volume III (Works through 1915) 1946; xi, 499 pages, \$7.50.
The Collected Works of George Boris Hassin. (*In press*).
Konungs Skuggsjá, manuscript in facsimile, with diplomatic text, by G. T. Flom, 1915; 191 pages, 67 plates, \$15.
Life of Columcille, compiled by Manus O'Donnell in 1532. Edited and translated by A. O'Kelleher and G. Schoepperle. Irish Foundation Series, 1918; 516 pages, paper, \$3.50.
The Power of a God, and other plays, by T. H. Guild, 1919; 151 pages, 5 plates, \$1.25.
Cooperation: A Study in Constructive Economic Reform, by G. S. Watkins, 1921; 85 pages, \$1.
The Taxation of Corporate Income, by Charles J. Gaa, 1944; 285 pages, \$4.

- The Life of Solitude. A translation of Petrarch's *De Vita Solitaria*, with introduction and notes, by Jacob Zeitlin, 1924; 320 pages, \$4.
- Contributions toward a Bibliography of Epictetus (with a facsimile reproduction of Jacob Schenk's translation of the Encheiridion, Basel, 1534), by William A. Oldfather, 1927; 240 pages, paper, \$3.50; boards, \$4.
- Index Verborum Ciceronis Epistularum, by W. A. Oldfather, H. V. Canter, and K. M. Abbott, 1938; 583 pages, \$9.
- Renaissance Student Life: The Paedologia of Petrus Mosellanus, translated by Robert F. Seybolt, 1927; 100 pages, \$1.25.
- Milton's Rabbinical Readings, by Harris F. Fletcher, 1930; 344 pages, \$7.50.
- Milton's Poetical Works, Illinois Facsimile Edition, edited by Harris F. Fletcher.
- Volume I, The Minor Poems, 1943; 465 pages, \$20.
- Volume II, *Paradise Lost*, First Edition, 1667-1669; 1945; 634 pages, \$20.
- Volume III, *Paradise Lost*, Second Edition, 1674. (*In press*).
- Volume IV, *Paradise Regained* and *Samson Agonistes*, 1671 Edition. (*In press*).
- Bibliographies of Studies in Victorian Literature, 1932-1942, edited by William D. Templeman, 1945; 450 pages, \$5.
- Shakspere's Five-Act Structure. Shakspere's early plays on the background of Renaissance theories of five-act structure from 1470, by T. W. Baldwin, 1947; 866 pages, \$20.
- History of the Peking Summer Palaces under the Ch'ing Dynasty, by C. B. Malone, 1934; 248 pages, 113 illustrations, \$4.
- The Genus Phoradendron, by William Trelease, 1916; 224 pages, 245 plates, paper, \$2; cloth, \$2.50.
- Life of the Pleistocene, by F. C. Baker, 1920; 500 pages, 56 plates, \$5.
- An Historical Study of Vestibular Equilibration, by Coleman R. Griffith, 1922; 178 pages, \$1.50.
- The Molluscan Family Planorbidae, by Frank C. Baker, 1945; 530 pages, 141 figures, \$14.50.
- Paleopathology, by Roy L. Moodie, 1923; 568 pages, 117 plates, \$7.50.
- Cahokia Mounds, III, by Warren K. Moorehead and M. M. Leighton, 1929; 176 pages, 50 plates, 6 figures, \$1.50.
- Studies in Nutrition—Influence of saltpeter. An investigation of the influence of saltpeter on the nutrition and health of man with reference to its occurrence in cured meats, by H. S. Grindley and W. J. MacNeal. Set of five volumes, cloth, \$15.
- Volume I. Discussion and interpretation of the biochemical data, 1917; 544 pages, 71 graphs, \$3.
- Volume II. Discussion and interpretation of the data relating to the health and physical condition of the men, 1929; 406 pages, 66 graphs, \$3.
- Volume III. The experimental data of the biochemical investigations, 1911; 442 pages, \$3.
- Volume IV. The experimental data of the biochemical investigations, 1912; 494 pages, \$3.
- Volume V. The data of the physical, physiological, and bacteriological observations, 1912; 547 pages, \$3.
- Illinois Contributions to Librarianship
- Volume I. Fifty Years of Education for Librarianship (papers presented for the celebration of the fiftieth anniversary of the University of Illinois Library School), 1943; 114 pages; paper, \$1; cloth, \$1.50.
- Volume II. The Program of Instruction in Library Schools, by Keyes D. Metcalf, John D. Russell, and Andrew D. Osborn, 1943; 140 pages; paper, \$1; cloth, \$1.50.

Seventy-fifth Anniversary Volumes

- William Shakspere's Petty School, by Thomas W. Baldwin, 1943; 240 pages, \$4.50.
- William Shakspere's *Small Latine and Lesse Greeke*, by Thomas W. Baldwin, 1944; two volumes, 1550 pages, \$15.75.
- Milton's Poetical Works, Illinois Facsimile Edition, edited by Harris F. Fletcher. Volume I, The Minor Poems, 1943; 465 pages, \$20.
- Principles of Systematic Psychology, by Coleman R. Griffith, 1943; 718 pages, \$4.50.
- James W. Garner's Studies in Government and International Law, edited by John A. Fairlie, 1943; 574 pages, \$7.50.
- Studies in the Text Tradition of St. Jerome's *Vitae Patrum* (Paul, Hilarion, and Malchus), edited by William A. Oldfather and others, 1943; 566 pages, \$14.50.
- Classical Studies in Honor of William A. Oldfather, by his colleagues and former students, 1943; 217 pages, \$4.

Serials under the Auspices of the Graduate School

The Journal of English and Germanic Philology, now in its forty-sixth volume, has been published by the University of Illinois since 1906. It was founded in 1897 by Gustaf E. Karsten at the University of Indiana, and was called the *Journal of Germanic Philology* until 1903. It is a quarterly, devoted to the English, German, and Scandinavian languages and literatures. The subscription rate is \$4 a year.

The following four series grew out of a general series of "University Studies" which was begun in 1900 and continued until 1913. The subscription rate for each of these series is \$4 a volume (each volume consists of four numbers).

Illinois Studies in the Social Sciences, begun in 1912, comprising monographs in economics, history, political science, and sociology.

Illinois Biological Monographs, begun in 1914, dealing with botany, entomology, zoology, and related subjects.

Illinois Studies in Language and Literature, begun in 1915, comprising monographs in linguistics and in the history of literature, culture, and ideas.

Illinois Monographs in the Medical Sciences, begun in 1935 as Illinois Medical and Dental Monographs, consisting of contributions from the Chicago departments of the University.

Other Serial Publications

The *University of Illinois Bulletin* series, issued every five days, contains Time Tables listing courses offered at Urbana in each term, the Catalog of the University, announcements of the Graduate School and the professional schools at Urbana, catalogs of correspondence courses and other extension services, pamphlets of information for new students, programs of conferences held on the campus, and numerous special announcements and reports of various departments of the University. Requests for individual issues in this series may be addressed to the Registrar at Urbana.

Aeronautics.—The Institute of Aeronautics issued its first bulletin in January, 1947. Requests for bulletins and other information concerning its publications should be addressed to the Institute, 318 Engineering Hall.

Agriculture.—Annual reports and technical bulletins of the Agricultural Experiment Station, county soil reports with soil maps, and circulars of the Extension Service in Agriculture and Home Economics (issued by the University in cooperation with the U. S. Department of Agriculture) may be obtained, without charge, by addressing the College of Agriculture, University of Illinois, Urbana.

Commerce.—The Bureau of Economic and Business Research issues bulletins, circulars, a quarterly magazine, *Opinion and Comment*, which presents discussions of current economic and business problems, and the *Illinois Business Review*, a monthly summary of business conditions in Illinois. Address requests to the Bureau, 205 David Kinley Hall, Urbana.

Community Planning.—Requests for the bulletins of the Bureau of Community Planning may be addressed to its Director, 110 Architecture Building, Urbana.

Education.—Bulletins and circulars of the Bureau of Educational Research may be obtained by addressing its Director, 300 Gregory Hall, Urbana. Annual Reports of the High School Visitor may be obtained from his office, 209 Administration Building. Studies in Higher Education are issued by the Provost of the University, 207 Administration Building.

Engineering.—Bulletins, circulars, and reprints of technical articles, by members of the staff of the Engineering Experiment Station, are obtainable from its Director, 106 Engineering Hall, Urbana.

Illinois Alumni News.—Published monthly at the University in cooperation with the Alumni Association, mailed free of charge to former students. Its editorial office is in 227 Illini Union Building, Urbana.

Labor and Industrial Relations.—The Institute of Labor and Industrial Relations issued its first bulletin in April, 1947. Requests for bulletins and other information concerning its publications should be addressed to the Institute, 424 Mumford Hall.

Small Homes Council.—Requests for bulletins of the Small Homes Council may be addressed to the Council, Mumford House, Urbana.

Student Publications.—The *Daily Illini*, newspaper edited by University students; the *Illio*, yearbook of the graduating class; the *Illinois Agriculturist*, magazine edited by students in the College of Agriculture; the *Illinois Technograph*, a quarterly edited by students in the College of Engineering.

EXTENSION SERVICES

THE DIVISION OF UNIVERSITY EXTENSION

ORGANIZED IN 1933 FOR THE PURPOSE OF EXTENDING SOME OF the services of the University to persons away from the campus, the Division of University Extension offers correspondence courses, extramural service, speech aids service, and visual aids service. Correspondence courses also are offered under contract with governmental agencies. The Division operates a co-operative extension program in high schools throughout the State.

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Courses Taught by Correspondence

Correspondence courses, equivalent to courses offered to undergraduate students in residence at Urbana, are open to applicants who can meet the University's entrance requirements, and also to persons eighteen or more years of age whose applications are approved by the Dean of University Extension. The courses are conducted by members of the faculty of the colleges and schools of the University, not by a separate staff. The instruction is individualized to meet the needs of each student. Enrollment may be made at any time in the year, and the rate at which a student progresses through a course is not fixed. Normally a course must be completed within twelve months, and it may not be completed in less than six weeks. No student may take more than three correspondence courses at one time.

The tuition fee in all courses taught by correspondence is \$5 per semester hour of credit. Additional charges are made in a few courses in which special materials are used. If a student fails to complete a course within twelve months from the date of enrollment, he may, upon the payment of an additional fee of \$5 obtain an extension of six months.

A final examination, proctored by some person approved by the Dean, is required in each course for which the student desires University credit.

Credit earned by correspondence courses in which the student has received grades of "C" or higher may be applied toward meeting the requirements for graduation from the University. As much as sixty semester hours of such credit may be counted toward a baccalaureate degree, under the following conditions: (1) if the student completes all the remaining requirements for his degree in residence at the University; or (2) if he presents acceptable residence credit for work done elsewhere and takes his senior year of work — not less than thirty semester hours — in residence at the University. A student who has earned three years of residence credit at the University may do his senior year in correspondence study, subject to meeting all the requirements for his degree as announced by his college or school.

The following is a list of the courses offered by correspondence, as of January 1, 1947. For further information, address the Dean of University Extension, University of Illinois, Urbana.

* Resigned.

ACCOUNTANCY

- x1a. Principles of Accounting.
- x1e. Principles of Accounting.
- x1b. Accounting Procedure.
- x2a. Elementary Cost Accounting.
- x2b. Intermediate Accounting.
- x13. Governmental Accounting.
- x16. Institutional Accounting.

ARCHITECTURE

- x11. History of Architecture.
- x12. History of Architecture (contd.).

BOTANY

- x6. Elementary Field Botany.

BUSINESS LAW

- x1a. Principles of Business Law.
- x1b. Principles of Business Law (contd.).

BUSINESS ORGANIZATION AND OPERATION

- x1. Industrial Organization and Management.
- x2. Marketing Organization and Operation.
- x8. Advertising.

CIVIL ENGINEERING

- x20. Highway Construction.
- x60. Bridge and Building Construction.
- x61. Structural Stresses.
- x69. Theory of Reinforced Concrete.

ECONOMICS

- x1. Principles of Economics.
- x3. Money, Credit, and Banking.
- x22. Economic History of the United States.
- x41. Economics of Labor Problems.
- x43. Personnel Management and Industrial Relations.
- x51. Public Finance.
- x70. Elements of Statistics.

EDUCATION

- x6a. Principles of Elementary Education.
- x6b. Principles of Secondary Education.
- x10a. Technic of Teaching in the Elementary School.
- x10b. Technic of Teaching in the Secondary School.
- x15. Mental Hygiene in the Schools.
- x18. Educational Measurements.
- x25a. Educational Psychology for Elementary School Teachers.
- x25b. Educational Psychology for Secondary School Teachers.
- x46. Recent Developments in the Teaching of Elementary School Subjects.

- x48. Teaching of Reading in the Elementary School.
- x49. Teaching of Arithmetic in the Elementary School.

ENGLISH

- x10a. Introduction to Poetry (mainly narrative).
- x10b. Introduction to Poetry (mainly lyric and dramatic).
- x11a. The Development of English Literature (from Anglo-Saxon to 1800).
- x11b. The Development of English Literature (from 1800 to 1900).

FRENCH

- x1a. Elementary Course.
- x1b. Elementary Course (contd.).
- x2a. Modern French.
- x2b. Modern French (contd.).

GENERAL ENGINEERING DRAWING

- x1. Elements of Drawing.
- x2. Descriptive Geometry.
- x7. Architectural Projections.
- x8. Architectural Projections (contd.).

GEOGRAPHY

- x1. Elements of Geography.
- x2. Economic Geography.

GERMAN

- x1a. Elementary Course.
- x1b. Elementary Course (contd.).
- x2a. Intermediate Course.
- x2b. Intermediate Course (contd.).

HISTORY

- x1a. Continental European History to 1815.
- x1b. Continental European History, 1815-1945.
- x3a. History of the United States to 1828.
- x3b. History of the United States, 1828-1946.
- x33b. History of Russia since 1825.

HYGIENE

- x3. Hygiene and Sanitation.
- x25. Problems in Personal and Public Health.

ITALIAN

- x1a. Elementary Course.
- x1b. Elementary Course (contd.).

JOURNALISM

- x17. History of Journalism.

LABOR

- History of the Labor Movement in the United States.
- Labor Legislation.

LATIN

- x5a. Latin Composition.
- x5b. Latin Composition (contd.).
- x11a. Elementary Course.
- x11b. Elementary Course (contd.).

MATHEMATICS

- x2. Algebra.
- x3. Algebra.
- x4. Plane Trigonometry.
- x6. Analytic Geometry.
- x7. Calculus (Differential).
- x9. Calculus (Integral).
- x16a. Differential Equations.
- x16b. Differential Equations.

MINING ENGINEERING

- x1. Mining Principles.

MUSIC

- x1a. History of Music.
- x1b. History of Music (contd.).
- x3a. Theory of Music.
- x3b. Theory of Music (contd.).

PHYSICS

- x1a. Theory of Mechanics, Heat, and Sound.
- x1b. Theory of Electricity, Magnetism, and Light.

POLITICAL SCIENCE

- x1a. American Government: Organization and Powers.

- x1b. American Government: Functions.
- x4. Municipal Government.
- x33. Recent Political Thought.

PSYCHOLOGY

- x1. Introduction to Psychology.

RHETORIC

- x1. Rhetoric and Composition.
- x2. Rhetoric and Composition (contd.).
- x6. Short Story Writing.
- x10. Business Letter Writing.

SOCIOLOGY

- x1. Principles of Sociology.
- x5. The Family.

SPANISH

- x1a. Elementary Course.
- x1b. Elementary Course (contd.).
- x2a. Modern Spanish.
- x2b. Modern Spanish (contd.).
- x3a. Introduction to Spanish and Spanish-American Literature.
- x3b. Introduction to Spanish and Spanish-American Literature (contd.).

THEORETICAL AND APPLIED MECHANICS

- x1. Statics.
- x2. Dynamics.
- x3. Resistance of Materials.

Contracts with Governmental Agencies

The University of Illinois is one of the several American universities and colleges approved by the Veterans Administration to offer correspondence courses under Public Law 16 and Public Law 346, as amended. Interested veterans may obtain detailed information by contacting their nearest Veterans Administration representative, or by writing directly to the Division of University Extension.

The University has also been selected by the United States Armed Forces Institute, an official Army and Navy school operated by War Department directive, to make correspondence courses available to men and women in the Armed Forces whose applications therefor have first been approved by the Commandant of the United States Armed Forces Institute. Lists of approved courses, together with the fee schedule applicable to members of the Armed Forces, may be obtained by writing to the Division of University Extension. They may also be obtained from the Special Service Officers at various army posts and navy bases.

An Illinois State statute provides for correspondence courses to be provided for certain individuals under the jurisdiction of the Division of Rehabilitation of the Board for Vocational Education. The Division of Rehabilitation contracts with the University for each individual student for whom it approves a correspondence course as a part of the rehabilitation program.

Extramural Service

The Extramural Extension of the University covers a wide range of educational activities. Through these activities, the University arranges for the widest possible distribution of its educational service in accord with proper standards and provides for students whose circumstances will not permit their attending classes for resident instruction.

Where a considerable group of persons has sufficient interest to warrant study of the same subject, and where conditions are favorable for class meetings for the group, it is possible for the University to furnish an instructor for the class and thus to give

these persons most of the advantages they would have if attending the class in residence. Extension class instruction is given at centers within the state where suitable arrangements may be made in advance. Correspondence is invited with groups that can organize classes of as many as fifteen students each. An extension class will usually have sixteen weekly meetings of two hours each.

The extramural courses in the University may be classified into four groups to meet certain definite needs that are apparent in this state.

(1) Education courses offered for credit in the Graduate School. These courses are in the charge of regular members of the faculty and are equivalent to courses listed with the same numbers for resident students.

(2) Courses for undergraduates offered in the interest of those persons who have adequate preliminary training but whose occupations or means will not permit their attendance at the University. Men and women who desire to pursue topics of personal interest, as well as students who find their college careers postponed or interrupted, may well avail themselves of the opportunities in this group of courses. By meeting certain requirements, students may secure credit towards a bachelor's degree in this University or universities of similar standing.

(3) The Extramural Service conducts a number of courses throughout the state for which no college credit is given. These courses are designed as general cultural courses or as vocational courses for the man or woman who is employed and desires to further his efficiency in his particular work. The courses are of college level and meet in the late afternoon or evening in various centers. Although no college credit is given for these courses, the University gives industrial points to those persons satisfactorily completing a course and also a Certificate of Completion. Approximately 100 courses are available and additional courses are being prepared to meet special needs. These courses cover the fields of agriculture, commerce, engineering and related sciences, and liberal arts.

(4) The Extramural Service has successfully organized and conducted a number of short courses. These courses are intensive and comprise work in a subject or group of allied subjects to improve the proficiency of groups in their respective fields of interest. A number of these courses have been specially designed for interested groups, as the following: a training program for employees of the bottling industry; a program for builders and contractors; a program for building and supply dealers; dairy technology and cheese making. This type of educational service varies in scope of instruction and time. Usually, the courses are conducted over a period of from three days to four weeks.

Admission Requirements.—The regulations concerning admission, credit, grades, examinations, etc., for resident students in the Graduate School apply to students taking extramural courses for graduate credit. Not more than four units of graduate credit earned in extramural courses may be counted toward the degree of Master of Arts or Master of Science. Credit earned in extramural courses is acceptable beyond a master's degree in individual cases if the approval of the Dean of the Graduate School is obtained at the time of registration for such courses.

Tuition.—The enrollment fee for courses on the graduate level is \$25 for each unit, or \$15 for a half-unit. The enrollment fee for undergraduate courses is \$5 for each semester hour of credit. The enrollment fee for non-credit courses is \$5 per industrial point. There is an additional laboratory, library, and supply fee of \$8 (\$4 for partial programs) which may be waived in part by the Dean where no instructional materials are supplied by the University.

Further information concerning extramural services may be obtained by writing Extramural Services, 725 South Wright Street, Champaign, Illinois.

Freshman Cooperative Extension Centers

During the present emergency that has resulted from the sharp increase in college enrollments, the Division of University Extension, as a part of its program in attempting to provide for this unprecedented increase, has instituted a cooperative extension program with thirty-one of the public high schools of the state. Under this program, the work of the freshman year is offered at Cooperative Extension Centers operated in these high schools.

Speech Aids Service

The Speech Aids Service was established in 1935. Through this service the Division of University Extension operates a Speakers' Bureau for the purpose of handling requests from organizations and individuals desiring to make arrangements for lectures by members of the University faculty and staff. A bulletin containing the names of available lecturers and subjects upon which they are prepared to speak will be sent on request.

For further information address the Speech Aids Service, Division of University Extension, University of Illinois, Urbana.

The Speech Aids Service also cooperates with the Illinois High School Association by administering the State Final Speech and Debate Tournament and State Dramatic Festival on the campus of the University of Illinois each spring.

Visual Aids Service

The Visual Aids Service was established in 1932 to promote and facilitate the use of visual materials in Illinois schools. In 1934 the Service became a part of the Division of University Extension.

The Visual Aids Service circulates a few standard-size lantern slides as well as motion picture films. Audio aids to instruction, in the form of disc recordings of radio programs, have been added to the materials of the Visual Aids Service. Today the library of audio-visual materials contains approximately 600 subjects on 16-millimeter silent film, 1,200 subjects on 16-millimeter sound film, 10 sets of glass lantern slides, and 100 16-inch disc recordings of radio transcriptions. It thus represents the largest and most economical source of slides, films, and radio transcriptions available to schools, adult study groups, and civic organizations in Illinois. The usual plan of lending films is on a direct rental basis. Reductions in rental rates are made to patrons within the state of Illinois on large orders of films. This is accomplished through a graded discount plan.

The Service invites schools and other educational agencies to call on it for assistance in setting up programs of visual instruction, for demonstrations on utilization of audio-visual materials, or for consultation concerning any problem relating to this field. A catalog of audio-visual materials will be sent on request. All correspondence should be addressed to the Supervisor of Visual Aids Service, 713½ South Wright Street, Champaign, Illinois.

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

Under the provisions of the Smith-Lever Act, approved by the President of the United States on May 8, 1914, and of subsequent acts, and under the terms of acceptance by the State of Illinois, the University of Illinois is cooperatively responsible for a demonstration service designed to combine the results of scientific research with approved practices on farms and in rural homes. The Extension Service in Agriculture and Home Economics employs farm and home advisers under the terms stated in memorandums of understanding with county farm and home bureaus. Extension specialists in agriculture and home economics assist the farm and home advisers in the preparation and presentation of useful material and in the carrying out of organized and approved extension programs in their respective counties, as well as in the training of local leaders to aid in this work. Thousands of volunteer local and community leaders are rendering important service in connection with the educational program sponsored by the Extension Service. A list of available publications may be obtained by addressing the College of Agriculture, University of Illinois, Urbana.

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 JAMES EDDY PRIER, D.V.M., Instructor, Veterinary Extension

County Farm Advisers

<i>County</i>	<i>Farm Adviser</i>	<i>Address</i>
Adams	S. E. MYERS	Quincy
Bond	H. H. BOUSLOG	Greenville
Boone	D. M. CHALCRAFT	Belvidere
Brown	A. S. HAAS	Mt. Sterling
Bureau	HALSEY L. MILES	Princeton
Calhoun	J. H. ALLISON	Hardin
Carroll	M. P. ROSKE	Mt. Carroll
Cass	E. E. GREER	Virginia
Champaign	W. B. BUNN	Champaign
Christian	C. S. LOVE	Taylorville
Clark	C. N. GLOVER	Martinsville
Clay	EDGAR BOOKER	Louisville
Clinton	F. M. SMITH	Breese
Coles	W. S. MYERS	Charleston
Cook	C. A. HUGHES	Arlington Heights
Crawford	D. W. FIKE	Robinson
Cumberland	CHARLES TARBLE	Toledo
DeKalb	W. CARROLL MUMMERT	DeKalb
DeWitt	H. N. MYERS	Clinton
Douglas	J. Q. SCOTT	Tuscola
DuPage	H. S. WRIGHT	Wheaton
Edgar	L. E. MCKINZIE	Paris
Edwards	J. E. MCCUE	Albion
Effingham	C. S. CUTRIGHT	Effingham
Fayette	JONATHAN B. TURNER	Vandalia
Ford	ARNOLD B. ROWAND	Melvin
Franklin	G. J. CHRISTENSON	Benton
Fulton	J. E. WATT	Canton
Gallatin	E. M. LUTZ	Ridgway
Greene	RAY H. ROLL	Carrollton
Grundy	M. E. TASCHER	Morris
Hamilton	F. B. HOPPIN	McLeansboro
Hancock	L. L. NORTON	Carthage
Henderson	A. J. REHLING	Stronghurst
Henry	K. L. FLAKE	Cambridge
Iroquois	KENNETH R. IMIG	Watseka
Jackson	W. C. ANDERSON	Murphysboro
Jasper	R. E. APPLE	Newton
Jefferson	DONALD O. LEE	Mt. Vernon
Jersey	C. T. KIBLER	Jerseyville
Jo Daviess	E. V. STADEL	Elizabeth
Johnson	BEN F. WALLACE	Vienna
Kane	A. C. JOHNSON	Geneva
Kankakee	L. D. GRAHAM	Kankakee
Kendall	W. P. MILLER	Yorkville
Knox	A. R. KEMP	Galesburg
Lake	RAY T. NICHOLAS	Grayslake
LaSalle	F. A. PAINTER	Ottawa
Lawrence	H. C. WHEELER	Lawrenceville
Lee	C. E. YALE	Amboy
Livingston	W. F. COOLIDGE	Pontiac
Logan	N. H. ANDERSON	Lincoln
Macon	J. R. GILKEY	Decatur
Macoupin	O. O. MOWERY	Carlinville

* Resigned.

<i>County</i>	<i>Farm Adviser</i>	<i>Address</i>
Madison	T. W. MAY	Edwardsville
Marion	F. J. BLACKBURN	Salem
Marshall-Putnam	P. L. LAFFEY	Henry
Mason	R. V. WATSON	Havana
Massac	F. LEO SHARP	Metropolis
McDonough	N. F. BOUSLOG (Acting)	Macomb
McHenry	W. H. TAMMEUS	Woodstock
McLean	E. G. MOSBACHER	Bloomington
Menard	L. W. CHALCRAFT	Petersburg
Mercer	E. M. EDWARDS	Aledo
Monroe	E. S. AMRINE	Waterloo
Montgomery	E. D. PETERSON	Hillsboro
Morgan	E. H. GARLICH	Jacksonville
Moultrie	PAUL M. KROWS	Sullivan
Peoria	J. L. DIAMOND	Peoria
Perry	J. G. MCCALL	Pinckneyville
Piatt	A. C. KAMM	Monticello
Pike	L. L. FUCHS	Pittsfield
Pope-Hardin	G. C. SMITH	Golconda
Pulaski-Alexander	L. B. BROOM	Mounds
Randolph	C. F. MEES	Sparta
Richland	E. J. BARNES	Olney
Rock Island	G. H. REID	Moline
St. Clair	B. W. TILLMAN	Belleville
Saline	P. T. WILSON	Harrisburg
Sangamon	EDWIN BAY	Springfield
Schuyler	ROY K. WISE	Rushville
Scott	G. E. LAMPE	Winchester
Shelby	G. F. SONS	Shelbyville
Stark	W. E. MYERS	Toulon
Stephenson	V. J. BANTER	Freeport
Tazewell	C. F. BAYLES	Pekin
Union	E. A. BIERBAUM	Anna
Vermilion	O. W. HERTZ	Danville
Wabash	H. H. LETT	Mt. Carmel
Warren	E. H. WALWORTH	Monmouth
Washington	W. D. SMITH	Nashville
Wayne	L. B. KIMMEL	Fairfield
White	THURMAN WRIGHT	Carmi
Whiteside	F. H. SHUMAN	Morrison
Will	G. WAYNE CHURCHILL	Joliet
Williamson	R. C. BROOM	Marion
Winnebago	H. R. BRUNNEMEYER	Rockford
Woodford	T. HUGH BROCK	Eureka

County Home Advisers

<i>County</i>	<i>Home Adviser</i>	<i>Address</i>
Adams	MARGARET WALBRIDGE	Quincy
Bond	MRS. C. LOUISE FOSTER	Greenville
Boone	DOROTHY PRATT	Belvidere
Bureau	KARIN L. MORSCH	Princeton
Carroll	DOROTHY FOOTITT	Mt. Carroll
Champaign	MRS. ESTHER THOR	Champaign
Christian	NORA E. BARE	Taylorville
Clark	MILDRED NUTTALL	Marshall
Clay	MARGARET M. STOUTENBERG	Louisville
Clinton	MARGARET JONES	Carlyle
Coles	MRS. BESSIE WILSON	Charleston
Cook	MRS. CLARADEHL UPHAM	Des Plaines
Crawford	BETTY LANGFORD	Robinson
DeKalb	BERNICE A. ENGELKING	DeKalb
DeWitt	MRS. MAURIETTA W. CUSEY	Clinton

<i>County</i>	<i>Home Adviser</i>	<i>Address</i>
Douglas	JEANNE N. OSBORNE	Tuscola
DuPage	MRS. ETHEL MARSHALL	Wheaton
Edgar	LAURA E. HEDDLESON	Paris
Edward	DORIS MOLLET	Albion
Effingham	MRS. VIRGINIA C. WHITE	Effingham
Ford	MRS. ELIZABETH S. ALSIP	Melvin
Franklin	MRS. LUCILLE CRADDOCK	Benton
Fulton	MRS. EDITH HUFFMAN	Canton
Greene	FRANCES ENGLAND	Carrollton
Hancock	MILDRED O. EATON	Carthage
Henderson	LIBBY HAFNER	Stronghurst
Henry	RITA SULLIVAN	Cambridge
Iroquois	BESSIE ALFORD	Watska
Jackson	JEANNETTE DEAN	Murphysboro
Jasper	MARION C. SIMON	Newton
Jersey	LILLIAN SCHRADER	Jerseyville
Kane	MRS. CHARLOTTE S. HERREN	Geneva
Kankakee	DONOVAN HESTER	Kankakee
Kendall	MRS. ALICE G. HERRON	Yorkville
Knox	MRS. JEANNE S. MOEHN	Galesburg
Lake	MRS. HELEN JOHNSON VOLK	Grayslake
LaSalle	EUREATH FREYERMUTH	Ottawa
Lawrence	MARGARET A. HUDSON	Lawrenceville
Lee	JUNE PILGRIM	Amboy
Livingston	JESSIE CAMPBELL	Pontiac
Logan	MRS. MABEL ALBRECHT	Lincoln
Macon	MRS. LULA G. KELLER	Decatur
Macoupin	DEBORAH SOLLIDAY	Carlinville
Madison	WANDA M. SWARD	Edwardsville
Marion	MRS. ELIZABETH B. BURTON	Salem
Marshall-Putnam	LOIS J. BLAND	Henry
Mason	JEANNINE SUTTER	Mason City
McDonough	MRS. HAZEL W. ADAMS	Macomb
McHenry	MRS. CLARA SWEENEY	Woodstock
McLean	MRS. JEAN K. LYSTAD	Bloomington
Menard	GALIE McDougall	Petersburg
Monroe	RUTH KNOP	Waterloo
Montgomery	HELEN BENNETT	Hillsboro
Morgan	MRS. MILDRED SEEMAN	Jacksonville
Moultrie	VIRGINIA GUTHRIE	Sullivan
Ogle	MRS. BERTHA VARNUM	Oregon
Peoria	PHYLLIS WHITE	Peoria
Piatt	LORENNIE BERRY	Monticello
Pike	HELEN HACKMAN	Pittsfield
Pulaski-Alexander	MRS. MARY H. BUTLER	Mounds
Randolph	ELLEN HILL	Sparta
Richland	MARGARET VAN SCHOIK	Olney
St. Clair	MARJORIE TABOR	Belleville
Saline	MARY E. MESCHER	Harrisburg
Schuyler-Brown	CAROLL REBBE	Rushville
Shelby	MRS. JANE M. PRITCHETT	Shelbyville
Stephenson	MRS. ENA CHESNEY	Freeport
Tazewell	MARIAN SYMPSON	Pekin
Vermilion	MRS. ORLA KEMPER	Danville
Wabash	HAZEL L. GRAVES	Mt. Carmel
Warren	CHRISTIE HEPLER	Monmouth
White	ARVENA HOLLOWAY	Carmi
Whiteside	LOUISE CASH	Morrison
Will	MRS. LUCILE G. CASTLE	Joliet
Williamson	RUTH GRANT	Marion
Winnebago	MARY E. KITCHENS	Rockford
Woodford	LUCILE HIESER	Eureka

RADIO STATION

Educational programs are broadcast daily by the University of Illinois Radio Station, W I L L, which operates on a frequency of 580 kilocycles. The power used is 5,000 watts. The studios are in Gregory Hall. The programs include broadcasts direct from classrooms, short educational discussions, music by students and faculty members, news, market quotations, and other public service reports. The Radio organization also operates W I U C, an educational, non-commercial FM station on 91.7 megacycles.

Staff

JOSEF FRANKLIN WRIGHT, A.B., Director of the Radio Station
 FRANK ELLSWORTH SCHOOLEY, B.S., Assistant Director
 JOHN RAYMOND BRUGGER, A.B., Chief Radio Engineer
 PHILIP ARCHIE SPRADLING, A.B., Chief Announcer
 KENNETH LEE CUTLER, M.Mus., Director of Music
 THOMAS VEDDER WABER, A.B., Educational Program Director

SPECIAL CONFERENCES AND SHORT COURSES

Each year the colleges and schools at Urbana conduct numerous short courses and conferences, some of them in cooperation with business and industrial organizations and other groups in Illinois. Members of the faculty provide instruction in the short courses and contribute by lectures, demonstrations, and discussions to the programs of the conferences.

College of Agriculture

Members of the faculty of the College of Agriculture participated in the programs of the following meetings at Urbana in the year 1946:

January 9-10. Illinois Cannery Fieldmen's School.
 January 21-23. Tractor Short Course for Ohio Oil Company Representatives.
 January 28-30. Tractor Short Course for Ohio Oil Company Representatives.
 February 12-14. Forty-Fifth Annual Farm and Home Week.
 February 18-23. Gas Engines Short Course for Farmers.
 March 4-8. Illinois Farm Supply Company Tractor Short Course.
 March 6-7. Food Industry Conference.
 March 12-13. Twentieth Annual Florists' Short Course.
 April 12. Illinois Swine Growers' Day.
 May 6-10. Ninth Annual Rural Pastors' Short Course.
 May 16. Illinois Feed Association Field Day.
 June 4-6. Home Economics Extension Conference.
 June 11. Illinois Seed Dealers Association.
 June 17-21. Farm Structures Refresher Course.
 June 21. Visit of Chicago Farmers to the Agricultural Experiment Station.
 June 25-26. Annual Meeting of the Illinois Crop Improvement Association.
 August 29-30. Farm Sports Festival.
 September 3-4. Pullorum Testing School.
 September 4-6. School for Flock Selecting Agents.
 September 11-12. Illinois Society of Farm Managers and Rural Appraisers.
 October 2-4. Fall Conference for Extension Workers.
 October 9. All-Ag Field Day.
 November 5-7. Dairy Manufactures Conference.
 December 10-12. Record Performance Breeders' School.
 December 30-January 4. 4-H Leaders Tractor Short Course.

College of Commerce and Business Administration

Accounting Conference.—Held in 1944, under the joint sponsorship of the College of Commerce and the Illinois Society of Certified Public Accountants. Discussion was devoted to the subject of war contract termination. The next conference is planned for 1947.

Banking Conference.—The fifth annual Banking Conference was held in 1940, in cooperation with the Illinois Bankers Association. Officers, directors, and employees of banks were invited to attend the meetings, which were also open to the public. This conference was not held during the war.

Building and Loan Short Course.—Offered for the third time in 1941, this course provided instruction for building and loan employees and junior officers. This course was not held during the war.

Insurance Short Course.—Offered for the second time in 1941, this course provided instruction for agents of fire and casualty insurance companies. This course was not held during the war.

Public Employment Service Conference.—A two-day conference held in 1946 in cooperation with the Illinois Chapter of the International Association of Public Employment Service. Members of the faculty of the College of Commerce and Business Administration participated in the technical sessions.

Real Estate Appraisal Short Course.—Held in 1943, under the sponsorship of the Illinois Tax Commission, this course dealt with the appraising of urban and rural properties in Illinois. This course was not held during the war.

College of Education

Members of the faculty of the College of Education participated in the programs of the following conferences at Urbana in the year 1946:

- June 2-3. Conference for Future Farmers of America.
- June 5-7. Conference for Teachers of Vocational Agriculture.
- June 16-18. Conference for County Superintendents of Schools.
- July 9. Conference on Education of Handicapped Children.
- August 6-8. Educational Conference.

College of Engineering

Air Conditioning Conference.—First held in 1936, and repeated in 1939. Not held since 1939.

Clay Products Plant Operators' Conference.—Held for the sixth time in 1941, under the auspices of the Department of Ceramic Engineering, in cooperation with the Illinois Clay Manufacturers' Association. This conference was discontinued during the war. In 1946 a similar meeting was held in cooperation with the Structural Clay Products Institute.

Coal Utilization Short Course.—Offered for the seventh time in 1946, by the Department of Mining and Metallurgical Engineering.

Electric Metermen's Short Course.—Offered in 1939, by the Department of Electrical Engineering, in cooperation with several power companies of Illinois. For a number of years prior to 1930 this short course was given each year in cooperation with the Illinois Electric Association. Not offered since 1939.

Enamel Forum.—Held for the first time in 1934, under the auspices of the Department of Ceramic Engineering. Similar conferences, in cooperation with the Porcelain Enamel Institute, were held until 1941. In 1942 the conference was replaced by a short course in heat treating for porcelain enamellers. The forums of the Porcelain Enamel Institute are now held in alternate years, the most recent being in 1946.

Foremen's National Defense Conference.—Held for the first time in 1941, under the auspices of the Division of University Extension. Not held since 1941.

Glass Problems Conference.—Held for the first time in 1934, under the auspices of the Department of Ceramic Engineering, in cooperation with the Chicago Section of the American Ceramic Society. This conference has been repeated several times and was last held in 1944. A conference is planned for 1947.

Highway Engineering Conference.—A three-day conference conducted by the Department of Civil Engineering in cooperation with the Illinois Division of Highways. The thirty-second conference was held in February, 1947.

Illinois Traffic Engineering Conference.—First held in 1941, sponsored by the Department of Civil Engineering and the Illinois Division of Highways. Not held since 1941.

Kitchenware Conference.—General meetings of the Technical Committee of the Enamelled Utensil Manufacturers Council began in 1944 and are held each year.

Sewage Treatment Works Operators' Short Course.—First offered in 1939, sponsored by the State Department of Public Health and the Department of Civil Engineering. The eighth course was offered in March, 1947.

Surveying Conference.—The fifth annual conference on surveying was held in 1942. Not offered since then.

Water Treatment Plant Operators' Short Course.—Offered for the first time in 1942. The sixth course was held in March, 1947.

College of Fine and Applied Arts

Community Planning Conferences.—The Bureau of Community Planning conducts community planning conferences with civic officials, planners, and laymen who are interested. Local and regional conferences have been held at various places in Illinois.

Fire College.—The Department of Architecture, cooperating with the Illinois Firemen's Association, offers a short course in fire-prevention control and extinguishment. Discussions and demonstrations include first-aid and rescue work, safety measures, hydraulics, mechanical equipment, inspections, and other preventive measures. The 1946 Fire College was held June 18-21.

High School Visitor

High School Conference.—This educational conference, which was first held in 1905, is under the direction of the High School Visitor. It has been planned so as to be of interest to those working in the field of secondary education. In addition to general session programs, provisions have been made each year for various sections to hold meetings relating to administration and supervision, the guidance of secondary school pupils, subject matter fields, and school libraries. In connection with the High School Conference, there has been an annual meeting of the All-State Orchestra and the All-State Chorus. The High School Conference has been suspended since 1943 because of transportation problems during the war period and current housing problems at Champaign-Urbana. In lieu of the High School Conference, a series of regional educational conferences have been conducted in twenty-four selected centers covering the entire state of Illinois.

Illinois Secondary School Principals' Association and Illinois High School Association.—Annual meetings of the Illinois Secondary School Principals' Association and of the Illinois High School Association are held at the University of Illinois in October and are sponsored by the Office of High School Visitor.

School of Journalism

Journalism Conference.—An all-state press conference is held annually, usually in conjunction with the annual fall meeting of the Illinois Press Association. The 1946 conference was held in Decatur on October 3-5.

Illinois College Press Association.—The School of Journalism sponsors an organization of editors and business managers of Illinois college publications, who meet in the spring and the fall of each year. The 1946 fall meeting was held in Bloomington.

Illinois Daily Newspaper Conferences.—The School of Journalism assists members of the daily newspaper associations in arranging conferences. It has had a part in annual meetings of Associated Press Editors of Illinois, United Press Editors of Illinois, Illinois Daily League, and Inland Daily Press Association.

Illinois State High School Press Association.—The annual conference of this organization of high school teachers and students engaged in publication work was held on the University campus September 13-14, 1946.

EXPERIMENT STATIONS AND RESEARCH BUREAUS

THE AGRICULTURAL EXPERIMENT STATION

BY AN ACT OF CONGRESS, APPROVED MARCH 2, 1887, THE SUM of \$15,000 a year was appropriated to each state for the purpose of establishing and maintaining, in connection with the land-grant colleges established under the Morrill Act of 1862, agricultural experiment stations "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." Under this provision the Agricultural Experiment Station of the University of Illinois was founded in 1888 and placed under the direction of the Trustees of the University.

Federal grants are received annually as follows: \$15,000 provided under the Hatch Act approved March 2, 1887; \$15,000 provided under the Adams Act approved March 16, 1906; \$60,000 provided under the Purnell Act approved February 24, 1925. The appropriation provided under the Bankhead-Jones Act, approved June 29, 1935, was \$93,841.72 for the fiscal year 1946-1947.

Investigations

Investigations are being conducted by the Agricultural Experiment Station in the improvement and economic production of crops and the mechanics of curing and storing them; the growing of fruits and vegetables; the growing of flowers under glass; methods of livestock production; principles of animal breeding and nutrition; the production and manufacture of dairy products; the control of plant and animal diseases; the adaptation of power and machinery to farm and farm-home operations; the development of buildings particularly suitable to Illinois conditions; the checking of soil erosion and the most satisfactory methods of tile drainage; the economical organization of different types of farms; the application of principles of economics to agricultural problems, particularly to those of marketing; human nutrition; and the application of all these researches to the improvement of the rural home. The great basic problem of maintaining and increasing the fertility of the soils of Illinois is being studied in the laboratory and in experimental fields located on different types of soil over the state. The results of investigations are published in bulletins, which are distributed free of charge. A list of the available publications will be supplied on request.

General Staff

HENRY PERLY RUSK, M.S., Director
WILLIAM ERNEST CARROLL, Ph.D., Associate Director
HALDANE WESLEY BEAN, M.S., Assistant to the Director
GEORGE CLEMENS DECKER, Ph.D., Entomologist
ANNA CUSHMAN GLOVER, Editor, with rank of Associate Professor
HADLEY READ, M.S., Editor and Assistant Professor, Agricultural Extension
ADRIAN WILLIAM JANES, A.B., Assistant Editor, with rank of Instructor
MARGARET PLOWMAN MCGLOTHLIN, A.M., Assistant Editor, with rank of Instructor
GEORGE FRANKLIN LUDVIK, A.B., Special Research Assistant
WILLIS NELS BRUCE, B.S., Special Research Assistant*
CURTIS LIONEL MASON, M.S., Special Research Assistant*

* Resigned.

Agricultural Economics

HAROLD CLAYTON M. CASE, Ph.D., Chief, Farm Management; Head of Department
 CHARLES LESLIE STEWART, Ph.D., D.Sc., Chief, Land Economics
 LAURENCE JOSEPH NORTON, Ph.D., Chief, Agricultural Marketing
 ROBERT CHILDERS ASHBY, Ph.D., Chief, Livestock Marketing
 PAUL EVANS JOHNSTON, Ph.D., Chief, Agricultural Economics
 GARRET LOWELL JORDAN, Ph.D., Chief, Agricultural Economics
 MARTIN LUTHER MOSHER, M.Agr., Chief, Farm Management
 ROBERT COOKE ROSS, Ph.D., Chief, Farm Management
 ELMER JOSEPH WORKING, M.S., Chief, Agricultural Economics (on leave of absence for the year)
 ROLAND WILLEY BARTLETT, Ph.D., Chief, Agricultural Economics
 DAVID EDGAR LINDSTROM, Ph.D., Chief, Rural Sociology
 JAMES BURTON ANDREWS, M.S., Chief, Farm Management
 ROY HAROLD WILCOX, Ph.D., Associate Chief, Farm Management
 JOHN ELLIOT WILLS, Ph.D., Associate Chief, Farm Management
 FORREST AUGUSTUS STEWART, M.S., Assistant Chief, Farm Management
 ROSS ANTHONY KELLY, M.S., Assistant Chief, Fruit and Vegetable Marketing
 RALPH JOSEPH MUTTI, Ph.D., Assistant Chief, Marketing
 FRANKLIN JACOB REISS, M.S., Assistant Chief, Farm Management
 WILBUR DAHL BUDDEMEIER, M.S., Assistant Chief, Agricultural Economics
 MRS. HELENA ANNA JANES, B.S., First Assistant, Agricultural Economics*
 WILLIAM NEIL THOMPSON, M.S., First Assistant, Farm Management
 ALFRED CARL RUWE, B.S., First Assistant, Farm Management
 JOHN ROBERT TOMPKIN, B.S., First Assistant, Agricultural Economics
 ALLAN GEORGE MUELLER, B.S., Assistant, Farm Management
 SCOTT HATHORN, JR., M.S., Assistant, Agricultural Economics
 JAMES SHELDON ST. CLAIR, B.S., Assistant, Agricultural Economics*
 ERNEST VAIL STEVENSON, B.S., Assistant, Agricultural Economics*
 MELVIN RUSSEL JANSSEN, B.S., Assistant, Agricultural Economics
 VINCENT IRVING WEST, B.S., Assistant, Agricultural Economics
 MAX GILMER, A.B., B.D., Assistant, Rural Sociology
 WILBERT NEEDHAM STEVENSON, B.S., Assistant, Farm Management
 FRANK DELEFF HANSING, B.S., Assistant, Agricultural Economics
 SHERMAN T. RICE, B.S., Assistant, Farm Management

Agricultural Engineering

EMIL WILHELM LEHMANN, B.S., E.E., A.E., Chief, Agricultural Engineering; Head of Department
 DEANE G. CARTER, M.S., Chief, Farm Structures
 RAY IRIS SHAWL, M.S., Chief, Farm Machinery
 ARTHUR LEIGHTON YOUNG, M.S., Associate Chief, Farm Power
 KEITH HARRY HINCHCLIFF, M.S., Assistant Chief, Farm Structures
 HARRY PAUL BATEMAN, B.S., Associate, Agricultural Engineering
 JOHN HUBERT RAMSER, B.S., Associate, Agricultural Engineering
 JACOB ARTHUR WEBER, B.S., Assistant, Agricultural Engineering
 ROBERT WILLIAM WHITAKER, B.S., Special Research Assistant, Agricultural Engineering
 KERMIT OAKLEIGH ROE, Ed.M., Assistant, Agricultural Engineering

Agronomy

WILLIAM LEONIDAS BURLISON, Ph.D., D.Agr., Chief, Crop Production; Head of Department
 CHARLES FREDERICK HOTTES, Ph.D., Consulting Plant Physiologist, *Emeritus*
 LOUIE HENRIE SMITH, Ph.D., Chief in Charge of Publications of Soil Survey, *Emeritus*§
 FREDERICK CHARLES BAUER, Ph.D., Chief, Soil Experiment Fields
 ERNEST E. DETURK, Ph.D., Chief, Soil Fertility and Soil Analysis
 RAYMOND STRATTON SMITH, Ph.D., Chief, Soil Physics and Soil Survey
 CLYDE MELVIN WOODWORTH, Ph.D., Chief, Plant Genetics
 GEORGE HARLAN DUNGAN, Ph.D., Chief, Crop Production

* Resigned. § Deceased.

- BENJAMIN KOEHLER, Ph.D., Chief, Crop Pathology (on leave of absence second semester)
- OGLE HESSE SEARS, Ph.D., Chief, Soil Biology
- DAVID CLEVELAND WIMER, Ph.D., Chief, Soil Physics
- ORVILLE THOMAS BONNETT, Ph.D., Chief, Plant Genetics
- ROGER HAMMOND BRAY, Ph.D., Chief, Soil Survey Analysis
- JOHN ELDON GIESEKING, Ph.D., Chief, Soil Physics and Soil Survey
- ROBERT WILLIAM JUGENHEIMER, Ph.D., Chief, Plant Genetics
- FLOYD HAMILTON CRANE, M.S., Associate Chief, Soil Fertility
- ALVIN LEONARD LANG, M.S., Associate Chief, Soil Experiment Fields
- ROBERT FRANCIS FUELLEMAN, Ph.D., Associate Chief, Crop Production
- LESTER TOUBY KURTZ, Ph.D., Associate Chief, Soil Survey Analysis
- HOWARD JOHN SNIDER, M.S., Assistant Chief, Soil Experiment Fields
- HERMAN L. WASCHER, M.S., Assistant Chief, Soil Survey (on leave of absence first semester)
- RUSSELL SCOTT STAUFFER, Ph.D., Assistant Chief, Soil Physics and Soil Survey
- LLOYD VINCENT SHERWOOD, Ph.D., Assistant Chief, Crop Production*
- CECIL HODGSON FARNHAM, B.S., Assistant Chief, Soil Experiment Fields
- LAWRENCE BYRNE MILLER, B.S., Assistant Chief, Soil Experiment Fields
- ALFRED UHNO THOR, M.S., Assistant Chief, Soil Fertility
- EUGENE PERRY WHITESIDE, Ph.D., Assistant Chief, Soil Physics and Soil Survey (on leave of absence first semester)
- MILO DON APPLEMAN, Ph.D., Assistant Chief, Soil Biology*
- ERNEST BENTON EARLEY, Ph.D., Special Research Assistant Chief, Soil Fertility
- RUSSELL TURNER ODELL, M.S., Assistant Professor, Soil Physics and Soil Survey Research
- ROLAND OSCAR WEIBEL, M.S., Assistant Chief, Crop Production and Plant Genetics
- JOSEPH BERNARD FEHRENBACHER, M.S., Assistant Professor, Soil Physics and Soil Survey Research
- PAUL TOWNSEND VEALE, B.S., Assistant Professor, Soil Survey Research
- CARROLL JOHN BADGER, B.S., Associate, Soil Experiment Fields
- PERCY EVERT JOHNSON, B.S., Associate, Soil Experiment Fields
- MELVIN HENRY NELSON, B.S., Associate, Soil Experiment Fields
- JOSHUA CLAYTON ANDERSON, B.S., First Assistant, Soil Fertility, *Emeritus*
- KE MING PENG, M.S., Special Research First Assistant, Soil Fertility*
- ANTON EARL ERICKSON, B.S., First Assistant, Soil Survey Research
- SIGURD WALTER MELSTED, Ph.D., First Assistant, Soil Survey Analysis
- JOHN FREDERICK RUNDQUIST, B.S., First Assistant, Crop Production
- MARTIN GIBBS, B.S., Special Research Assistant, Soil Fertility*
- WILLIAM JOHN ARMON, B.S., Assistant, Soil Experiment Fields
- MRS. PHEBE BRADBURY HINES, A.B., B.Mus., Assistant, Soil Fertility*
- DARRELL ARDEN RUSSEL, B.S., Special Research Assistant, Soil Fertility
- RUSSELL EARL HAY, JR., M.S., Special Research Assistant, Soil Fertility
- GLENN WESLEY BUZZARD, B.S., Assistant, Soil Survey Mapping*
- STANLEY ARTHUR WATSON, A.M., Special Research Assistant, Soil Fertility
- LOYAL FREDERICK BAUMAN, B.S., Special Research Assistant, Agronomy
- JOHN LUTHER HAHN, B.S., Special Research Assistant, Agronomy*
- EARL REECE LENG, M.S., Assistant, Plant Genetics
- ROBERT MCLEOD REED, B.S., Special Research Assistant, Soil Fertility

Animal Husbandry

- WILLIAM ERNEST CARROLL, Ph.D., Chief, Swine Husbandry; Head of Department (until December 1, 1946)
- JAMES LLOYD EDMONDS, B.S., Chief, Horse Husbandry
- LESLIE ELLSWORTH CARD, Ph.D., Chief, Poultry Husbandry
- HAROLD HANSON MITCHELL, Ph.D., Chief, Animal Nutrition
- ELMER ROBERTS, Ph.D., Chief, Animal Genetics
- ROBERT CHILDERS ASHBY, Ph.D., Chief, Livestock Marketing
- SLEETER BULL, M.S., Chief, Meats
- ROSCOE RAYMOND SNAPP, Ph.D., Chief, Beef Cattle Husbandry
- WILLIAM GARFIELD KAMMLADE, Ph.D., Chief, Sheep Husbandry

* Resigned.

TOM SHERMAN HAMILTON, Ph.D., Chief, Animal Nutrition
 JAKE LUTHER KRIDER, Ph.D., Associate Chief, Swine Husbandry
 CHALMERS WOODRUFF CRAWFORD, B.S., Assistant Chief, Horse Husbandry
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 ANDREW VLADIMIR NALBANDOV, Ph.D., Assistant Chief, Animal Physiology
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 FRANK SIMPSON, B.S., Assistant, Animal Nutrition, *Emeritus*
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 UPSON STANLEY GARRIGUS, M.S., Assistant, Animal Husbandry
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 WILLIAM BARBOUR NEVENS, Ph.D., Chief, Dairy Cattle Feeding
 PAUL HUBERT TRACY, Ph.D., Chief, Dairy Manufactures
 OLIVER RALPH OVERMAN, Ph.D., Chief, Dairy Chemistry
 RALPH VICTOR HUSSONG, Ph.D., Chief, Dairy Bacteriology
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Forestry

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Home Economics

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ARTHUR SAMUEL COLBY, Ph.D., Chief, Small Fruit Culture
HARRY WARREN ANDERSON, Ph.D., Chief, Plant Pathology
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 and Hygiene*

SOYBEAN LABORATORY

The United States Regional Soybean Laboratory, a cooperative agency under the Bankhead-Jones Act of 1935, has its headquarters on the Urbana campus of the University of Illinois. This laboratory is maintained by the Bureau of Plant Industry, Soils, and Agricultural Engineering of the United States Department of Agriculture, with the cooperation of the Agricultural Experiment Stations of the North Central and Southern states. Its purpose is to develop improved varieties and strains of soybeans for industrial utilization, and to conduct fundamental research on the effects of cultural practices in soybean production, through the cooperating experiment stations. Reports of its investigations are published by the U.S.D.A. at Washington, D.C. Further information may be obtained by addressing the United States Regional Soybean Laboratory, Urbana, Illinois.

Staff

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 WILLIAM B. ALLINGTON, Ph.D., Plant Pathologist
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 DEAN FERDINAND McALISTER, Ph.D., Physiologist
 DONALD WILLIAM CHAMBERLAIN, Ph.D., Assistant Pathologist
 DAVID HEUSINKVELD, M.S., Assistant Agronomist

* Resigned.

THE ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station is an organization in the College of Engineering, created by the Board of Trustees of the University in 1903, to stimulate engineering education and to investigate problems of importance to professional engineers and to manufacturing, railway, mining, and other industrial interests. It has published 366 bulletins, 51 circulars, and 35 reprints. A list of titles of the available publications will be sent on request.

Control is vested in an executive staff composed of the Director, the Assistant Director, and the heads of departments in the College of Engineering, and the Professor of Chemical Engineering. This staff is responsible for the establishment of general policies and the approval of material presented for publication. The research is conducted chiefly by full-time research professors and graduate assistants. Those employed for special investigations are engaged for a limited time on single problems.

The University normally maintains fourteen research graduate assistantships in the Engineering Experiment Station. In addition, several other assistantships are usually maintained by industrial organizations, the number varying from year to year. The assistantships are awarded to graduates of approved universities and technical schools who are prepared to undertake graduate study in engineering, physics, or applied chemistry. Holders of assistantships receive a nominal stipend and are exempt from tuition fees in courses that count for graduate credit. Not more than half of the time of these assistants during ten months of each year is required in connection with the work of the department to which they are assigned; the remainder of their time is available for graduate study. Further details concerning the research graduate assistantships will be supplied on request by the Director of the Engineering Experiment Station.

Cooperative Investigations

In addition to research conducted with University funds, cooperative investigations have been undertaken with funds supplied by outside agencies which are interested in special problems of industry. In such investigations, the University reserves the right to control the results obtained and to publish them. The funds for such cooperative investigations are paid to the University and are administered by it for the special purposes for which they are provided. The following cooperative investigations are in progress:

- (1) Warm air furnaces and furnace heating systems, in cooperation with the National Warm Air Heating and Air Conditioning Association.
- (2) Solubility studies of boiler waters, in cooperation with the Utilities Research Commission.
- (3) Lead sheath materials, in cooperation with the Utilities Research Commission.
- (4) Heating and ventilation, in cooperation with the American Society of Heating and Ventilating Engineers.
- (5) Rails investigation, in cooperation with the Association of American Railroads and the Technical Committee on Rails, American Iron and Steel Institute.
- (6) Reinforced concrete slabs, in cooperation with the Illinois State Division of Highways.
- (7) Fatigue strength of welded joints for structural steel members, in cooperation with the Welding Research Council of the Engineering Foundation and others.
- (8) Steel car wheels, in cooperation with the Technical Board of the Wrought Steel Wheel Industry.
- (9) Expansion joints for concrete pavements, in cooperation with the State of Illinois.
- (10) Steam and hot water heating, in cooperation with the Institute of Boiler and Radiator Manufacturers.
- (11) Enamel standards, in cooperation with Enameled Utensil Manufacturers Council.
- (12) Load resisting properties of plastics, in cooperation with the National Advisory Committee for Aeronautics.
- (13) Ceramic coatings for exhaust disposal systems, in cooperation with the Army Air Force.

- (14) Joints in copper plates, in cooperation with the Copper and Brass Research Association.
- (15) Corrosion in brass and copper pipe for plumbing, in cooperation with the Copper and Brass Research Association.
- (16) Stresses in hollow propeller blades, in cooperation with the Army Air Force Materiel Command, Wright Field.
- (17) Use of strontium carbonate in ceramics, in cooperation with the Barium Reduction Corporation of South Charleston, West Virginia.
- (18) Reinforced concrete footings, in cooperation with the American Iron and Steel Institute.
- (19) Shock absorbing capacity of steel, in cooperation with the Chicago Bridge and Iron Company.
- (20) Thermal stresses due to welding, in cooperation with the Chicago Bridge and Iron Company.
- (21) Properties of laminated plastics, in cooperation with the National Advisory Committee for Aeronautics.
- (22) Methods of fatigue testing and fatigue properties of plastics, in cooperation with the Monsanto Chemical Company, Plastics Division, Springfield, Massachusetts.
- (23) Wheel loads, joint bars, and rail web, in cooperation with the Association of American Railroads.
- (24) Size effect on fatigue strength of a special alloy steel, in cooperation with the Army Air Force.
- (25) Railroad roadbed stabilization, in cooperation with the Association of American Railroads.
- (26) Electrical welding research, in cooperation with the United Engineering Trustees.
- (27) Mathematical analysis of a jet propulsion principle, in cooperation with the Office of Naval Research and the Institute of Aeronautics.
- (28) Analytical investigation of aerodynamic principles for a high subsonic speed propeller, in cooperation with the Aeroproducts Division of General Motors Corporation and the Institute of Aeronautics.
- (29) Analytical investigation of aerodynamic principles for a fully supersonic speed propeller, in cooperation with the Aeroproducts Division of General Motors Corporation and the Institute of Aeronautics.
- (30) Mixing of fluid streams, in cooperation with the Office of Naval Research.
- (31) Highway problems, in cooperation with the Illinois Division of Highways.
- (32) Highway drainage, in cooperation with the Illinois Division of Highways.
- (33) Riveted and bolted structural joints, in cooperation with the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, and others.
- (34) Fundamental criteria for selecting structural metals, in cooperation with the Office of Naval Research.
- (35) Numerical and approximate methods of analysis of structural and machine elements, in cooperation with the Office of Naval Research.
- (36) Distribution of stress at the root of a notch of a bar under tensile loading, in cooperation with the David Taylor Navy Model Basin.
- (37) Design of fatigue-testing machine capable of applying varying intensity of load, in cooperation with the David Taylor Navy Model Basin.
- (38) Development of a photo-cathode sensitive to near infrared, in cooperation with the Army Air Force.
- (39) Development of a power meter for frequencies 10,000 to 36,000 megacycles per second, in cooperation with the Army Air Force.
- (40) Crystal oscillator investigation, in cooperation with the Army Air Force.
- (41) Direction of arrival of radio waves, in cooperation with the Office of Naval Research.
- (42) Wide range tunable local oscillator tubes for 7,900 to 13,400 megacycles, in cooperation with the Army Air Force.
- (43) Development of wide range tuning magnetron oscillators, in cooperation with the Army Air Force.
- (44) Accurate timing of ranging circuits, in cooperation with the Watson Laboratories.
- (45) Development of micro-wave generating tube, in cooperation with the Watson Laboratories.
- (46) Welding arc stability, in cooperation with the Office of Naval Research.
- (47) Electro-acoustical research, in cooperation with Eli Lilly and Company.

- (48) Electrical and physical properties of glass insulation materials, in cooperation with the Owens-Corning Fiberglas Corporation.
- (49) A metallurgical study of failures in copper-beryllium alloys, in cooperation with the Micro-Switch Division of First Industrial Corporation, Freeport, Illinois.
- (50) Nuclear physics, in cooperation with the Office of Naval Research.
- (51) Behavior of metals under repeated stress, in cooperation with the Office of Naval Research.
- (52) Behavior of thin shell members under load, in cooperation with the Office of Naval Research.
- (53) Study of backwater profiles, in cooperation with the U. S. Geological Survey.
- (54) Properties of cast iron at elevated temperatures, in cooperation with the American Society for Testing Materials.

Executive Staff

- MELVIN LORENIUS ENGER, M.S., C.E., Director, Professor of Mechanics and Hydraulics, and Dean of the College of Engineering
- MAURICE KENDALL FAHNESTOCK, M.S., Assistant Director and Research Professor of Mechanical Engineering
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- FRANCIS WHEELER LOOMIS, Ph.D., Professor of Physics and Head of the Department
- FRED B. SEELY, M.S., Professor of Theoretical and Applied Mechanics and Head of the Department
- HAROLD LEROY WALKER, M.S., Met.E., Professor of Metallurgical Engineering and Head of the Department of Mining and Metallurgical Engineering
- ANDREW IRVING ANDREWS, Ph.D., Professor of Ceramic Engineering and Head of the Department
- WILLIAM LITTELL EVERITT, E.E., Ph.D., Professor of Electrical Engineering and Head of the Department
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- HENRY FRASER JOHNSTONE, Ph.D., Professor of Chemical Engineering in the Department of Chemistry
- NORMAN ALWYN PARKER, M.S., M.E., Professor of Mechanical Engineering and Head of the Department
- LISLE ABBOTT ROSE, Ph.D., Editor, with the rank of Associate Professor

Research Corps

- GAIL DAYTON ADAMS, JR., Ph.D., Research Assistant Professor of Physics
- HECTOR HUNTER AIKEN, B.S., Special Research Assistant in Mechanical Engineering (on leave of absence beginning January 6, 1947)
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The Bureau of Community Planning, established in 1934, is operated as a department of the College of Fine and Applied Arts. Its purpose is to stimulate and promote public interest in community planning, to carry on research in this

* Resigned.

field, to publish the results of such research, and to make background surveys pertinent to intelligent planning of Illinois communities. It offers consulting service on planning procedure but does not make master plans or render other services usually performed by professional planners, nor can it undertake investigations or surveys for individuals. It participates from time to time in conferences on community planning.

Bulletins currently available are entitled (1) Planning of Illinois Communities; (2) Planning for Public Health; (3) Municipal Budgets for Capital Improvements; (4) The Business Man and His Regional Plan; (5) Planning Opportunities for Towns in Illinois. An occasional publication, *Planning Data*, analyzing and digesting Illinois legislation that deals with community planning, is also available.

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The Bureau of Economic and Business Research, established in 1921, is operated as the research department of the College of Commerce and Business Administration. Its primary objective is the dissemination of economic and business knowledge among the businessmen of Illinois. In this respect it endeavors to serve as a clearinghouse for information on tested business practices. Although the major part of the research is directed especially toward Illinois, the Bureau also engages in general economic research.

Fields in which research has been carried on include: marketing; banking and private finance; public finance, taxation, and governmental accounting; utilities; accounting and records; and resources and industries of the State. The results are published in the form of research bulletins, business studies, and brief special bulletins, from time to time when material is available. The Bureau also issues a quarterly magazine, *Opinion and Comment*, which is designed to present discussions of current economic and business problems in nontechnical language. The *Illinois Business Review* is a monthly summary of business conditions in Illinois.

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The Bureau of Educational Research, established in 1918, is operated as a department of the College of Education. Research is carried on by members of the staff and also by graduate students who are preparing theses for advanced degrees. It is the purpose of this bureau to conduct original investigations in the field of education, to summarize and bring to the attention of school people the results of research done elsewhere, and to be of service to the schools of Illinois in other ways. The results of its original investigations are published in a series of bulletins, and its general communications and accounts of research done elsewhere are published in a series of circulars.

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The Bureau of Institutional Research was established in 1933 as a fact-finding agency. Under the guidance of its advisory committee with the Provost as chairman, the bureau studies the teaching, research, budgetary, administrative, and other aspects of University operation in their relation to one another, to educational policies and objectives, and to the social needs of the state. Thus the bureau provides a continuous internal appraisal of the operations of the University.

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The Small Homes Council was established in 1944 for the purpose of informing the general public on matters pertaining to home design, construction, maintenance, and ownership, by means of publications and approved forms of demonstration. The activities of the Council are under the direction of an executive committee and the Coordinator. Its program includes the development and coordination of research and experiment in new fields of design, construction, materials, and human use of the home. The Council acts as an agency to

coordinate the research and teaching facilities of all departments and colleges in the University whose work touches on the problems pertaining to the home, both urban and rural. It also acts as a cooperating agency with elements of the building industry which are interested in the same fields of endeavor. The work of the Council is done by a staff and by committees whose members are drawn from the faculty of cooperating departments and colleges.

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THE UNIVERSITY OF ILLINOIS CITIZENS COMMITTEE WAS ESTABLISHED by the Board of Trustees of the University in 1941 to advise the President of the University on matters relating to the welfare of the institution, its development and services to the State, and on questions of general public policy. Essentially, the Committee is a committee of citizens, not alumni of the University, who are appointed by the Board of Trustees to serve for four years; included in the membership in an *ex officio* capacity are the present members and former members of the Board of Trustees (indicated by an asterisk in the list below), the officers and directors of the Alumni Association (page 500) and of the Dads' Association (page 501), and the members of the advisory committees of the colleges, schools, and departments of the University.

The Chairman of the Committee is appointed from its membership by the Board of Trustees on nomination of the President of the University.

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The Foundation is acting as a fiduciary agent for the University in helping finance a Staff Housing Project which will provide forty-four homes for staff members. It is also managing patents for smokeless furnaces and stoves and has applied for patents on a dentifrice which will assist in the control of tooth decay.

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ALUMNI ASSOCIATION

The Alumni Association, which has been continuously active since 1873 as an auxiliary to the University, adopted most of its present constitution in 1913. Its purpose is to encourage the continued interest of former students in one another and in the University, and to serve the University in every way possible. Its main offices, in the Illini Union Building on the campus at Urbana, are well located to coordinate its work with student and faculty activities and to provide a convenient meeting place for visiting alumni. A branch office, the Illini Center, is maintained in the LaSalle Hotel in Chicago.

All former students and all faculty members, past and present, are eligible for membership in the Alumni Association. The annual membership fee is \$3. Life membership is \$60. The officers are elected annually. The directors serve terms of three years each.

The monthly magazine, *Illinois Alumni News*, has a circulation of about 78,000, including more than 20,000 Illini veterans of World War II. A staff is constantly employed to keep accurate records of the addresses and other facts concerning former students, who number approximately 150,000.

In matters concerning alumni relations the Alumni Association cooperates with the University of Illinois Foundation and the Athletic Association, as well as with the colleges, schools, and departments of the University.

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 WILLIAM H. RICE, Field Director
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ATHLETIC ASSOCIATION

Intercollegiate athletics, intramural sports, and other athletic activities for men in the University are administered by the Athletic Association, which was first organized in 1883 and has been under faculty control since 1891. Under its by-laws as amended in 1939, its board of directors consists of seven members, who are appointed annually by the Trustees of the University on recommendation of the President of the University. Four directors are members of the faculty, and three are non-faculty members of the Alumni Association. The officers of the Association consist of a president, vice-president, and secretary, who are elected annually by the directors from their own membership, and a treasurer and a business manager, who are also elected by the directors.

The funds of the Athletic Association are handled under regulations adopted by the Trustees of the University, and an annual budget of anticipated income and expenditures is submitted to the Trustees for approval. Sales of tickets for athletic events are audited by a representative of the Comptroller of the University, and an annual audit of the accounts of the Association is made by a public accountant approved by the Trustees.

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* Resigned.

DADS' ASSOCIATION

The Dads' Association is an informal organization of fathers of students of the University. It was formed in 1922 and until the recent war held annual meetings on the campus on Dads' Day. Officers and Directors are elected to serve as an executive committee for the Association between meetings. It is expected that the organization, inactive during the war, will resume its activities in 1947.

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BOARD OF EXAMINERS IN ACCOUNTANCY

Under an act of the General Assembly in 1943, which supersedes the original Accountancy Act of 1903, and the Public Accounting Act of 1927, the University of Illinois is entrusted with the examining of applicants for certificates of Certified Public Accountant in this state. To carry out the provisions of the law, the Board of Trustees appoints a board of three examiners to prepare, conduct, and grade examinations, and, with the approval of the Department of Registration and Education, a special board of five members to pass upon the qualifications and examine applicants with ten years of experience who hold certificates of registration as public accountants in Illinois by waiver or oral examination, under the Act of 1927. The President of the University appoints a University committee on accountancy to pass upon applicants who hold C.P.A. certificates of other states or who possess the Illinois public accountant certificate under the Act of 1927 on the basis of the regular semi-annual written examination, and in other ways to act as the President's agent in administering the Act. Each applicant for the C.P.A. certificate by written examination is required to pass examinations in the theory of accounts, commercial law, auditing, and practical accounting.

The Illinois Society of Certified Public Accountants has offered annually a gold medal and a silver medal to be awarded, respectively, to the persons the board of three examiners has certified as having passed the C.P.A. written examinations with the highest and the next highest total marking in all subjects.

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STATE SCIENTIFIC SURVEYS

UNDER AN ACT OF THE GENERAL ASSEMBLY OF ILLINOIS ENTITLED "The Civil Administrative Code," in 1917, the functions and duties formerly exercised by the scientific surveys located at the University of Illinois were vested in divisions of the State Department of Registration and Education, with the proviso that they continue to be exercised at the University of Illinois. These divisions are the State Natural History Survey, the State Water Survey, and the State Geological Survey.

The State Board of Natural Resources and Conservation, acting through subcommittees composed of the Director of the Department of Registration and Education, the President of the University of Illinois or his representative, and one or more expert advisers especially qualified, decides all matters pertaining to these surveys, including research, investigational and scientific work, selection and appointment of the members of the scientific staff, and cooperation with the University in the use of scientific staff and equipment, with allied divisions and departments of the government, and with private or other research boards or institutions.

Board of Natural Resources and Conservation

Ex Officio Members

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GEORGE DINSMORE STODDARD, Ph.D., Litt.D., L.H.D., LL.D., President of the University

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CARL GOTTFRIED HARTMAN, Ph.D., Professor of Zoology and Physiology.....Biology
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of Chicago.....Geology
LEWIS HANFORD TIFFANY, Ph.D., Professor of Botany, Northwestern
University.....Forestry

STATE NATURAL HISTORY SURVEY DIVISION

Organized under the Civil Administrative Code, the State Natural History Survey Division is a merger of the former office of State Entomologist of Illinois and the Illinois State Laboratory of Natural History, which originated in 1862 as the Museum of the State Natural History Society. The office of State Entomologist was established by an act of the Legislature in 1867.

It is the duty of the Natural History Survey Division to conduct a complete biological survey of Illinois, giving preference to subjects of educational and economic importance, and to publish, from time to time, reports covering the entire field of zoology and botany of the State. It is likewise the duty of the Natural History Survey Division to investigate the entomology of the State, especially all insects dangerous or injurious to agricultural or horticultural plants and crops, livestock, nursery trees and plants, products of truck and vegetable gardens, shade trees and other ornamental vegetation of cities and villages, products of mills, contents of warehouses, and the public health; to conduct experiments with methods for the prevention, arrest, abatement, and control of insects injurious to persons or property, and instruct the people by lecture, demonstration, or bulletin in the best methods of preserving and pro-

tecting their property and health against injuries by insects; and to publish from time to time articles on the injurious and beneficial insects of the State.

The publications to date are as follows: the *Bulletin*, a series comprising over 13,300 printed pages and now beginning its twenty-fourth volume; the *Circular*, a series of 41 educational and instructional pamphlets; *Biological Notes*, a series of seventeen mimeographed or planographed reports on minor investigations; the *Manual*, an educational series of which three volumes, *Fieldbook of Illinois Wildflowers*, *Fieldbook of Illinois Land Snails*, and *Fieldbook of Native Illinois Shrubs*, have been published; two volumes of final reports on the birds of Illinois; one volume, together with an atlas, on the fishes of Illinois; and numerous technical and educational pamphlets on special topics. A list of the publications currently available will be sent on request.

Large collections, particularly of Illinois material, have been accumulated by the Natural History Survey and permanently preserved for comparison and study. The main insect collection consists of more than one and a half million insects, as follows: 595,000 pinned specimens, 29,000 slide preparations, and over 1,000,000 in vials. The collection includes type specimens of about 2,700 species and is especially rich in material of immature stages. The zoological collection contains reference material of both vertebrate and invertebrate groups, notable inclusions being 30,000 specimens of larger Crustacea, 60,000 mollusks, some 150,000 fish in alcohol and formalin, and 62,500 envelopes of fish scales. Vertebrae of 700 fish and scales of 14,000 fish have been prepared for age determination. Botanical material includes 30,000 specimens and 2,000 permanently mounted microscopic slides of fungous and bacterial plant parasites, a herbarium of 20,000 plant specimens exemplifying the Illinois flora and 625 vials of seed samples. The collections are augmented by a quantity of bottles, vials, and packages of miscellaneous material. In addition to actual specimens, the Survey has in its files many thousands of records concerning the fauna and flora of Illinois, including an extensive statistical record covering the variations in disease epidemics attacking the principal crops of the state during the past 24 years and a file of information on most streams and many natural and artificial lakes of the state.

The main offices and laboratories are on the University campus at Urbana, in the Natural Resources Building, the first unit of which was completed in 1940. South of this building is an experimental greenhouse and service building especially designed for research on plant diseases and insect pests. Entomological field stations are at Des Plaines and Carbondale. Research facilities, including specially equipped laboratory buildings, are located at the Chautauqua National Wildlife Refuge, near Havana, and at Fox Ridge State Park, near Charleston, for studies in wildlife and other renewable natural resources. Additional experimental wildlife areas are maintained at Lake Glendale, near Dixon Springs, at Pere Marquette Wildlife Experimental Area and Migratory Waterfowl Refuge, near Grafton, and many other places in Illinois. A laboratory boat and attendant craft used for studies in aquatic biology, as well as an automobile trailer, are located in various parts of the state as the work requires.

Close cooperative relations are maintained with the other research divisions of the Department of Registration and Education, the biological departments of the University, the Illinois Agricultural Experiment Station, and various conservational, biological, and agricultural bureaus or departments of the state and national governments.

Committee of the Board of Natural Resources and Conservation

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 LEWIS HANFORD TIFFANY, Ph.D., Professor of Botany, Northwestern University

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 MRS. BESSIE BALL HENDERSON, M.S., Assistant to the Chief

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 JAMES WILBUR APPLE, M.S., Northern Field Entomologist
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 GEORGE FRANKLIN LUDVIK, A.M., Special Research Assistant in Entomology
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Wildlife Experimental Areas Section

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 HAROLD CARSTEN HANSON, M.S., Assistant Game Technician
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 ROBERT EDWARD HESSELSCHWERDT, A.B., Assistant Technical Photographer (on leave of absence)

Technical Library

MARGUERITE SIMMONS, A.M., M.S., Technical Librarian

Consultants

HOWARD K. GLOYD, Ph.D., Director of the Museum, Chicago Academy of Sciences
 CLIFFORD H. POPE, B.S., Curator of Amphibians and Reptiles, Chicago Natural History Museum

Cooperative Staff

(In cooperation with the State Department of Conservation and the
 United States Fish and Wildlife Service)

CLAYTON COLE SWEARS, M.F., Project Leader
 ARCHIBALD B. COWAN, B.S.F., Assistant Project Leader

STATE WATER SURVEY DIVISION

The State Water Survey originated in the Chemistry Department of the University of Illinois in 1895, when a chemical survey of the water resources of Illinois was begun. An act of the General Assembly in 1897 authorized the continuance of the work and directed the Trustees of the University to establish a chemical and biological survey of the waters of the state. In 1911 the legislature made an increased appropriation and specified additional duties. Under the Illinois Civil Administrative Code enacted in 1917, the State Water Survey became a division of the State Department of Registration and Education. Its offices and laboratories are in the Noyes Laboratory of Chemistry on the Urbana campus of the University.

The Civil Administrative Code of 1917 directs that the State Water Survey Division, cooperating with other divisions, shall investigate and study the natural resources of the state; prepare printed reports and furnish information fundamental to their conservation and development; cooperate with similar departments of other states and the federal government; study the geological formations of Illinois with reference to its resources in mineral and artesian water; cooperate with the United States Geological Survey in the collecting, recording, and printing of data on water resources, including stream-flow measurements; collect facts concerning the volume and flow of underground and surface waters of Illinois, and determine the mineral qualities of water from different geological formations and surface water for the various sections of the state; publish, from time to time, the results of its investigations of the mineral qualities, volumes, and flow of underground and surface waters, to the end that the available water resources of the state may be better known; make mineral analyses of samples of water from municipal or private sources; consider and decide all matters pertaining to water and water resources and allied investigational and scientific research; cooperate with the University in the use of scientific staff and equipment; and cooperate with the various departments in research, investigational, and scientific work useful in the prosecution of the work of any department.

Thirty-six bulletins and twenty-three circulars have been published by the State Water Survey, in which are reported its investigations of water resources of Illinois and methods for the treatment of water and of liquid wastes.

Committee of the Board of Natural Resources and Conservation

FRANK G. THOMPSON, Director, State Department of Registration and Education
GEORGE DINSMORE STODDARD, Ph.D., Litt.D., L.H.D., LL.D., President of the University
ROGER ADAMS, Ph.D., D.Sc., Professor of Organic Chemistry and Head of the Department
LOUIS R. HOWSON, B.S., C.E., Consulting Engineer, Chicago

Staff of the State Water Survey Division

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MAX SUTER, Ph.D., Engineer and Head, Engineering Research Subdivision
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HARRISON EDWARD ROMINE, B.S., Associate Engineer
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VIRGINIA MAY WISEGARVER, B.S., Principal Engineering Assistant
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 LAWRENCE LEROY STEWART, Junior Engineering Assistant
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 MRS. WILMA LANDIS PRINTY, B.S., Chemical Analyst
 MRS. IVA MAE WEST, B.S., Chemical Analyst

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STATE GEOLOGICAL SURVEY DIVISION

The State Geological Survey Division of the State Department of Registration and Education was established to study the geological formations of Illinois with reference to the resources of coal, ores, clays, petroleum, gas, water-bearing strata, building stones, cement-making materials, materials suitable for use in construction of roads, and other products; and with reference to the education of the people of the state. It publishes bulletins describing the state's geological and mineral resources, and topographic and geological maps. It serves the mining, chemical, metallurgical, manufacturing, and construction industries, both directly and indirectly, in numerous ways. It cooperates with the United States Geological Survey in the preparation of a topographic map of Illinois, and with various other federal departments, and serves other state departments and divisions and the universities and colleges of the state, by supplying geologic and topographic information.

The offices and most of the laboratories of the State Geological Survey are located in the specially equipped Natural Resources Building, which was completed in 1940, on the south campus of the University. A special building for large-scale experimentation, known as the Geological Survey Laboratory, was constructed in 1940. Its staff includes specialists in scientific and technologic research in the geology, geochemistry, geophysics, and mineral economics of the mineral resources of the state and their products. Its laboratories in chemistry, physics, microscopy, X-ray analysis, and spectroscopy, which were established in 1931, supplement its field investigations in meeting the need of changing technology.

Publications include 71 bulletins, 1 monograph, 33 bulletins in the series of *Illinois Mining Investigations*, 122 reports of investigations, 54 issues of *Illinois Petroleum*, 3

reports in the educational series, and 129 circulars, as well as short excerpts, press bulletins, oil and gas drilling reports, and numerous drainage, topographic, structural, and geologic maps. A list of available publications will be sent on request.

During the current year attention has been given to: the study of the coal resources of Illinois, through field studies and compilation of mine and drilling data, with special attention to the problem of protecting coal mines and coal seams from damage by improperly drilled or improperly plugged oil wells, and at the same time to the development of geological information to aid in the discovery of new oil and gas pools; prosecution of fundamental research on coal, its constitution and its physical and chemical properties; investigation of methods for producing better stoker fuel; demonstration of the commercial feasibility of the manufacture of smokeless briquettes from Illinois coals; research on the manufacture of metallurgical coke from Illinois coals; study of areas having possible coal for strip mining; study of mine-roof conditions in Illinois mines; study of areas known or thought to be favorable for production of oil and gas; studies of repressuring and other methods of improved recovery of oil in the Illinois oil fields; scouting of drilling wells; preparation of development maps of active areas in Illinois oil fields; detailed field studies to locate additional supplies of fluorspar, used in open-hearth steel smelting, in the making of aluminum, and in the chemical industry; field investigations to locate additional sources of lead and zinc; studies in the utilization of the limestones, sandstones, and shales of Illinois; laboratory investigation of the physical and chemical properties of Illinois clays; research on bonding clays, and on treatment of clays for lightweight refractories; preparation of a statistical report of Illinois mineral industry; geological problems encountered in highway construction; geologic conditions at sites for public dams, bridges, tunnels, conservation lake sites, etc.; examination of well cuttings, interpretation of well logs, and correlation of strata encountered in deep borings; greatly expanded studies, involving many new techniques, of the geology and production of subsurface water supplies; paleontological and stratigraphic studies of the Cambrian, Ordovician, Silurian, Mississippian, Pennsylvanian, and Pleistocene systems; paleobotanical studies of the Pennsylvanian system; micropaleontological studies of the pre-Mississippian, Mississippian, and Pennsylvanian; publication of a revised edition of the geologic map of Illinois; detailed study and mapping of the areal geology of certain quadrangles, each covering approximately 225 square miles; writing of educational bulletins; and furnishing of geologic information and advice to mineral operators, manufacturers, construction engineers, and citizens of the state.

The topographic mapping program has been carried forward; in 1946 mapping was completed in the Augusta, Buckley, Camp Point, Crete, Fairfield, Kansas, Kimmunity, Mendon, Morrisonville, Muscatine, Paris, Peotone, Wapello, and Woosung quadrangles, and was in progress in the Camp Grant, Coal Valley, Davenport, Edwardsville, Milan, Pana, Rockford, Silvis, and Wood River quadrangles. Horizontal and/or vertical control was extended in the Alton, Barrington, Bethalto, Buckley, Camp Grant, Collinsville, Coal Valley, Crete, Cullom, Davenport, Dunlap, Edwardsville, Elgin, Geneva, Grays Lake, Joliet, Kings, Marine, McHenry, Milan, Morris, Muscatine, Orion, Pana, Peoria, Rockford, St. Jacob, Silvis, Spring Bay, Wapello, Wheaton, Wilmington, Wood River, and Yorkville quadrangles. The final maps for the Albion, Ashley, Gilman, Ramsey, and Shelbyville quadrangles were issued.

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Further information may be obtained from the office of the Retirement System, 305 Administration Building, Urbana, Illinois.

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DEGREES, HONORS, AND PRIZES

DEGREES CONFERRED IN 1946

EXPLANATION.—The degrees in the following lists were conferred in June, 1946, unless reference is made to another date by index numbers as follows:

¹ Degree conferred in February, 1946.

³ Degree conferred in August, 1946.

² Degree conferred in March, 1946.

⁴ Degree conferred in September, 1946.

Honors at graduation (see list beginning on page 533) are indicated as follows:

* With honors.

*** With highest honors.

** With high honors.

T¹ With high tutorial honors.

Summary of Degrees Conferred in 1946

Honorary Degrees	College of Engineering
LL.D.—(June)..... 2	B.S.—Aeronautical Engineering (June)..... 1
<i>Total, Honorary Degrees</i> 2	B.S.—Aeronautical Engineering (September)..... 1
College of Agriculture	B.S.—Agricultural Engineering (June)..... 3
B.S.—Agriculture (February)..... 4	B.S.—Ceramic Engineering (June)..... 4
B.S.—Agriculture (June)..... 29	B.S.—Ceramic Engineering (August)..... 1
B.S.—Agriculture (August)..... 5	B.S.—Ceramic Engineering (September)..... 2
B.S.—Agriculture (September)..... 14	B.S.—Ceramics (February)..... 1
B.S.—Dairy Technology (June)..... 1	B.S.—Ceramics (June)..... 3
B.S.—Dairy Technology (September)..... 1	B.S.—Ceramics (September)..... 2
B.S.—Home Economics (February)..... 12	B.S.—Civil Engineering (February)..... 20
B.S.—Home Economics (June)..... 48	B.S.—Civil Engineering (June)..... 34
B.S.—Home Economics (August)..... 10	B.S.—Civil Engineering (September)..... 9
B.S.—Home Economics (September)..... 3	B.S.—Electrical Engineering (February)..... 19
B.S.—Vocational Agriculture (June)..... 2	B.S.—Electrical Engineering (June)..... 16
B.S.—Vocational Agriculture (August)..... 1	B.S.—Electrical Engineering (September)..... 6
B.S.—Vocational Agriculture (September)..... 2	B.S.—General Engineering (June)..... 2
<i>Total, College of Agriculture</i> 132	B.S.—General Engineering (September)..... 4
College of Commerce and Business Administration	B.S.—Mechanical Engineering (February)..... 21
B.S.—Accountancy (February)..... 5	B.S.—Mechanical Engineering (June)..... 24
B.S.—Accountancy (June)..... 29	B.S.—Mechanical Engineering (September)..... 25
B.S.—Accountancy (September)..... 18	B.S.—Metallurgical Engineering (February)..... 1
B.S.—Banking and Finance (February)..... 1	B.S.—Metallurgical Engineering (June)..... 2
B.S.—Banking and Finance (June)..... 1	B.S.—Metallurgical Engineering (September)..... 10
B.S.—Banking and Finance (September)..... 1	B.S.—Mining Engineering (February)..... 1
B.S.—Commerce and Law (February)..... 2	B.S.—Mining Engineering (June)..... 1
B.S.—Commerce and Law (June)..... 4	B.S.—Mining Engineering (September)..... 1
B.S.—Commerce and Law (September)..... 1	B.S.—Sanitary Engineering (February)..... 1
B.S.—Commercial Teaching (June)..... 5	B.S.—Sanitary Engineering (June)..... 1
B.S.—Commercial Teaching (September)..... 1	<i>Total, College of Engineering</i> 216
B.S.—Economics (February)..... 1	College of Fine and Applied Arts
B.S.—Economics (September)..... 1	B.S.—Architectural Engineering (February)..... 3
B.S.—General Business (February)..... 1	B.S.—Architectural Engineering (June)..... 6
B.S.—General Business (June)..... 2	B.S.—Architectural Engineering (September)..... 4
B.S.—General Business (September)..... 1	B.S.—Architecture (February)..... 3
B.S.—Industrial Administration (February)..... 1	B.S.—Architecture (June)..... 6
B.S.—Industrial Administration (June)..... 2	B.S.—Architecture (September)..... 5
B.S.—Industrial Administration (September)..... 8	B.S.—Music Education (February)..... 2
B.S.—Management (February)..... 27	B.S.—Music Education (June)..... 15
B.S.—Management (June)..... 13	B.Mus.—(June)..... 11
B.S.—Management (September)..... 2	B.Mus.—(September)..... 3
B.S.—Marketing (February)..... 9	B.F.A.—Art Education (June)..... 6
B.S.—Marketing (June)..... 7	B.F.A.—Art Education (September)..... 2
B.S.—Marketing (September)..... 7	B.F.A.—Commercial Design (February)..... 1
B.S.—Public Affairs (June)..... 2	B.F.A.—Commercial Design (June)..... 1
<i>Total, College of Commerce and Business Administration</i> 145	B.F.A.—Commercial Design (September)..... 2
College of Education	B.F.A.—Industrial Design (February)..... 3
B.S.—Education (February)..... 18	B.F.A.—Industrial Design (June)..... 5
B.S.—Education (June)..... 65	B.F.A.—Industrial Design (September)..... 1
B.S.—Education (August)..... 15	B.F.A.—Landscape Architecture (February)..... 1
B.S.—Education (September)..... 11	B.F.A.—Landscape Architecture (June)..... 2
B.S.—Industrial Education (February)..... 2	B.F.A.—Painting (February)..... 2
B.S.—Industrial Education (June)..... 1	B.F.A.—Painting (June)..... 2
B.S.—Industrial Education (August)..... 1	B.F.A.—Painting (September)..... 4
B.S.—Industrial Education (September)..... 2	<i>Total, College of Fine and Applied Arts</i> 90
<i>Total, College of Education</i> 115	

Summary of Degrees Conferred in 1946 (continued)

School of Journalism		Graduate School (Urbana)	
B.S.—(February)	10	Ph.D.—(February)	11
B.S.—(June)	41	Ph.D.—(June)	33
B.S.—(August)	3	Ph.D.—(September)	28
B.S.—(September)	7	Ed.D.—(September)	1
<i>Total, School of Journalism</i>	<u>61</u>	Ed.M.—(February)	3
College of Law		Ed.M.—(August)	3
B.S.—(June)	1	Ed.M.—(September)	3
B.S.—(September)	1	M.S.W.—(September)	1
LL.B.—(February)	2	Ch.E.—(June)	1
LL.B.—(June)	16	C.E.—(June)	1
LL.B.—(September)	17	E.E.—(June)	1
J.D.—(February)	5	Mech.E.—(June)	2
J.D.—(June)	1	A.M.—(February)	14
J.D.—(September)	2	A.M.—(June)	50
<i>Total, College of Law</i>	<u>45</u>	A.M.—(August)	58
College of Liberal Arts and Sciences		A.M.—(September)	41
A.B.—Liberal Arts and Sciences (February)	49	M.S.—(February)	25
A.B.—Liberal Arts and Sciences (June)	238	M.S.—(June)	88
A.B.—Liberal Arts and Sciences (August)	19	M.S.—(August)	51
A.B.—Liberal Arts and Sciences (September)	50	M.S.—(September)	67
A.B.—Home Economics (February)	1	M.Mus.—(February)	2
A.B.—Home Economics (June)	2	M.Mus.—(June)	3
A.B.—Teaching of English (September)	1	M.Mus.—(August)	1
B.S.—Liberal Arts and Sciences (February)	19	M.Mus.—(September)	4
B.S.—Liberal Arts and Sciences (June)	62	<i>Total, Graduate School (Urbana)</i>	<u>492</u>
B.S.—Liberal Arts and Sciences (August)	7	<i>Total, Degrees Conferred at Urbana</i>	<u>1,995</u>
B.S.—Liberal Arts and Sciences (September)	27	College of Dentistry	
B.S.—Applied Sciences (February)	1	B.S.—Dentistry (February)	2
B.S.—Chemical Engineering (February)	3	D.D.S.—(March)	1
B.S.—Chemical Engineering (June)	6	D.D.S.—(June)	41
B.S.—Chemical Engineering (September)	4	<i>Total, College of Dentistry</i>	<u>44</u>
B.S.—Chemistry (February)	5	College of Medicine	
B.S.—Chemistry (June)	4	B.S.—Medicine (March)	8
B.S.—Chemistry (August)	1	B.S.—Medicine (June)	99
B.S.—Chemistry (September)	1	B.S.—Occupational Therapy (February)	7
B.S.—Home Economics (February)	1	B.S.—Occupational Therapy (June)	3
<i>Total, College of Liberal Arts and Sciences</i>	<u>501</u>	M.D.—(March)	1
Library School		M.D.—(June)	173
B.S.—Library Science (June)	37	<i>Total, College of Medicine</i>	<u>291</u>
B.S.—Library Science (August)	20	College of Pharmacy	
B.S.—Library Science (September)	14	B.S.—(March)	1
<i>Total, Library School</i>	<u>71</u>	B.S.—(June)	11
School of Physical Education		<i>Total, College of Pharmacy</i>	<u>12</u>
B.S.—(February)	3	Graduate School (Chicago)	
B.S.—(June)	24	M.S.—(June)	1
B.S.—(September)	5	<i>Total, Graduate School (Chicago)</i>	<u>1</u>
<i>Total, School of Physical Education</i>	<u>32</u>	<i>Total, Degrees Conferred in Chicago</i>	<u>348</u>
Division of Special Services for War Veterans		TOTAL DEGREES IN 1946	<u>2,343</u>
B.S.—(February)	10		
B.S.—(June)	33		
B.S.—(August)	11		
B.S.—(September)	39		
<i>Total, Division of Special Services for War Veterans</i>	<u>93</u>		

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(In Liberal Arts and Sciences)

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Albrecht, Miriam Jean	Dillavou, George Jackson ⁴	Johnson, Beverly Louise
Alby, Charlotte Ruth ³	Dobson, Adell Esther	Johnson, James Grosvenor ¹
Allen, Mary Anne ³	Dreikurs, Eric ³	Jolly, Barbara Wallace ¹
Anderson, Daniel Clark ³	Dunn, Gertrude Edith	Jordan, Vincent Anthony
Anderson, Leonard Walter	Dyadak, Adam Francis	Joseph, Evelyn ³
Andich, Carol B. ⁴	Ecker, Milton Ernest ⁴	Kaffie, Marilyn Jo
Anson, Lyman	Edie, Robert Dean ¹	Kain, Rita Ann ²
Armour, Shirley Anne	Esch, Vera Christine ³	Kantor, Harry ^{1,1}
Atchison, Jean	Eslinger, Dorothy Osborne	Kelley, Don Wayne
Atkinson, Barbara Jean	Falkoff, Esther Penelope [*]	Kelly, William Joseph ⁴
Baechtold, Christie Ann	Farlow, Ida Mae ^{**}	Kimbark, Jacqueline Elanore
Bailey, Helen ⁴	Fergrieve, Dorothy Lucille	Kimbrell, Robert Clair ¹
Baker, Margaret Lee ³	Finger, Marie Sherley	King, Muriel Lorraine
Barbre, Gloria Ellen	Fink, Carolyn Bea	Klavik, Thomas Gary
Barnett, Elizabeth Jean ¹	Fishman, Lorraine Marcia	Klein, Jean Betty [*]
Baron, Evelyn Claire	Fossel, Agnes Bernice ¹	Kliker, Paul Israel ^{**4}
Barsy, Herbert ⁴	Fralay, Karyl Jane ¹	Koehler, Alice Gene
Baskin, Bernice Barbara ^{*1}	Framberg, Louise Evelyn ¹	Koepke, Carol Winifred ^{***}
Beal, Marion Lee ^{****}	Francis, Joseph Lewis	Kofoed, Jeanne Dolores
Berkowitz, Marion	Frank, Beverly Doris	Kolpack, Sylvia Eleanor
Bernard, Audrey Louise ^{**1}	Frankel, Nancy Patricia	Kray, Mitzi Fleishman ⁴
Birch, Barbara Jean ¹	Franklin, Constance May ^{**3}	Krejci, Edward John ¹
Bimling, Lois Lee	Freek, William Stewart	Kristy, Norton Frank
Bloom, Sally Jean	Friedrich, Lois Marie	Kuhn, Beryl Mae ⁴
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Burdick, Annabelle Fae ¹	Glick, Marie Freise ³	Lewis, Jean Hersman
Burgess, Richard Norman ⁴	Glidden, Mary Ann	Lewis, Mary Evelyn ⁴
Buzzell, Miriam Virginia ⁴	Goldmann, Ursula Beate	Lewis, Ruth Lorena
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Choice, Mattie Bernice	Hagstrom, Anita Virginia ¹	Lucas, Marilyn N.
Christian, Lucy Dail	Haines, Betty Elinor	Lueck, Fred John ¹
Cirlin, Vivian Rosylin ¹	Hall, Arthur Raymond, Jr. ⁴	Maack, Myrtle Evelyn
Clark, Norma Jean	Hall, Hubert Ellsworth, Jr. ⁴	Mabel, Dorothy
Classen, Nancy Marie	Hansen, Barbara Jean	MacDonald, Mary Jane ^{**}
Claybrooks, Robert Ernest ¹	Harlan, Virginia Joyce	Mamet, Henry Harold ⁴
Clayton, Barbara Jean	Harry, Martha Louise	Mann, Edward David ⁴
Clutter, Virginia Kuemmel	Harvey, Barbara Ellen	Mann, Richard Evans
Coe, Molly Ann	Hay, Robert Thornton ⁴	Marcus, Ida Nancy ^{**}
Coldwell, Philip Edward	Hazen, Marian Louise ¹	Martin, Bernard Vincent
Colen, Barbara Helene	Head, Glenn Oakes	Matteson, Constance June
Collier, Dorothy Mae	Heller, Cara Margery	McCormack, Drexel Eugene ¹
Collins, Betty Gorozdos	Hendel, Catharine Jane ⁴	McGinnis, Maxine
Colter, Margaret Cummings ⁴	Henning, Warren Kenyon ¹	McHatton, Vivian LaJean
Colwell, Manrice Joseph ¹	Hersh, Charles Karrer ¹	McMahon, Shirley Louise ¹
Conley, Phyllis	Hess, Anita Joy	Medendorp, Ruth Louise
Constantine, Roslyn Elaine	Hines, Evelyn Bernice	Meers, June Marian
Correll, Flora Arlene ^{**}	Hoffman, Wayne Melvin ^{**}	Meister, Wayne Raymond
Crane, Paula Singleton ⁴	Hoit, Anne Lu	Mentzer, Richard Lynn ⁴
Dana, Gloria	Hollon, Esther Jeanne	Merrifield, Jean
Danner, Hazel Damisch	Hoover, Marjorie Jane	Metzger, Virginia May ³
Davidson, Helen Jean	Howerton, Miriam Jean	Meurisse, Mitzi Dorothy
Davis, Gloria Sharon	Hubka, Emil Francis ^{**}	Meyers, Bertram David
Davis, Jane Leita	Humphrey, Mary Louise	Milczey, Evelyn Katherine [*]
Davis, John Carl ³	Hustvedt, Harriet Marie ⁴	Miller, Melba Alice
Deakun, Alice	Irion, Alma Mae ¹	Miller, Wylmarose ¹
Deffenbaugh, Eunice Verneal	Jacob, Rolla Joanne ¹	Minkus, Seena [*]

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

Misius, Lillian Dombro ⁴	Richart, Kathryn Mary	Templin, John Jerome
Mitchell, Mary Ellen [*]	Roberts, Charles Albert	Thomas, Rachel Ann ¹
Morgan, Miriam Juliana	Roberts, Elizabeth E.	Tice, Nancy Ann
Morley, Esther Louise	Ropiequet, Richard Lincoln ³	Tillman, Mollye Mae
Moscowitz, Sylvia ¹	Rosenbium, Barbara ¹	Timblin, Robert Coe
Muehrcke, Marie Hyacinth ^{***}	Ross, Lorena Anne	Tom, John Yung Sau
Munns, Edith Viola	Rowe, Edward Moyes	Tomaras, William
Murphy, Barbara Carolyn	Rubenzik, Shirley Doris	Traylor, Shirley Maxine
Nathan, Esther Lillian	Sachsel, Dorothy Jane	Trotter, Richard Lewis ²
Neiburger, Josephine Arlene	Sanes, Ruth Rosenthal	Tylor, Elizabeth Marie
Nelson, Lucille Estella	Saville, William Bruce ⁴	Urquhart, Lesley Wilson ⁴
Neumann, Bette Lucille	Schlanger, Louis Joseph	Vesecky, Marion Elizabeth ¹
Nickolls, Frances Elizabeth	Schmunk, Grace Harriett	Vinee, Millicent Carley
Noble, Mildred Irene ¹	Schreiber, Mary Louise	Wagner, Patricia Dagley
Nodine, Doris Eulalia	Schwartz, Maurice ¹	Weber, Nancy Jane
Norton, Bert Edwin	Seekamp, Frederick William, Jr.	Webster, Rosanna Gordon
Oakland, Milo Thomas, Jr. ¹	Selby, Bernard	Weeks, Helen Boehm ¹
O'Donnell, Doris Deborah	Sewell, Doris Caroline	Williams, Dorothy Jane
Olbrich, Janice Mae ^{***}	Shepler, Jean Carroll ¹	Williams, Edith Gwendolyn
Olson, Jacqueline Estelle	Sheppard, Jean Kathryn	Williams, Emma Jane ⁴
Ooms, Owen Jennings	Shirreffs, Doris Benita	Williams, Mary Ellen ²
Ordanik, Michael	Sieferman, Ruth Lillian	Williamson, Norma Jean ¹
Osoff, Roselle	Simpson, Audrey Mae	Wilson, Dorothy Lois ¹
Overberger, Peggy Bachman ¹	Sisson, Janet Marie ^{***1}	Wilson, Mary Jane ^{**}
Park, Glen Ingram ¹	Sklare, Arnold Beryl	Wilson, Mary Myrle Jones ⁴
Parry, Muriel Hope	Slottow, Josephine	Wilson, Verna Lee
Perring, Jo Ann	Smith, James Henry	Wilson, Vernon John
Petersen, Kathryn Lenore	Smith, Mary Elaine Rugh	Wing, Roberta Lucille
Pfeiffer, Mary Alice ^{**}	Somer, Fay Bernice	Winkley, Angela Adele
Pickett, Eleanor Mae	Sorrentino, Winifred Geske ¹	Witensky, Beverly Renee ⁴
Pitzele, Alma Sylvia ¹	Spencer, Jean [*]	Witmer, Barbara Alice
Plese, Lucille Kathleen	Spencer, Jean Aileen	Wolf, Betty Lou Vivian
Pollack, Elaine June	Stark, Morton Burris	Wood, Arthur, Jr. ⁴
Pope, Margaret Jane ¹	Starkey, Jeanne Eleanor	Wood, Bertha
Powell, Juliette Leeper	Steel, Carolyn Elizabeth	Wood, Dorothy Louise
Presbrey, George Warren ⁴	Stern, Hermine Ruth	Wright, Thomas Clayton, Jr.
Proctor, Kenneth Earle	Stone, Dorothy Adele ⁴	Wyckoff, Phyllis Nell
Purcell, Dorothy Margaret	Strom, John Alexander ⁴	Yokem, Mary Louise
Putman, John Albert	Stuart, Muriel Vera	Youmans, Maryalice
Ranz, Bernice Lenore ^{**1}	Stumm, Robert Joseph ¹	Zeller, Edward Jacob
Rathert, Louis Gilster	Swickard, Dan Clinton ¹	Zierjack, Carol Margaret ¹
Reeb, Jeanne Mary	Tanton, Charlotte Cecilia	Zimmerman, Wanda Lee
Remington, George Albin ¹	Tarpley, Mildred Ann	Znaniacki, Helena Beatrice Maria
Reuling, Katharine	Tatar, Eunice Frances	Lubich ¹¹

Degree of Bachelor of Arts

(In Home Economics)

Hermie, Mable Mildred

Stevens, Mary Christine^{***}Titus, Alta Louise¹

Degree of Bachelor of Arts

*(In Teaching of English)*Blundell, Phyllis Vivian⁴

Degree of Bachelor of Science

(In the subjects shown in parenthesis)

Abraham, Sidney (Agriculture) ¹	Ayers, Arthur Richard, Jr. (Mechanical Engineering)
Adams, Roy Howard (Journalism)	Backman, Glenn Elmer (Mechanical Engineering) ⁴
Adelman, Albert Abraham (General Business) ⁴	Bailey, Arlene Clara (Liberal Arts and Sciences)
Ahern, Robert Eugene (Mechanical Engineering) [*]	Bailey, Richard Warren (Mechanical Engineering) ⁴
Akerman, Richard Predt (Accountancy)	Baley, James Anton (Physical Education) ⁴
Albright, William Thomas (Management)	Bangert, June Audrey (Music Education)
Allen, Dellora (Home Economics)	Bannister, Loren Willard (Chemistry) ^{**}
Allison, Donald Gordon (Agriculture)	Bannon, Margaret Theresa Mary (Accountancy) ¹
Ameel, Alan Joseph (Civil Engineering) ¹	Banovitz, Jay Bernard (Liberal Arts and Sciences) ⁴
Anderson, Donald Edward (Electrical Engineering) ¹	Barrow, Joseph Merton (Architecture) ^{*1}
Anderson, Raymond Carl (Liberal Arts and Sciences) ⁴	Bartel, Janie Elizabeth (Home Economics) ¹
Andrews, Norma Jean (Journalism)	Barthel, Dale Langley, Jr. (Agriculture) ¹
Andrews, Virginia Marie (Physical Education)	Bartz, Gerald Franklin (Banking and Finance) ¹
Armstrong, William Robert (Chemistry)	Bates, Robert Marcellus (Accountancy) ⁴
Atkins, Clinton Paul (Architectural Engineering) ^{***}	Bauman, Loyal Frederick (Agriculture)
Attebery, Mary Ellen (Chemistry)	Bayne, James Wilmer (Mechanical Engineering) ¹
Auerbach, Earl (Liberal Arts and Sciences) ²	
Auerbach, Stanley Irving (Liberal Arts and Sciences) ¹	

- Beall, James Morfoot (Management)
 Beck, Lester Henry (Mechanical Engineering)¹
 Bell, Don Keith (Division of Special Services for War Veterans)
 Bennett, Bette Louise (Journalism)
 Benson, Barbara Robbins (Education)⁴
 Benson, Herschel Grover (Physical Education)⁴
 Bereiter, Virginia Dolores Patricia (Liberal Arts and Sciences)
 Berkel, Charles John (Civil Engineering)¹
 Bernard, Elmer Hugo (Commerce and Law)¹
 Bergard, Jack Joseph (Mechanical Engineering)
 Beros, Marie (Management)⁴
 Berry, Thelma Anna Jane (Home Economics)
 Bicanich, George Thomas, (Education)⁴
 Biggers, John Tollie (Civil Engineering)¹
 Bills, Robert James (Division of Special Services for War Veterans)³
 Birkhimer, Robert Oliver (Education)⁴
 Black, Lois Ellen (Management)*
 Black, William David (Education)
 Blansett, Bruce Edward (Division of Special Services for War Veterans)⁴
 Bliss, Harlan Eugene (Division of Special Services for War Veterans)
 Blottman, John Bernard, Jr. (Electrical Engineering)¹
 Boe, Harriet June (Journalism)³
 Bohl, Robert Walter (Metallurgical Engineering)**
 Bohon, Robert Lynn (Chemical Engineering)*⁴
 Bolin, Donald Earl (Agriculture)¹
 Bolis, Norman Reynolds (Chemistry)¹
 Borchers, Betty Jane (Commercial Teaching)
 Boris, Joseph Francis (Mechanical Engineering)
 Bouchez, Loretta Louise (Education)⁴
 Bradbury, Robert Donald (Division of Special Services for War Veterans)¹
 Brann, William Paul (Vocational Agriculture)
 Bredow, Paul Frederick (Civil Engineering)
 Bremer, Dorothy Cathron (Education)
 Breneman, Eunice Emma (Home Economics)³
 Brewer, Armon Albert (Division of Special Services for War Veterans)
 Bridgewater, Frank Ardeen (Division of Special Services for War Veterans)¹
 Bridgewater, Lyndell (Public Affairs)
 Brigida, Vito (Electrical Engineering)
 Brooks, Everett Joseph (Physical Education)
 Brown, Mary Ellen (Journalism)*¹
 Brown, Rex Leno, Jr. (Electrical Engineering)⁴
 Brown, Robert Milan (Chemical Engineering)*¹
 Brown, Robert Waldo (Civil Engineering)
 Brunskill, Dorothy Marie (Home Economics)
 Buckley, Mildred Brousek (Liberal Arts and Sciences)⁴
 Bude, Marian Ruth (Education)
 Bujan, George Paul (Education)
 Burk, James Orval (Architectural Engineering)¹
 Burkett, Lowell Abner (Industrial Education)³
 Burroughs, Nelle Jane (Commercial Teaching)
 Burrus, Martin Gayle (Division of Special Services for War Veterans)¹
 Burtch, Loraine Cruse (Home Economics)¹
 Burtness, Roger William (Electrical Engineering)
 Butler, Anne Marie (Accountancy)
 Butler, Harry Eugene (Education)³
 Butler, Robert Immell (Civil Engineering)¹
 Buzzard, Glenn Wesley (Agriculture)*
 Cain, Donald Neil (Division of Special Services for War Veterans)³
 Cain, Gerald Irwin (Architectural Engineering)⁴
 Calhoun, Richard Allen (Mechanical Engineering)⁴
 Canham, Morris Henry (Mechanical Engineering)¹
 Canner, Ethel Foulon (Education)¹
 Capalety, Thomas Anthony (Division of Special Services for War Veterans)
- Carpenter, Bruce Hamilton (Mechanical Engineering)⁴
 Carpenter, Mary Louise (Education)*
 Carr, Norman Loren (Chemical Engineering)*
 Carter, Annette Janice (Marketing)
 Casey, Robert Frederick (Division of Special Services for War Veterans)⁴
 Casper, George Harry (Division of Special Services for War Veterans)
 Castree, Samuel John (Marketing)⁴
 Cathcart, Frank Montgomery, Jr. (Metallurgical Engineering)
 Cembrano, Stelio Carniglia (Chemical Engineering)¹
 Cervenka, Elaine Rozalie (Education)
 Chaiker, William Randolph (Civil Engineering)¹
 Chamberlain, Joyce Louise (Home Economics)
 Chapin, Norton Anderson (Mechanical Engineering)*¹
 Chase, Barbara Louise (Liberal Arts and Sciences)
 Cheek, Forrest Richard (Mechanical Engineering)
 Cheeley, Kenneth Dean (Physical Education)
 Chenoweth, Ralph Dale (Agriculture)
 Cheski, Sylvia Goldine (Liberal Arts and Sciences)⁴
 Christ, Mareta Loraine (Home Economics)
 Christenson, Bernice Lorraine (Education)
 Christon, Harold Lloyd (Division of Special Services for War Veterans)
 Churan, Irene Lorraine (Physical Education)
 Churchill, Erline Mae (Home Economics)*¹
 Clark, Marvin Elston (Agriculture)**
 Clarke, William Warren (Mechanical Engineering)
 Clausonhue, Bruce Donald (Division of Special Services for War Veterans)⁴
 Clyde, Andrew Jackson (Architectural Engineering)¹
 Cochran, Norman Lee (Mechanical Engineering)⁴
 Coffey, Glenn Irvin (Agriculture)*
 Coghlan, Thomas James (Economics)⁴
 Cohen, Bernice Hutner (Liberal Arts and Sciences)⁴
 Cohen, Richard Stanley (Commerce and Law)
 Colby, Chester Lawrence (Physical Education)¹
 Colclasure, Inez Vernice (Home Economics)¹
 Cole, Harriet Rhoads (Liberal Arts and Sciences)
 Cole, William David (Music Education)*
 Coleman, Betty Jane (Journalism)
 Colin, Edward Cecil, Jr. (Architectural Engineering)**
 Collier, June Rose (Liberal Arts and Sciences)¹
 Colman, Kenneth Carl Harm (Division of Special Services for War Veterans)¹
 Colter, John Mortimer (Journalism)
 Cooke, John Allen (Marketing)⁴
 Cooley, William Mack (Architectural Engineering)⁴
 Corman, Jacqueline Beth (Home Economics)*
 Cover, William Henry (Agriculture)⁴
 Cox, Wayne Bresee, II (Liberal Arts and Sciences)³
 Crader, Jeanette Natalie (Physical Education)
 Craft, Glenn Edwin (Architecture)¹
 Craft, Oral Charles (Electrical Engineering)¹
 Craig, Robert Bruce (Electrical Engineering)¹
 Crawford, Barbara Lee (General Engineering)⁴
 Crawford, Vera Kindt (Management)
 Crowell, Frank Greenleaf (Education)¹
 Crowthier, Frank Howard (Management)
 Crumrine, Harold Eugene (Architectural Engineering)⁴
 Cullen, John Patrick (Liberal Arts and Sciences)
 Culver, William Wallace (Division of Special Services for War Veterans)
 Currie, James Laurence (Division of Special Services for War Veterans)³
 Curry, Paul Newell, (Mechanical Engineering)¹

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Curtin, David Richard (Accountancy)⁴
 Cusick, George Robert (Agriculture)^{2,1}
 Dailey, Dorothy Jean (Liberal Arts and Sciences)
 Damerst, William Abraham (Division of Special Services for War Veterans)⁴
 Danforth, Herman Leonard (Civil Engineering)
 Daniel, Jessie Marie (Physical Education)
 Davenport, John Scott (Journalism)
 Davenport, Richard Cameron (Management)
 Davidson, Kathryn Isabel (Home Economics)³
 Davis, Jared William, Jr. (Mechanical Engineering)¹
 Davis, Loretta Lee (Liberal Arts and Sciences)¹
 Davis, Reba Jane (Home Economics)³
 Dawson, John Russell (Agriculture)
 Day, Thomas Buck (Accountancy)¹
 Dayton, Ann Louise (Liberal Arts and Sciences)
 DeBiase, Raymond Gerald (Electrical Engineering)¹
 Defenbaugh, William Ellwood (Division of Special Services for War Veterans)⁴
 Delap, Lois Eleanor (Education)
 Del Monte, Anthony (Mechanical Engineering)
 Desmond, Deiro Mario (Electrical Engineering)¹
 Dessen, Edward Herbert (Liberal Arts and Sciences)⁴
 DeWan, John Eldon (Mechanical Engineering)⁴
 De Wolfe, John Chauncey, Jr. (Commerce and Law)
 Dickson, Barbara Jean (Accountancy)
 Dieschbourg, Thomas John (Accountancy)
 Dietiker, Fred Corbett (Education)³
 Ditzen, Robert William (Architecture)
 Dolan, Maurice Joseph (Architectural Engineering)
 Dolch, Edward William (Division of Special Services for War Veterans)⁴
 Dolch, John Parker (Division of Special Services for War Veterans)⁴
 Donohue, Mary Kathryn (Management)
 Doocy, Edward Sullan (Electrical Engineering)
 Dopps, William David (Civil Engineering)
 Dorf, Charles James (Mechanical Engineering)⁴
 Dorothy, Morton Freer, Jr. (Division of Special Services for War Veterans)
 Dowling, Robert William (Division of Special Services for War Veterans)
 Downs, Judith Gardner (Management)^{1,1}
 Doyle, Joan Mary (Liberal Arts and Sciences)^{**}
 Doyle, John Owen (Agriculture)*
 Drager, Keith Newton (Mechanical Engineering)*
 Dragisic, Nicholas Charles (Accountancy)
 Dragstrem, Harold Elwin (Management)¹
 Drake, David Luther (Agriculture)**
 Dralle, Ralph Douglas (Agriculture)
 Drankiewicz, John Michael (Physical Education)
 Driggs, Dick Wilson (Education)
 Duddy, Howard Martin (Accountancy)
 Due, Arthur Leland (Accountancy)
 Dueringer, Ver Jean Hazel (Education)³
 Dunham, Roger (Architecture)***
 Durako, Joseph Lawrence (Education)³
 Durkee, Robert Glenn (Agriculture)⁴
 Earhart, Benjamin Harlin (Accountancy)
 Earler, Allene Edna (Home Economics)*
 Ecale, Henry (Architectural Engineering)
 Ecale, Marian Young (Home Economics)
 Eckert, Virginia Eileen (Education)
 Eddleman, William Glenn (Mechanical Engineering)¹
 Edgar, Rowena Elizabeth (Physical Education)
 Ehler, Elmer Leonard (Agriculture)
 Ehmann, Robert William (Liberal Arts and Sciences)
 Eisenberg, Leland Lincoln (Liberal Arts and Sciences)¹
 Elkin, Gertrude (Education)
 Elliott, Annabelle Geneva (Marketing)⁴
 Ellis, Darl Arlie (Civil Engineering)
 Emge, Robert George (Division of Special Services for War Veterans)⁴
 Engbrecht, Edith Laura (Journalism)¹
 Erickson, Waldemar Eugene, Jr. (Management)⁴
 Erikson, Ragnar Ernst (Civil Engineering)
 Ernst, Thelma (Home Economics)
 Ernster, John Harry (Division of Special Services for War Veterans)
 Etter, James Edgar (Electrical Engineering)⁴
 Evans, Karl Held (Civil Engineering)
 Everson, Dorothy Mae (Education)
 Fagan, Dale Wesley (Division of Special Services for War Veterans)⁴
 Farber, Louis Gordon (Ceramics)
 Farley, Frank Butler (Division of Special Services for War Veterans)
 Fedosky, Virginia Grace (Physical Education)
 Fee, John Mackey, Jr. (Civil Engineering)
 Feltman, Shirley Rose (Liberal Arts and Sciences)
 Ferreira, Cesar Guillermo (Accountancy)⁴
 Fish, Robert Earl (Accountancy)⁴
 Fisher, Irving (Division of Special Services for War Veterans)⁴
 Fisher, Seth Grant (Electrical Engineering)¹
 Fisherkeller, John Jeremiah, Jr. (Mechanical Engineering)⁴
 Fishman, Sol (Liberal Arts and Sciences)⁴
 Flora, Ralph Frederick (Division of Special Services for War Veterans)⁴
 Flum, Paul Lewis (Management)¹
 Fonner, Gerald Gordon (Division of Special Services for War Veterans)⁴
 Forbes, Germaine Catherine (Journalism)⁴
 Ford, Alice Elmina (Home Economics)***
 Ford, James Robert (Agriculture)
 Forsey, George W., Jr. (Agriculture)**³
 Foster, Elizabeth Jane (Chemistry)***¹
 Foster, June Spandt (Journalism)
 Foster, Max Tice (Agriculture)***
 Fox, Eleanor Ruth (Liberal Arts and Sciences)
 Fox, Mary Frances (Home Economics)
 Fraas, Robert Martin (General Engineering)⁴
 Frank, Neal Henry (Civil Engineering)
 Franke, Mervel Schroeder (Home Economics)*
 Franklin, Martha Dell (Physical Education)
 Freda, Kathryn Florence (Liberal Arts and Sciences)
 Freeman, Terrence Alvin (Physical Education)⁴
 Friedman, Roslyn June Berger (Journalism)⁴
 Frierson, Robert Henry (Industrial Education)¹
 Fues, Walter Clayton (Liberal Arts and Sciences)
 Fulk, Barbara Flesher (Home Economics)⁴
 Gaddis, Clara May (Home Economics)³
 Gaebe, James Rolf (Liberal Arts and Sciences)⁴
 Gage, Rosemarv Elizabeth (Education)
 Gahan, Willard Robert (Accountancy)
 Gammill, Adrian Monroe (Division of Special Services for War Veterans)
 Gann, Ruby Nell (Education)
 Garner, Betty Louise (Physical Education)*
 Garrott, Oard Orrin (Agriculture)⁴
 Geister, Robert Shields (Liberal Arts and Sciences)⁴
 Genewitch, Evelyn Frances (Education)
 Getman, Shirley Ann (Management)*
 Gibbs, Donald Kirk (Management)⁴
 Gibbs, Melvin Brummet (Ceramic Engineering)⁴
 Gilbert, William Ralph (Journalism)
 Ginos, Evangeline Sarah (Education)
 Girhard, Mary Nancy (Liberal Arts and Sciences)***
 Gitre, Jerry Leo (Civil Engineering)^{1,1}
 Glatt, Maurice Molner (Division of Special Services for War Veterans)
 Goforth, Georgia Royce (Liberal Arts and Sciences)

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Graff, William Arthur (Ceramics)³
 Graham, John Warren (Ceramic Engineering)⁴
 Grandt, Alton Frederick (Agriculture)⁴
 Gray, Kenneth Virgil (Accountancy)⁴
 Gray, Robert Murry (Accountancy)⁴
 Greathouse, Asa Baber, Jr. (Agriculture)
 Green, Helen Marie (Journalism)
 Gregory, Gordon Culver (Mechanical Engineering)
 Grossell, Armin James (Civil Engineering)³
 Grove, Arlene Mae (Home Economics)²
 Gryb, Robert Milton (Electrical Engineering)³
 Guren, Milton (Division of Special Services for War Veterans)⁴
 Guthrie, Marjorie Virginia (Home Economics)³
 Halacek, Mildred (Liberal Arts and Sciences)²
 Hall, John Alden (Division of Special Services for War Veterans)⁴
 Hallberg, Harry Donald (General Engineering)²
 Hallowell, Eleanor (Home Economics)*
 Halyama, Eugene Ernest (Architectural Engineering)
 Hamilton, Corinne Joyce (Home Economics)
 Hamilton, Gail Elizabeth (Physical Education)
 Hamm, Betty Lou (Music Education)
 Hammersmith, John William (Civil Engineering)
 Hance, Robert Elmer (Agriculture)⁴
 Hancock, Rhoda Marian (Education)
 Hannah, Lawrence Hugh (Vocational Agriculture)⁴
 Harden, Curtis Lee (Liberal Arts and Sciences)
 Harden, Hobart Bilderbach, Jr. (Liberal Arts and Sciences)
 Hargitt, George Harold, Jr. (Mechanical Engineering)
 Harlin, Harriet Ann (Home Economics)*
 Harms, James Harmon (Banking and Finance)¹
 Harms, Richard William Gregory (Electrical Engineering)⁴
 Harris, John Alfred (Liberal Arts and Sciences)⁴
 Harrison, Bernard Paul (Division of Special Services for War Veterans)⁴
 Harshaney, Samuel (Education)¹
 Hart, Armsby Tod (Architecture)⁴
 Hass, Carole (Education)
 Hatch, Donald James (Music Education)³
 Hatfield, Robert Lewis (Electrical Engineering)
 Hausler, Ernest Martin (Mechanical Engineering)⁴
 Haygood, Margaret Collins (Education)*
 Hebenstreit, Richard Henry (Civil Engineering)^{**1}
 Hecker, Morris Littlefield, Jr. (Management)⁴
 Heiman, Jane Ellen (Architecture)⁴
 Heitz, George Alban (Agriculture)
 Henderson, Fay Belle (Home Economics)
 Hennig, Robert William (Mechanical Engineering)^{**4}
 Herath, Betty Jeanne (Education)
 Herda, William Kenneth (Mechanical Engineering)^{**1}
 Herrmann, Janet Louise (Home Economics)
 Herron, Jean Baysinger (Journalism)^{**1}
 Hesser, Charles John (Liberal Arts and Sciences)³
 Hesser, Frank Paul (Liberal Arts and Sciences)³
 Hicks, Ernestine (Education)
 Hildebrandt, Alice Helen (Home Economics)*
 Hiller, Virginia Lee (Management)*
 Himes, Peggy Jean (Liberal Arts and Sciences)
 Hincheliffe, Jay Emmett, Jr. (Electrical Engineering)⁴
 Hinrichs, Norman Arthur (Electrical Engineering)¹
 Hinton, Marian Helene (Home Economics)
 Hinton, Mary Laverne (Home Economics)
 Hissong, Frances Doyne (Music Education)*
 Hodgson, John Russell (Civil Engineering)
- Hoehn, Vernon LeRoy (Liberal Arts and Sciences)
 Hollett, Allen Borum (Mining Engineering)
 Holliday, John Thomas, Jr. (Mechanical Engineering)
 Hollingshead, Maude Delanie (Education)⁴
 Holloway, Martha Ellen (Education)
 Holslag, John Francis, Jr. (Banking and Finance)
 Homm, Jeanne Regina (Home Economics)
 Honea, Robert Clair, Jr. (Liberal Arts and Sciences)
 Honzak, Ruth Myra (Education)
 Hoobler, Marjorie Jean (Journalism)
 Hooverhyde, Arthur (Electrical Engineering)⁴
 Hooton, Robert Porter (Division of Special Services for War Veterans)
 Hoppe, Roy Marvin (Division of Special Services for War Veterans)
 Hoppin, John Harlow (Industrial Administration)
 Horacek, Henry Joseph (Chemistry)¹
 Horning, Lois Marian (Music Education)
 Horwitz, Lawrence (Marketing)⁴
 Hoskins, Dalton (Civil Engineering)**
 Hott, William Allen (Division of Special Services for War Veterans)⁴
 House, Mary Amo (Home Economics)¹
 Howard, Louis Allen (Electrical Engineering)^{**1}
 Howard, Ralph Orson (Agriculture)⁴
 Howe, Jason (Mechanical Engineering)⁴
 Howell, Fred Stanley (Electrical Engineering)
 Hubacek, Charles Woodrow (Industrial Education)
 Huff, George Allen (Civil Engineering)
 Huffington, Ernest Hendrix (Agriculture)³
 Huffman, Willard Crook (Division of Special Services for War Veterans)³
 Hughes, Raymond Eugene (Management)⁴
 Hughes, Robert Leo (Chemical Engineering)³
 Huish, Melvin Theodore (Liberal Arts and Sciences)¹
 Humphrey, Albert S. (Chemical Engineering)**
 Hurd, Helen Virginia (Home Economics)
 Hurwich, Ethel Rose (Liberal Arts and Sciences)
 Huthmacher, Charles Lynn (Commerce and Law)
 Hyhl, Anthony Robert (Education)³
 Indritz, Edna Elizabeth (Liberal Arts and Sciences)⁴
 Irvin, Calvin Coolidge (Education)
 Isley, Wendell Hugo (Architecture)⁴
 Jackson, LaVerne Marilynn (Education)
 Jacobs, Browning Roderick (Electrical Engineering)⁴
 Jacobs, Winifred Jeanne (Education)
 Jacobson, Robert Whitney (Civil Engineering)⁴
 Jakim, Theodore James (Civil Engineering)¹
 Janiec, Charlotte Marcella (Home Economics)³
 Jankers, Raymond Joseph (Liberal Arts and Sciences)⁴
 Janssen, Marianna Kilian (Liberal Arts and Sciences)
 Jaronik, Stanley John (Marketing)
 Jarrell, Robert Homer (Management)¹
 Javid, Farhang (Mechanical Engineering)¹
 Jenkins, Gerald Lee (Mechanical Engineering)¹
 Jennings, Ivan Walter (Accountancy)⁴
 Johnson, Carl David, Jr. (Mechanical Engineering)
 Johnson, Earl Gerard (Management)
 Johnson, Elizabeth Marilyn (Liberal Arts and Sciences)⁴
 Johnson, Eugene Melvin (Education)³
 Johnson, James Archer (Electrical Engineering)
 Johnson, Kenneth Edwin (Electrical Engineering)
 Johnson, Nicholas Stanslaus (Accountancy)¹
 Johnson, Phyllis Marjorie (Education)
 Johnson, Roy Isadore (Civil Engineering)

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Jones, Barbara Nancy (Education)
 Jones, Lloyd Walton, Jr. (Sanitary Engineering)^{*1}
 Joop, Lester Walter (Physical Education)
 Jordan, Jane Gowans (Music Education)^{**}
 Joslin, Morris Berger (Mechanical Engineering)¹
 Juska, Elvira Ellyn (Liberal Arts and Sciences)
 Katz, Stanford Charles (Journalism)
 Kagan, Ruthe Bernice (Liberal Arts and Sciences)¹
 Kahn, Rena Geraldine (Liberal Arts and Sciences)¹
 Kaplan, Maurice Jay (Division of Special Services for War Veterans)
 Karakoc, Halil Ibrahim (Metallurgical Engineering)¹
 Karlos, Thermon Loren (Division of Special Services for War Veterans)
 Kasten, Estelle (Liberal Arts and Sciences)
 Katz, Elaine Gwendolyn (Liberal Arts and Sciences)
 Kaufman, Samuel Henry (Architectural Engineering)
 Keck, Margie Louise (Journalism)
 Keelan, John Gerard (Electrical Engineering)¹
 Kemper, Morris Emery (Accountancy)
 Keneipp, Virginia Maxine (Home Economics)^{*}
 Kenyon, Warren Curtis (Agriculture)⁴
 Kerres, Esther Leota (Education)
 Kessling, Margaret Jane (Journalism)
 Kessinger, Manning Lynn (Agriculture)^{**3}
 Kimble, Theodore Hazen (Journalism)^{**}
 Kindred, Laura Elizabeth (Home Economics)
 King, Charles Erwin (Architecture)¹
 King, Bennett (Journalism)¹
 King, Joy Zwicky (Education)^{*}
 King, Sam Seymour (Journalism)¹
 Kirst, William James (Division of Special Services for War Veterans)
 Klahm, Charlyz Moser (Education)¹
 Klasing, Dale Albert (Vocational Agriculture)
 Klimboff, Morris (Ceramics)⁴
 Klunk, Dolores Josephine (Education)
 Knight, Richard Tennant (Management)
 Knourek, Robert Martin (Division of Special Services for War Veterans)¹
 Koch, LeRoy Wayne (Mechanical Engineering)⁴
 Koeningmark, Paul Morris (Mechanical Engineering)
 Kolens, Sylvester William (Physical Education)
 Kollman, Nancy Joyce (Journalism)^{**}
 Kone, John Ovid (Mechanical Engineering)⁴
 Kosobud, Richard Francis (Industrial Administration)
 Kowalski, Rita Mae Mary (Liberal Arts and Sciences)
 Kratky, William (Division of Special Services for War Veterans)¹
 Krbec, Loraine Marian (Education)¹
 Krebs, Anne Catherine (Architecture)^{*}
 Krinsky, Seymour (Dairy Technology)⁴
 Krueger, William Samuel, Jr. (Physical Education)
 Kubelius, Thomas Charles (Commerce and Law)
 Kuizin, Ursula Barbara (Journalism)¹
 Kurtay, Kadri Hilmi (Metallurgical Engineering)⁴
 Lakin, Myron Keith (Civil Engineering)
 Landes, Spencer Harlan (Chemical Engineering)^{*4}
 Landis, Wilma Daisy (Home Economics)
 Landis, Barbara Estelle (Liberal Arts and Sciences)³
 Lantz, Harold Norman (Mechanical Engineering)⁴
 Large, Ira Franklin, Jr. (Division of Special Services for War Veterans)⁴
 Larson, Doris Eileen (Journalism)
 Latimore, William Spears (Civil Engineering)
 Laufman, Herbert Stanley (Division of Special Services for War Veterans)⁴
 Laughlin, Robert McClelland (Mechanical Engineering)
 Lawson, Mary Alice (Accountancy)
 Leach, Albert Claude (Music Education)
 Leavitt, Harriet June (Liberal Arts and Sciences)
 Lebow, Jerome (Ceramic Engineering)³
 LeBoy, Richard Bernard (Division of Special Services for War Veterans)⁴
 Lefever, Eleanor Ann (Home Economics)
 LeFevour, Charles Frank (Liberal Arts and Sciences)
 Leimbacher, Robert James (General Business)
 Leipold, Helen Louise (Journalism)
 Lembcke, Ruby Darlene (Home Economics)
 Lenardson, James Duane (Mechanical Engineering)¹
 Lencioni, Frances Joseph (Mechanical Engineering)
 Leppla, Dolores Marie (Home Economics)¹
 LeRoy, Donald (Journalism)^{*1}
 Leutloff, Darwin Ertel (Civil Engineering)⁴
 Levey, Bertram (Civil Engineering)¹
 Levin, Florence (Liberal Arts and Sciences)
 Levin, Ruth Lillian (Journalism)
 Levin, Saul (Accountancy)¹
 Levine, Herschel Harvey (Education)⁴
 Levy, Charles Norman (Division of Special Services for War Veterans)
 Levy, Doris Marie (Management)
 Levy, Edward M. (Metallurgical Engineering)⁴
 Lewis, Margaret Ann (Education)¹
 Limberg, Earl Williams (Accountancy)
 Lindsay, Jeanette Phillips (Education)^{*1}
 Lindsay, Mildred Kathryn (Journalism)
 Linton, Arlene Isabelle (Education)
 Lipkin, Elaine Ruth (Liberal Arts and Sciences)
 Lisco, Sidney Jack (Management)
 Litman, Arnold Powell (Metallurgical Engineering)¹
 Litman, Marvin Wilbur (Division of Special Services for War Veterans)¹
 Little, Isaac Yurel (Accountancy)
 Litvin, Robert Lowell (Civil Engineering)¹
 Loftus, Marjorie Florine (Home Economics)^{*}
 Long, Frank Wesley, Jr. (Liberal Arts and Sciences)^{**4}
 Lough, Patricia Ann (Liberal Arts and Sciences)
 Lovelless, Ruth Alverna (Accountancy)
 Lukas, Peter Paul (Mechanical Engineering)⁴
 Lukens, Eleanor Ann (Education)
 Lumpkin, Marian (Journalism)
 Lund, Martin James (Division of Special Services for War Veterans)
 Lutz, August Christian (Accountancy)¹
 Lux, Fred Edwin (Electrical Engineering)¹
 Lynch, Lincoln Howard (Accountancy)¹
 Lynes, Winston Earl (Music Education)¹
 Lyon, Ruth Eloise (Home Economics)¹
 Macchiavello, Luis A. (Chemical Engineering)^{*}
 MacLaren, Margaret Rennie (Journalism)
 Maddux, Harold Wayne (Electrical Engineering)
 Maher, Goldie Ernestine (Liberal Arts and Sciences)¹
 Mahler, Annabel Elsie (Home Economics)
 Malek, Joseph (Division of Special Services for War Veterans)
 Manchester, Merle (Liberal Arts and Sciences)⁴
 Manheim, Jerome Henry (Division of Special Services for War Veterans)⁴
 Mann, Mona Ray (Education)
 Mann, William Edward (Electrical Engineering)¹
 Manring, Ralph Clarence (Liberal Arts and Sciences)
 Martin, George Edward (Marketing)⁴
 Martin, Mildred Bernice (Home Economics)
 Maruszczak, Renee (Education)^{**}
 Mashaw, Lane Hicks (Civil Engineering)¹

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Mattiazza, Dominic Louis (Physical Education)
 Mauney, Virginia Ruth (Marketing)¹
 Maurer, Virginia Rae (Home Economics)⁴
 Maushak, Mary Adeline (Commercial Teaching)⁵
 McBride, Charles Edward (Accountancy)
 McCabe, Eleanor June (Home Economics)
 McCarthy, James Robert (Electrical Engineering)¹
 McClain, Lawrence Reynolds (Mechanical Engineering)
 McClurg, Theodore William (Marketing)
 McCray, Billie Jane (Education)
 McCready, Betty Jean (Education)⁴
 McCreight, Louis Ralph (Ceramic Engineering)
 McGinnis, Catherine Chabot (Management)
 McGovern, Jeanne Kadyk (Management)
 McGuire, Alice Patricia (Management)¹
 McKay, Shirley Jean (Home Economics)
 McKee, Dwight Irwin (Electrical Engineering)
 McKinstry, Robert Bruce (Electrical Engineering)²
 McManus, Eugene Francis Patrick (Accountancy)
 McMillen, Charles Joseph (Electrical Engineering)¹
 McMullen, John Rex (Education)
 Meeland, Tor (Physical Education)¹
 Meisler, Wilma Lee (Education)
 Meisenbach, Karl William (Education)¹
 Melody, Marilyn Elizabeth (Education)¹
 Melvin, William Edward (Public Affairs)
 Metzger, Donald Emerson (Education)¹
 Meyer, Eugene Nicholas Edward (Accountancy)⁴
 Miles, Alice Ann (Home Economics)⁴
 Miles, Betty Jean Dill (Liberal Arts and Sciences)
 Miles, Harlan Francis (Dairy Technology)
 Miller, Charles Martin (Division of Special Services for War Veterans)³
 Miller, Clement Scott (Civil Engineering)⁴
 Miner, Neva Lucille (Music Education)
 Minor, Robert Samuel (Journalism)
 Mitchell, Helen Elizabeth (Commercial Teaching)⁴
 Mollet, Doris Emily (Home Economics)¹
 Moltz, Leah (Home Economics)
 Moore, Charles Dee (Civil Engineering)
 Moore, Forrest Merritt (Education)
 Moore, Henry Huddler, Jr. (Mechanical Engineering)¹
 Moore, Wayne Elden (Division of Special Services for War Veterans)¹
 Morgan, Lawrence William (Division of Special Services for War Veterans)³
 Morley, Marjory Ruth (Liberal Arts and Sciences)⁶
 Mortland, Max Merle (Agriculture)⁴
 Mosborg, Robert John (Civil Engineering)^{**}
 Motley, Alice Butler (Management)
 Mulvay, William Arnold (Electrical Engineering)
 Nafziger, Dale Albert (Management)⁴
 Nathanson, Phyllis Adele (Liberal Arts and Sciences)¹
 Nesteruk, Walter Michael (Mechanical Engineering)⁴
 Newman, Curtis Gerald (Accountancy)
 Newman, Elva Jacqueline (Marketing)⁴
 Nichols, Robert Ray (General Engineering)⁴
 Nielsen, Carlene Weikel (Education)
 Nieman, Hubert William (Sanitary Engineering)
 Nierenberg, Marvin Morris (Liberal Arts and Sciences)
 Nipe, Luverta (Journalism)
 Nissen, Robert Leroy (Marketing)
 Nixon, Charles William (Liberal Arts and Sciences)^{2,4}
 Nohler, Lucille (Liberal Arts and Sciences)^{2,3}
 Nordhielm, Berndt Evald (Mechanical Engineering)^{2,4}
 Norris, Drusilla Jane (Journalism)
 Nusinow, Bernard (Liberal Arts and Sciences)
 Nye, Johnson Allen, Jr. (Division of Special Services for War Veterans)⁴
 Oberg, Walter John (Division of Special Services for War Veterans)²
 Odell, Ruth Ann (Education)
 Ogawa, Mitsulu (Liberal Arts and Sciences)*
 Ohlson, LeRoy John (Agriculture)¹
 Olsen, Arthur Harry (Mechanical Engineering)⁴
 Omeis, Russell (Music Education)
 O'Neil, Peggy Grace (Journalism)^{**3}
 Orloff, Edgar Samuel (Division of Special Services for War Veterans)³
 Ormsbee, Allen Ives (Aeronautical Engineering)^{**4}
 Ovsresat, Elizabeth Marie (Liberal Arts and Sciences)
 Owen, Robert Preston (General Engineering)⁴
 Pabich, Elaine Florence (Liberal Arts and Sciences)⁴
 Palman, Ina Ruth (Education)
 Papadino, Chris (Metallurgical Engineering)⁴
 Paprocki, Edward John (Physical Education)¹
 Paprocki, Stanley John (Metallurgical Engineering)¹
 Pardue, Donald Bryant (Division of Special Services for War Veterans)⁴
 Parker, Ronald Hugh (Civil Engineering)
 Parker, Ruth Gale (Liberal Arts and Sciences)
 Parrott, Betty Anne (Management)
 Patterson, Marion Jean (Journalism)
 Patton, Howard Lewis (Liberal Arts and Sciences)
 Payden, Neal Franklin (Civil Engineering)¹
 Payne, Rodney Dowe (Agriculture)
 Pedersen, Harry (Mechanical Engineering)^{**1}
 Peebles, Marian Winifred (Home Economics)
 Pelz, Robert Walter (Ceramic Engineering)
 Penn, Howard Isaac (Liberal Arts and Sciences)
 Perkins, Marian (Chemistry)^{**1}
 Perrill, Rodney Stuart (Mechanical Engineering)⁴
 Perrin, Barbara Dixon (Education)¹
 Perring, John Earl (Vocational Agriculture)^{**3}
 Perry, Harriet Norma (Commercial Teaching)
 Peskind, Phyllis Bernice (Journalism)¹
 Peters, Ray Earle (Education)
 Petersen, Eugene Fred (Ceramic Engineering)
 Petersen, Jack Sigurd (Physical Education)⁴
 Phares, Carol Ann (Home Economics)³
 Phelps, Robert Leland (Chemical Engineering)*
 Pherigo, John Brown, Jr. (Mechanical Engineering)
 Philippi, Pauline (Accountancy)^{**4}
 Pickett, Jesse Malcolm, Jr. (Civil Engineering)^{**1}
 Piersol, Richard Johnson (Mechanical Engineering)¹
 Pipas, George (Electrical Engineering)
 Pitcher, James Roy (Division of Special Services for War Veterans)⁴
 Pittman, Paul Clifton (Agriculture)¹
 Pocklington, Lucille Denby (Home Economics)
 Poffenbarger, Doris Elaine (Education)¹
 Polk, Robert Lewis (Civil Engineering)⁴
 Pope, Ralph Junior (Agriculture)
 Prange, Harold Charles (Division of Special Services for War Veterans)⁴
 Prater, Arthur Darwin (Ceramics)⁴
 Prather, James Howard (Division of Special Services for War Veterans)¹
 Prather, Ruth Porterfield (Journalism)
 Pratt, Wilma Elaine (Accountancy)¹
 Price, Barbara Anne (Home Economics)
 Prime, Richard David (Liberal Arts and Sciences)
 Pruzansky, Lucille Laurel (Liberal Arts and Sciences)⁴
 Pugh, Hilda Naomi (Education)¹
 Punke, Flossie M. (Education)⁶

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Quinlan, John William (Civil Engineering)
 Quinty, Gladys Helen (Liberal Arts and Sciences)**
 Racanelli, Victor L. (Marketing)
 Radcliffe, Donald Earl (Division of Special Services for War Veterans)
 Radke, Arthur Olsen (Agricultural Engineering)
 Ragins, Adele Zentner (Liberal Arts and Sciences)**
 Rahe, William Clarence (Mechanical Engineering)
 Ramsay, Joseph Paul (Economics)¹
 Randall, John Edgar (Mechanical Engineering)
 Ranev, Carroll Stanley (Civil Engineering)
 Rapp, John Henry, Jr. (Industrial Administration)¹
 Rastede, John William (Civil Engineering)⁴
 Rawlings, Rachel (Education)³
 Ray, Arthur Harold (Liberal Arts and Sciences)
 Reardon, Mary Ellen (Home Economics)¹
 Reeder, Barbara Alice (Home Economics)**¹
 Reeder, Georgia Ellen (Home Economics)*
 Reeder, John Richard (Liberal Arts and Sciences)⁴
 Reese, Teresa Marie (Journalism)¹
 Reeser, Lyle Grant (Agricultural Engineering)
 Reeves, Richard Everett (Division of Special Services for War Veterans)
 Refeuna, John Tony (Mining Engineering)⁴
 Rehn, Irwin Martin (Liberal Arts and Sciences)
 Reichstein, Irving Paul (Liberal Arts and Sciences)
 Reid, Thomas Russell (Education)
 Reigle, John (Electrical Engineering)¹
 Reinhard, Robert Frederick (Civil Engineering)¹
 Retzer, Anna Jean (Home Economics)¹
 Revelle, Betty Jeanne (Education)¹
 Reynolds, Jeanette Watkins (Education)
 Rice, Clyde Oren (Architectural Engineering)¹
 Rice, James Percival, Jr. (Accountancy)
 Richey, Charles Frederick (Chemical Engineering)⁴
 Riley, James (Education)³
 Roach, Charles Joseph (Mechanical Engineering)
 Robb, Dean Allen (Division of Special Services for War Veterans)
 Robb, Lucia Mary (Education)¹
 Robbins, Daniel Morris (Division of Special Services for War Veterans)
 Robertson, Anna Louise (Education)
 Robineau, Marjorie Joy (Journalism)¹
 Robinson, Bruce Fairbairn (Electrical Engineering)
 Robinson, Mark Tabor (Chemistry)**¹
 Rochow, Caroline Violet (Marketing)
 Rogers, Lawrence Winchester (Architecture* and Architectural Engineering)¹
 Rogers, Shirley June (Journalism)¹
 Roland, Hall Carmack (Mechanical Engineering)¹
 Rolf, John Howard (Agriculture)*⁴
 Roller, Max Eugene (Civil Engineering)¹
 Rose, Esther Fullerton (Education)⁴
 Rose, Seymour (Accountancy)¹
 Rosenthal, Florence (Liberal Arts and Sciences)
 Rubin, Lucille (Education)¹
 Rucker, Herbert Mason (Management)⁴
 Rueter, Mary Loretta (Accountancy)⁴
 Rundel, Dorothy Belting (Music Education)**
 Rundquist, John Frederick (Agriculture)*
 Runge, Wallace Fred (Chemistry)³
 Rupp, Dorothy Kelly (Management)¹
 Ryan, Beth Dunham (Journalism)
 Sachs, Abraham William (Physical Education)
 Samuelson, Valerie Ellen (Liberal Arts and Sciences)⁴
 Sand, Donald Robert (Management)
 Sanderson, Ellis Jewell (Division of Special Services for War Veterans)⁴
 Sanford, Marion Jean (Music Education)*
 Satz, Harriet Rosa (Liberal Arts and Sciences)**
 Savoie, Leonard Mitchell, Jr. (Accountancy)*⁴
 Sax, Betsy-Rose (Liberal Arts and Sciences)¹
 Schaefer, Gerschen Lion (Liberal Arts and Sciences)
 Schaefer, Jacqueline Talmy (Liberal Arts and Sciences)⁴
 Schaefer, Jane Louise (Home Economics)
 Schaffer, Isaac Woodrow (Education)⁴
 Schaffner, Carol Lois (Journalism)
 Schell, Donald Charles (Ceramics)
 Schellhardt, Maurice Emil (Agriculture)
 Scheufele, Glen Calvin (Electrical Engineering)
 Schiff, George William (Electrical Engineering)
 Schindler, Richard Rudolf (Civil Engineering)⁴
 Schlehuber, Robert Clarence (General Engineering)
 Schmidt, Waldemar Emmett (Agriculture)
 Schmitt, William Dean (Division of Special Services for War Veterans)
 Schneider, Karl Rankin (Division of Special Services for War Veterans)⁴
 Schneider, Jerome Theodore (Division of Special Services for War Veterans)
 Schnizlein, John Glenn (Chemistry)⁴
 Schoen, Edgar Jacob (Liberal Arts and Sciences)¹
 Schrader, Lillian Irene (Home Economics)
 Schubert, Eileen Kranson (Liberal Arts and Sciences)
 Schueler, Robert Charles (Metallurgical Engineering)⁴
 Schultz, William Matthew (Mechanical Engineering)¹
 Schumaker, John Abraham (Liberal Arts and Sciences)**¹
 Schuster, John Jacob (Music Education)
 Schwalbe, Roslyn Helene (Music Education)
 Schwartz, Joseph (Liberal Arts and Sciences)¹
 Scott, Merrill Blood (Accountancy)*
 Seal, Robert Fitch (Division of Special Services for War Veterans)⁴
 Seaman, Edna Mary (Journalism)
 Seeber, Dorothy Ann (Management)¹
 Seed, Kathryn Deanne (Education)
 Seen, Ruth Yvonne (Journalism)
 Seidel, Marjorie Alma (Education)
 Seitzinger, Vaughn Foch (Ceramic Engineering)
 Setzekorn, Anna May (Education)
 Sexton, Harold Charles (Division of Special Services for War Veterans)⁴
 Seyler, Jimmy Warren (Civil Engineering)
 Shallock, Edward William (Mechanical Engineering)
 Shapiro, Milton Irving (Mechanical Engineering)⁴
 Shapland, Nell Ruth O'Byrne (Management)
 Shapland, Robert Ross (Civil Engineering)**
 Shapland, Wilma Whetzel (Home Economics)
 Sharpe, Norman Nathaniel (Accountancy)⁴
 Shepard, Richard Herbert (Management)⁴
 Sher, Meyer Alex (Accountancy)
 Sherman, Adele (Education)
 Sherman, Millicent Beverly (Physical Education)
 Shirley, Alton La Vern (Management)
 Shirley, Earl Walter (Management)
 Shorr, Ben (Accountancy)
 Shuman, Howard Eugene (Division of Special Services for War Veterans)⁴
 Shumway, James McBride (Management)
 Shurte, Marcia Arlene (Physical Education)**
 Siebert, Carlos Reuben (Agriculture)*³
 Siedschlag, Everett William (Agriculture)
 Sikkena, William Milfred (Civil Engineering)
 Silarski, Walter Francis (Marketing)
 Silver, Jerome Martin (Liberal Arts and Sciences)⁴

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Simmons, George Haskel, Jr. (Industrial Education)¹
 Simon, Gladys (Journalism)
 Sinadinos, Bettie Bessie (Education)
 Sinclair, Dale Hardway (Agriculture)*
 Sister Mary Tharla Baber (Education)³
 Skaggs, Donald James (Civil Engineering)
 Skoblikoff, Olga (Education)*
 Slade, Woodrow Wilson (Mining Engineering)¹
 Slavick, Bert Jay (Division of Special Services for War Veterans)¹
 Smith, Clem Opal, Jr. (Accountancy)
 Smith, Donald Hilton (Civil Engineering)
 Smith, Eugene Emmett (Management)¹
 Smith, James Henry (Liberal Arts and Sciences)
 Smith, Judson Weber (Electrical Engineering)
 Smith, Patricia Ann (Applied Science)¹
 Smith, Phyllis Lee (Home Economics)
 Smith, Raymond Francis (Division of Special Services for War Veterans)¹
 Smith, Richard Leroy (Civil Engineering)¹
 Smith, Selma Kay (Education)
 Smith, Thomas Rutter (Management)*
 Smith, William Alexander (General Business)
 Smyth, Eugene Rex (Agriculture)
 Snoke, John Edward (Chemistry)
 Snyder, Betty Alice (Liberal Arts and Sciences)
 Sokol, Anita Beatrice (Liberal Arts and Sciences)
 Sornik, Meyer Albert (Architecture)
 Sowers, Gordon Manford (Division of Special Services for War Veterans)¹
 Spitz, Geraldine Beverly (Liberal Arts and Sciences)
 Spivey, Clinton (Management)¹
 Sprague, Stanley Richard (Mechanical Engineering)¹
 Sproull, Muriel Florence (Liberal Arts and Sciences)
 Staab, Jacob Emor (Mechanical Engineering)¹
 Stale, Charles Edward (Architecture)
 Stalinke, Edward John (Mechanical Engineering)¹
 Stampar, George Joseph (Physical Education)
 Stanford, Leslie Everett (Agriculture)
 Stasell, Pherol Lavonne (Education)
 Stalder, Shirley Jane (Education)
 Steinley, Annis May (Home Economics)
 Stemler, Fred Walter (Liberal Arts and Sciences)¹
 Stenn, Lorraine Ethel (Home Economics)
 Stevens, Henry Edgar (Mechanical Engineering)¹
 Stewart, Dana Adams (Agriculture)**
 Stewart, Margaret Ruth (Accountancy)*
 Strickz, Eugene Ellis (Division of Special Services for War Veterans)¹
 Stoll, Norma Hilma (Education)¹
 Stone, Arthur (Civil Engineering)
 Stone, Raymond Maurice (Civil Engineering)¹
 Straesser, Chris Robert (Metallurgical Engineering)¹
 Strattan, William Voltz (Mechanical Engineering)¹
 Strikich, Frank John (Accountancy)¹
 Strong, Dorothy Jane (Journalism)¹
 Strong, Robert Truman (Division of Special Services for War Veterans)
 Strunk, Theodore Paul (Accountancy)*¹
 Stubbsfield, Betty Lucille (Accountancy)*
 Sturman, Mary Elizabeth (Journalism)
 Suárez, Filiberto Alfredo López (Physical Education)
 Sudar, Seymour (Chemical Engineering)**
 Suddes, John William (Commerce and Law)¹
 Suhr, Shirley Anne (Home Economics)¹
 Summers, Shirley Dean (Liberal Arts and Sciences)*¹
 Sundwick, Margarette Stephens (Music Education)*
- Swango, Goldie Ermine (Liberal Arts and Sciences)
 Swanson, Clinton Hamilton (Agriculture)
 Swanson, Robert Edwin (Marketing)¹
 Swets, Donald Henry (Civil Engineering)
 Szablowski, Edmund Leo (Accountancy)
 Taft, Nellie Jane (Journalism)
 Tallent, Norman (Liberal Arts and Sciences)
 Tanton, William Dodds (Agriculture)
 Tate, Mary Ellen (Home Economics)*
 Teel, Dale Herman (Chemical Engineering)¹
 Teel, Gerald Edgar (Industrial Education)¹
 Telander, Harry Richard (Marketing)
 Tendick, Lois Lea (Home Economics)*
 Teweles, Richard Jack (Management)¹
 Thalheimer, Alan R. (Management)¹
 Thalman, William Eugene (Civil Engineering)¹
 Thiebaud, Emma Jane (Home Economics)²
 Thomas, James Harold (Education)³
 Thomas, Noble Barton (Education)³
 Thompson, Allen Arthur (Agriculture)¹
 Thompson, Charles Jackson (Division of Special Services for War Veterans)²
 Thul, Ralph Ferdinand (Division of Special Services for War Veterans)¹
 Thunman, Carl Eugene, Jr. (Civil Engineering)
 Thuot, Charles Benedict (Industrial Education)¹
 Tiedemann, Arthur Theodore (Electrical Engineering)
 Titus, Lois Elaine (Liberal Arts and Sciences)
 Todd, Floyd Dean (Journalism)¹
 Tom, Gene Francis (Liberal Arts and Sciences)
 Tompkins, George Cambridge (Division of Special Services for War Veterans)¹
 Towsley, Betty Jane (Education)
 Tracy, James Albert (Accountancy)
 Trexoning, Wesley Willis (Physical Education)
 Tucker, Billy Wornack (Division of Special Services for War Veterans)
 Tucker, Enid Helene (Liberal Arts and Sciences)¹
 Turkberk, Abdulgani (Civil Engineering)
 Turner, Harold Eugene (Civil Engineering)*¹
 Turnovsky, Otto James, Jr. (Metallurgical Engineering)¹
 Tyler, Elizabeth Louise (Education)
 Ubben, James Everett (Division of Special Services for War Veterans)
 Ueherrlein, Georgene (Home Economics)
 Underwood, Dolores (Accountancy)
 Underwood, Robert Marshall (Division of Special Services for War Veterans)¹
 Unger, Donald Lee (Liberal Arts and Sciences)¹
 Urbano, Robert Francis (Liberal Arts and Sciences)¹
 Vander Vennet, Richard Arthur Joseph (Accountancy)¹
 Vandevender, Alvin Lee (Civil Engineering)
 Van Doren, Betty Jane (Physical Education)
 Van Fossan, Neal Everett (Mechanical Engineering)¹
 Venema, Harry James (Electrical Engineering)¹
 Vermes, Edward Daniel (Education)
 Vermes, Marcella May Burnham (Education)¹
 Versten, Maynette Rosalie (Liberal Arts and Sciences)**
 Vertrees, Jacqueline (Management)
 Victor, Harold Samuel (Management)
 Vogt, Anna Louise (Home Economics)
 Von Spreckelsen, Raymond Junior (Division of Special Services for War Veterans)
 Voris, Jean Charlotte (Journalism)
 Wahlén, John Phillip (Mechanical Engineering)¹
 Walker, Robert Jefferson (Education)³
 Walker, Robert Joseph (Mechanical Engineering)¹
 Walraven, Burnham Fowler (Mechanical Engineering)**
 Walsh, James Franklin (Division of Special Services for War Veterans)

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Walsh, Marie (Education)
 Walston, Elmer James (Civil Engineering)¹
 Ward, Howard Hoffman, III (Marketing)⁴
 Warman, Doreen May (Accountancy)
 Warren, Joseph Edward (Management)⁴
 Warren, Mildred Irene (Home Economics)³
 Wasserman, Roberta June (Journalism)
 Waterman, Charles Emile (Journalism)⁴
 Watson, Kenneth Warren (Journalism)³
 Way, Lawrence Edward (Division of Special Services for War Veterans)⁴
 Wear, Robert Lee (Liberal Arts and Sciences)^{***}
 Weber, Donald Jerome (Management)⁴
 Weeks, Benjamin Ervin, Jr. (Civil Engineering)
 Weger, Russell (Agriculture)⁴
 Wehling, Donald Russell (Mechanical Engineering)
 Weinberg, Leonard David (Electrical Engineering)¹
 Weiner, Leonard (Education)⁴
 Weiner, Muriel Ann (Journalism)
 Weinstein, Gertrude (Liberal Arts and Sciences)¹
 Weishar, Robert Charles (Division of Special Services for War Veterans)³
 Weiss, Fred Raymond (Mechanical Engineering)¹
 Welch, Harold A. (Civil Engineering)⁴
 Welles, Marion Francis (Vocational Agriculture)⁴
 Wellpott, Alice Emma (Education)³
 Wensch, Glen William (Metallurgical Engineering)^{**4}
 Weppler, Mildred Louise (Education)³
 West, Vincent Irving (Agriculture)^{***}
 Westaby, Marjorie May (Home Economics)³
 Westerhold, Arnold Frederick (Agriculture)⁴
 Westerhold, Walter Charles (Agriculture)^{**4}
 Wetzler, Robert Livingston (General Business)²
 Wham, James Bundy (Division of Special Services for War Veterans)⁴
 Whitaker, Robert William (Agricultural Engineering)^{**}
 White, Eugene (Education)
 White, Rosemary (Journalism)
 Whitley, Mary Beth (Music Education)
 Whitson, Helen Mae (Home Economics)^{*}
 Wiedow, Roy Wallace, Jr. (Civil Engineering)
- Wildman, Phyllis Lou (Liberal Arts and Sciences)
 Wilens, Beverly Delores (Liberal Arts and Sciences)¹
 Wiley, John Orval (Division of Special Services for War Veterans)⁴
 Wiley, Thomas Appelle (Division of Special Services for War Veterans)
 Wilkaitis, Joseph John (Education)
 Wilkie, John Robert (Civil Engineering)^{**4}
 Wilkie, Robert Thomas (Education)
 Wilkins, George Orville (Journalism)^{**4}
 Wilkins, Judd Rice (Division of Special Services for War Veterans)⁴
 Williams, Corinne Gladys (Journalism)
 Wilson, Audrey Eunice (Journalism)
 Wilson, Douglas Otto (Mechanical Engineering)
 Wilson, Kenneth Lichtie (Architecture)⁴
 Wilson, Robert Wayne (Commerce and Law)¹
 Wilson, Stanley John, Jr. (Management)
 Windmiller, Leonard (Ceramics)
 Wise, Florence Evelyn (Education)
 Wishart, Walter William (Metallurgical Engineering)⁴
 Wissel, Howard Alvin, Jr. (Marketing)
 Wissmiller, Virgil Clare (Agriculture)
 Witter, Lois Jean (Education)
 Wofford, Thomas Dewitt, Jr. (Civil Engineering)^{**}
 Wolf, Calvin (Liberal Arts and Sciences)¹
 Wolf, Eunice Joyce (Journalism)
 Wolffson, Davida Maxine (Liberal Arts and Sciences)⁴
 Wood, Wilma Wave (Education)¹
 Woodall, Earl Chance (Division of Special Services for War Veterans)³
 Worden, Doris Wallin (Management)^{**4}
 Wyman, Clarence (Education)³
 Yarnell, Joyce Eileen (Physical Education)
 Yehling, George Carl, Jr. (Chemical Engineering)^{*}
 Young, Mildred Lucille (Journalism)
 Zambrano, Marcelo (Architecture)¹
 Zebrun, Olga (Commercial Teaching)
 Zerin, Clifford Francis Michael (Accountancy)
 Ziegelmiller, Wayne Emerson (Aeronautical Engineering)
 Zindell, Irving Earl (Physical Education)⁴
 Zwick, Clara (Liberal Arts and Sciences)¹

Degree of Bachelor of Fine Arts

(In the subjects shown in parenthesis)

- Atwood, Betty Jane (Art Education)^{**4}
 Avery, Homer James (Industrial Design)
 Bischoff, Paul Walter (Industrial Design)^{*1}
 Burke, Jane (Painting)¹
 Burr, Edward Everett (Industrial Design)⁴
 Cunningham, Martha Jane (Art Education)
 Dean, Betty Lou (Industrial Design)
 Fairbank, Margery (Industrial Design)¹
 Ford, Marian Fonner (Commercial Design)¹
 Friedman, Sidney Jack (Industrial Design)
 Gray, Nancy Jane (Industrial Design)^{*}
 Gullett, Martha Kent (Commercial Design)^{*}
 Ingles, Jane Noel (Art Education)
 Keeran, Betty Ethel (Painting)^{*}
 Krull, Irene Mary (Industrial Design)¹
 Lippincott, Joan Ralston (Industrial Design)^{***}
- Logsdon, Georgann (Painting)^{**4}
 Lorenz, Rita Catherine (Art Education)
 Luft, Donald William (Painting)^{**4}
 Lynn, Mary Katherine (Commercial Design)⁴
 May, Patricia Jeane (Art Education)
 Nurmi, Leo Gunnar (Landscape Architecture)¹
 Parker, Patricia Cecelia (Art Education)
 Russell, Susan Joan (Commercial Design)^{**4}
 Sasaki, Hideo (Landscape Architecture)^{****}
 Sherwood, Margaret Florence (Painting)¹
 Sprague, Mark Anderson (Painting)^{**4}
 Stinson, Robert Edwin (Painting)⁴
 Vacendak, Alexander (Landscape Architecture)
 Wallberg, Ruth Esther (Art Education and Painting)^{***}
 Wallace, James Barton (Art Education)⁴

Degree of Bachelor of Music

- Dowling, Eleanore Cassia⁴
 Green, John Elwyn
 Gulick, Frances^{***4}
 Hannah, Marilyn Vivian
 Hayes, Mary Lou
 Huffaker, Nina Lou^{*}
 Hunter, Stella Jean Lehmann^{**}
- Hutter, Ruth Maria^{**}
 Landes, Richard Washington
 Mayhew, Mary Elizabeth^{***}
 Pardue, Margaret Lou Adams⁴
 Rundle, Dorothy Belting^{**}
 Skelton, William^{*}
 Zirner, Ludwig Ernst

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

COLLEGE OF LAW

Degree of Bachelor of Science

Gregory, John Charles

Milroy, James Edward⁴

Degree of Bachelor of Laws

Anderson, LaVerne Eric, A.B., 1944
 Bumgarner, James McNabb, A.B., 1941
 Cagle, Richard Allan, B.Ed., Southern Illinois Normal University, 1943⁴
 Carson, John David, A.B., 1942⁴
 Condon, Harry David, A.B., Carthage College, 1929; A.M., University of Missouri, 1941⁴
 Eagle, Robert Arthur, A.B., 1942⁴
 Ellison, Luther Ernest, A.B., 1943
 Hatch, Jack Graydon, B.S., North Central College, 1941
 Hayes, Roger Wendell, A.B., 1940
 Judy, Durward Gail, B.S., 1939¹
 Keefe, James Neese, A.B., Quincy College, 1943⁴
 Keller, Joe Wallace, B.S., 1942⁴
 Lierman, Eugene Paul, B.S., 1940⁴
 Linder, James Glen, B.Ed., Eastern Illinois State Teachers College, 1940⁴
 Littler, John Robert
 Lynch, Lincoln Howard, B.S., 1940⁴
 Magill, Robert Maurice, B.S., 1940

Manuele, Anthony Joseph, B.S., 1938
 McCarthy, Robert William⁴
 McDevitt, Joseph Bryan, A.B., 1941
 McDonald, John Warlick, Jr., A.B., 1943
 McGrady, Denis Antony, B.S., 1943
 McLaughlin, James Morton, A.B., 1940
 Melzer, William Norman, A.B., 1942⁴
 Morris, William Otis, A.B., College of William and Mary, 1944¹
 O'Connell, John Francis, A.B., 1941
 Rich, Elwood Merrell⁴
 Robbins, Lyle Walker, A.B., Illinois Wesleyan University, 1934
 Rowe, Max Leavitt, A.B., 1943⁴
 Ryan, Thomas Francis⁴
 Shreve, Theodore Leonard, A.B., West Virginia University, 1941⁴
 Shultz, Robert Harry, A.B., 1941⁴
 Spitzer, William Hayden, Jr., A.B., 1941
 Stern, Sylvia, B.S., 1945⁴
 Williams, Virtrue Beech, A.B., 1941

Degree of Doctor of Law

Anderson, John Bayard, A.B., 1942
 Croessmann, Dwight Ward, B.S.L., Northwestern University, 1941
 Haley, Bernice Cooper, B.S., Michigan State College, 1939^{*1}
 Hedge, Joseph Streid, B.S., 1941

Nichols, George Addison, A.B., Carthage College, 1939^{*4}
 Parker, David Edgar, A.B., University of Chicago, 1940^{*}
 Stone, Hal Marot, Jr., A.B., Stanford University, 1941^{*4}
 Taylor, Richard Trelore, B.S., 1939

LIBRARY SCHOOL

Degree of Bachelor of Science in Library Science

Anthony, Carol Horton, A.B., University of Cincinnati, 1938^{*}
 Attridge, Mildred Lucille, A.B., Lake Forest College, 1934^{*}
 Aufdenkamp, Jo Ann, A.B., MacMurray College, 1945
 Avrin, Alexander Henry, A.B., Wayne University, 1943⁴
 Bartolini, Renato Paul, B.Ed., Illinois State Normal University, 1942⁴
 Bead, Charles Conrad, LL.B., University of Berlin, 1932; LL.D., University of Erlangen, 1935^{**4}
 Berg, Virginia Anna, A.B., Cornell College, 1945
 Burham, Nancy Elaine, A.B., Duchesne College, 1945^{**}
 Bushee, Ralph Waldo, Jr., A.B., Coe College, 1942; B.D., McCormick Theological Seminary, 1945³
 Butts, Dorothea Kathleen, A.B., Elmhurst College, 1940^{**}
 Cavender, Thera Pauline, B.S., Southwest Missouri State Teachers College, 1932; A.M., University of Missouri, 1943^{*3}
 Chapin, Doris Lillian, B.S., Kansas State College, 1942⁴
 Cox, Ruth Irene, A.B., University of Oklahoma, 1945
 Davis, Russell Edson, A.B., University of Rochester, 1942⁴
 Dechman, Ardis Mae, A.B., Western College, 1945^{*}
 Devanny, Ann Elizabeth, B.Ed., Illinois State Normal University, 1940^{*3}

Duesenberg, Margaret Marie, A.B., University of Colorado, 1945
 Durhan, Marjorie Deane, A.B., Coe College, 1945
 Eaton, Elizabeth Shelby, A.B., University of Kentucky, 1932
 Ezell, Viola Henrietta, A.B., Livingston College, 1938⁴
 Fawver, Betty Jane Duncanson, B.Ed., Illinois State Normal University, 1943
 Fromel, Helen Louise Granath, A.B., Rockford College, 1938³
 Gilley, Ruth Evelyn, A.B., Olivet Nazarene College, 1926; A.M., Ohio State University, 1932^{**}
 Glasgow, Elsie Elizabeth, B.S., M.S., Purdue University, 1924, 1944
 Griffin, Edna Earle, A.B., George Peabody College for Teachers, 1945
 Harris, Geneva Nelson, A.B., Clark College, 1931
 Harshbarger, Margaret, A.B., McKendree College, 1944
 Hildebrandt, Florence Marion, A.B., Mount Holyoke College, 1928^{**4}
 Hill, Dorothy Ann, A.B., University of North Carolina, 1940⁴
 Hueftle, Ruth Marie, A.B., Fort Hays Kansas State College, 1945
 Johnson, Lacie Mae, A.B., State University of Iowa, 1942
 Kahle, Maybelle Eileen, B.S., University of Wisconsin, 1936; A.M., University of Michigan, 1941⁴
 Knight, Keith Coffman, A.B., University of Tennessee, 1945

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Knight, Kenneth Colson, B.S., Knox College, 1930⁴
- Lockett, Mildred Louise, A.B., Virginia Union University, 1943
- Lodge, Louise Finley, A.B., A.M., Ph.D., 1924, 1931, 1937^{*3}
- Long, Dorothy, A.B., Woman's College, University of North Carolina, 1929; A.M., University of Wisconsin, 1942^{**4}
- Markle, Margaret Borland, B.S., Pennsylvania State College, 1941
- McConnell, Alice Appell, A.B., A.M., 1935, 1936^{*3}
- McConnell, Max Winfred, B.S., Bradley Polytechnic Institute, 1940
- McCord, Doris Louise, A.B., Western College, 1945^{**}
- Metcalfe, John Hanson, A.B., University of Kentucky, 1941⁴
- Miller, Rosemary, A.B., Syracuse University, 1932³
- Moore, Georgia Ellen, A.B., Indiana University, 1938^{*3}
- Mullendore, Jessie Marian, A.B., Franklin College, 1933^{*3}
- O'Connor, Gertrude Patton, A.B., Ohio State University, 1922; A.M., Northwestern University, 1937³
- Pendleton, Emma Louisa, A.B., Earlham College, 1945
- Protzman, Ruth Marie, A.B., Manchester College, 1942^{*}
- Radmacher, Helen Mary, A.B., 1945³
- Ramsey, Jack Austin, A.B., University of Kansas, 1945
- Ramsey, Sue Worsley, A.B., University of California at Los Angeles, 1942³
- Samuelson, Gladys Lucille, A.B., 1945^{*}
- Sawyer, Peggy Naomi, A.B., Louisiana Polytechnic Institute, 1944
- Schaack, Gertrude Hilda, A.B., University of Wisconsin, 1944^{*}
- Schultz, Susan A., A.B., Kletzing College, 1940³
- Sharp, Evelyn Clarissabell, B.S., Ball State Teachers College, 1940^{*}
- Smogard, Elaine Carol, A.B., Huron College, 1945^{*}
- Snyder, Betty Jean, A.B., University of Texas, 1944
- Sohl, Marjorie Ann, A.B., Indiana University, 1944^{**}
- Speirs, Mildred Kathryn, B.S., South Dakota State College of Agriculture and Mechanic Arts, 1944³
- Talmadge, Robert Louis, A.B., University of Kansas, 1941^{**4}
- Tong, Ernestine Wei King, B.Ed., University of Hawaii, 1944
- Tryon, Ardella Katherine, A.B., 1944³
- Wade, Bonnie Marie, A.B., 1945
- Waller, Evelyn Louise, A.B., Grinnell College, 1928; A.M., 1941^{**3}
- Ward, Willie Pauline, B.S., North Texas State Teachers College, 1936; A.M., University of Texas, 1940^{*3}
- Wascher, Corinne Jackson, A.B., University of South Dakota, 1933^{*3}
- Watkins, Margaret Batchelder, A.B., University of Michigan, 1930³
- Williams, Hannah Esther, B.S., A.M., 1923, 1933³
- Wolf, Virginia Loraine, A.B., B.Ed., University of Cincinnati, 1942, 1943
- Zimmermann, Marguerite Louise, B.Ed., Illinois State Normal University, 1942^{*3}

COLLEGE OF DENTISTRY

Degree of Bachelor of Science in Dentistry

- Greco, James Frank
- Simons, Stanley Jerome

Degree of Doctor of Dental Surgery

- Altman, Alvin Seymour, B.S., 1945
- Bloom, Philip, B.S., M.S., Syracuse University, 1939, 1941^{*}
- Carius, Marvin Wilbur, B.S., 1944
- Cerney, Alan James, B.S., 1944
- Christoff, Demeter, B.S., 1944
- Cohen, Barnett, B.S., 1945
- Corwin, Bernard B., B.S., 1945
- Cox, John, B.S., Central Y.M.C.A. College, 1944
- Eshensen, Victor George
- Fierce, Francis Marion, Jr.
- Frost, Robert Fitts, B.S., 1944
- Greco, James Frank
- Green, Philip, B.S., 1944
- Hazelkorn, Jules, A.B., B.S., 1944
- Howard, Joseph Hannibal, A.B., Fisk University, 1935; B.S., 1944
- Iloff, Donald Woodrow
- Johnston, Thomas Sherman
- Kahn, Lester Jay, B.S., 1944
- Kamenir, Edward
- Kroll, George, B.S., Central Y.M.C.A. College, 1944; B.S., 1944
- Levin, Louis, B.S., Central Y.M.C.A. College, 1944
- Malone, Anthony John, B.S., 1943
- Mattes, Robert Doris
- Miller, Irving Charles
- Mintzer, Herman, B.S., 1944
- Molay, Arthur Frank^{*}
- Olsan, Keith Eldon, B.S., 1945
- Omens, Herbert C.
- Peacock, James Christopher, A.B., 1942²
- Penefsky, Morris
- Pogirski, Stanley, B.S., Central Y.M.C.A. College, 1938
- Postlewait, Richard Franklin
- Randolph, Robert Greenwood
- Raskin, Joseph, B.S., 1944
- Reizner, Burton Burrell, B.S., 1944
- Schulte, William Charles
- Sircus, Sidney Bernard, B.S., 1944
- Spiro, Albert Robert, A.B., 1944
- Vitt, Warren Russell, B.S., 1945
- West, Christopher Otis, B.S., Alcorn Agricultural and Mechanical College, 1937; B.S., 1944
- Wilson, Jerry Scott, A.B., Cornell College, 1943
- Zwemer, Jack, B.S., 1944^{*}

COLLEGE OF MEDICINE

Degree of Bachelor of Science in Medicine

- Anderson, Charles Edward, Jr.
- Ariagno, Richard Paul
- Ash, Mildred
- Bennett, Alfred McDonald²
- Berry, Carl Davis, Jr.
- Biggs, Robert Alan
- Biliskis, Albert George, B.S., D.D.S., 1943, 1944

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Blackburn, Sanford Fife
 Bone, Ernst Chester, A.B., Illinois College, 1936; A.M., 1942²
 Bonnett, Orville Thomas, Jr.
 Bouer, Robert
 Broome, Netajean Grace, B.S., 1944
 Brown, James Deacy, Jr.
 Calvo, Alberto Enrique, M.P.H., Johns Hopkins University, 1942
 Crown, Charles Augustus, B.S., University of Notre Dame, 1945
 Davidson, Woodrow Wilson, A.B., Olivet Nazarene College, 1945
 Dunn, William Joseph
 Edelman, Richard Joseph
 Edwards, Robert Morse
 Edwards, William Evans
 Erickson, Addison Howard
 Faraghan, William George
 Fischhoff, Joseph
 Fisher, Ben
 Forman, Max
 Goldman, Bernard
 Goldstein, Herbert Solomon
 Goldstein, Irwin Richard
 Grayson, Richard Roland
 Green, Robert Abraham
 Greenman, Marshall Bernard
 Gregory, Thomas Richard²
 Grice, Paul Frederick²
 Hammerstrom, Frank Ronald
 Hank, Emil Julius
 Hawkins, Crawford Tucker, Jr.
 Hayes, Warren Harry
 Hayner, Norman Sherwood
 Hays, Edward Parker
 Heath, Parker, Jr.
 Hencky, Gerhard Richard
 Herman, Charlotte Alice, B.S., 1940; M.S., Iowa State College, 1944
 Hoffman, Francis Hill
 Horenstein, Simon
 Hunchar, Fredric Parker
 Iverson, Helen Victoria
 Johnson, Thomas Gordon
 Katz, Bertram
 Kaufman, Arthur Lester
 Kohl, Darwin Louis
 Kowalski, Julius Matthew²
 Lasker, Burton Harold
 Lipton, Earle Lloyd
 Maas, Gerald Irwin
 Maimon, Arthur Currie
 Mansueto, Mario Daniel
 Marchesi, John Charles
 McLaughlin, John Hazlett
 Miller, Joann Emily, A.B., MacMurray College, 1942; M.S., 1943
 Moles, Joseph Bartholomew
 Murray, William Norbert
 Neilson, William George, A.B., 1944²
 Nejedly, Robert Francis
 Norbut, Alexander John, A.B., 1940
 Olson, Carl Emil²
 Ostroff, Milton Merrele, A.B., University of West Virginia, 1946
 Otten, Mary Jane, B.S., 1941
 Parker, Paul Patrick
 Phillips, Irving, A.B., Oberlin College, 1943
 Pilot, Martin Lewis
 Plesscher, William Harold
 Postel, Allen Hannan, Ph.B., University of Chicago, 1944
 Purdy, Robert Alva
 Rice, William Garret
 Richert, Joel Hiram
 Ritter, John Albert
 Roemhild, Franklin Neal
 Rose, Mona
 Rosell, Jon Ericson
 Rosenblum, Louis
 Ruchman, Lawrence
 Schewe, Elmer John, Jr.
 Schwartz, Morton
 Sell, Dorothy Judith
 Shapiro, Seymour William
 Siegel, Bernard Max
 Stern, Arthur Alexander
 Stricklin, John Alfred
 Summerfield, Lawrence David
 Susman, Irvin Commer
 Swingley, Robert Paul, D.V.M., Agricultural and Mechanical College of Texas, 1943
 Taylor, Richard Wirt
 Tourney, Garfield
 Tou Velle, Alwyn Ross
 Utne, John Richard
 Wacker, John Frank
 Wagenknecht, Theodore William, Jr.
 Wagoner, Gilbert Peter
 Walker, Rufus James
 Weiss, Samuel
 Williamson, Aaron Ronald²
 Willner, Helen Marcella
 Wilson, George Clayton
 Wise, Catherine Rachel
 Wolf, Milton, A.B., University of Pennsylvania, 1943
 Woodworth, Everett Wayne
 Yow, Raymond Murray

Degree of Bachelor of Science in Occupational Therapy

- Anderson, Phyllis Clare
 Bunch, Shirley Jean¹
 Earlenbaugh, Margaret Anna¹
 Fluegge, June Claire
 Gould, Vera Frances

- Howard, Angeline Aliva¹
 Hutton, Patricia Jean¹
 Moorshead, Dorothea Pearl¹
 Mugge, Phyllis Bushnell¹
 Sheppard, Patricia Ann¹

Degree of Doctor of Medicine

- Alexander, Raymond Arthur
 Alpern, Charles, B.S., 1944*
 Altschul, Sol, B.S., 1943*
 Aram, Hartley Herrick, A.B., Augustana College, 1940; M.S., State University of Iowa, 1943
 Atherton, Leon George, B.S., 1944
 Bartels, Dorothy Helen, B.S., 1944
 Beezy, Reuben, B.S., 1944
 Benson, John Stephen, A.B., 1942*
 Benvenuti, Hansel, B.S., Central Y.M.C.A. College, 1943; B.S., 1944
 Berman, Walter Elliott, A.B., B.S., 1944
 Bone, Ernest Chester, A.B., Illinois College, 1936; A.M., B.S., 1942, 1946
 Borgsmiller, William Jennings, B.S., 1944

- Brechtel, Ida Margaret, B.S., Rosary College, 1943
 Buckingham, Richard Albert
 Budwig, Ira Adolph, Jr., A.B., B.S., 1944*
 Buettner, Elza Rosalie, B.S., Northwestern University, 1943
 Burdon, John Carter, B.S., 1944*
 Busch, Harris, B.S., 1945*
 Byrum, Robert Jordan, A.B., B.S., University of North Dakota, 1944
 Cap, Thaddeus Walter, A.B., B.S., 1944*
 Carlson, Ralph Everett, A.B., Augustana College, 1943; B.S., 1944
 Casey, William Carleton, B.S., 1944
 Ceclh, Robert Franklin
 Chambas, Harry Dan, B.S., 1944

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Chertack, Melvin M., B.S., 1944
 Christensen, Eldis Marvin, A.B., Wheaton College, 1943
 Cohen, Cyril S., B.S., 1944
 Cowart, Norton Ethelbert, B.S., Birmingham-Southern College, 1943
 Dahl, Hartvig Adrian, A.B., Jamestown College, 1944; B.S., University of North Dakota, 1944
 Darst, Major, Jr., B.S., Bradley Polytechnic Institute, 1944
 Davis, William Scott
 Deabler, Harold Herbert, A.B., North Central College, 1944; B.S., 1944
 DeYoung, Henry D., B.S., 1944
 Dille, James Madison, B.S., M.S., University of Nebraska, 1930, 1933; Ph.D., Georgetown University, 1935; B.S., 1944
 Dobrow, Bernard, B.S., 1944
 Dooley, Robert Daniel, B.S., 1945
 Dray, Sheldon, B.S., University of Chicago, 1941*
 Dwyer, William Burel, B.S., John Carroll University, 1943; B.S., 1944
 Echt, Raymond Jacob, B.S., 1944*
 Faul, Clarice Rose
 Feld, Myron, B.S., 1943, 1944
 Ferry, John Donald, B.S., 1944
 Fischer, Arthur Robert
 Flaherty, James Joseph, B.S., 1944
 Flaherty, Neil Francis, B.S., 1944*
 Forman, Irving Morton, B.S., 1944
 Frank, Norman Morton, B.S., 1945
 Froning, Edward Cain
 Froom, Jack, B.S., 1945
 Frymire, John Arthur, A.B., 1943
 Garrison, Hugh
 Gaspich, Robert James, B.S., 1944
 Gilmore, Robert Lee
 Gosh, Joseph Daniel, B.S., Central Y.M.C.A. College, 1944
 Goldenberg, Charles, B.S., 1944*
 Goldman, Lillian R., B.S., 1944
 Goldman, Morton Aaron, B.S., 1944
 Goodwin, Paul Joseph, B.S., Loras College, 1943
 Gregory, Thomas Richard, B.S., 1946
 Grossman, Herbert Jules, B.S., 1944
 Harris, James Howard, A.B., Cornell University, 1944
 Harris, Payne Senseman, B.S., 1942
 Hart, Richard Howe, B.S., 1944**
 Hediger, Edward Louis, B.S., 1944
 Henry, Marvin David, A.B., 1944
 Hepper, Norman Glenn Gordon, A.B., B.S., University of North Dakota, 1944*
 Hilker, Gloria L. J., B.S., Northwestern University, 1943
 Hill, Evelyn Camille, B.S., 1945
 Hines, James Rodger, B.S., 1944
 Hornstein, Howard Leslie
 Hunter, Harry Laymond, A.B., B.S., 1944
 Icenogle, Richard Eugene, B.S., 1944
 Ihnen, Menard Chalmers
 Irish, Keith Randall, B.S., 1944*
 Jarand, Paul Ambuehl, B.S., 1944
 Javid, Hushang
 Javid, Manucher
 Jenicek, John Andrew, B.S., DePaul University, 1943
 Kahl, Leonard Musselman, A.B., North Central College, 1944; B.S., 1944
 Kahne, Morton Jerome, B.S., 1944
 Kaufman, Harry, A.B., 1944
 Kaufmann, Robert John, A.B., James Millikin University, 1943
 Ketring, Eldon Grant, B.S., 1944
 King, Harry, B.S., 1944*
 Koeck, Martin, III, B.S., 1944*
 Kousnetz, Irving, B.S., 1944*
 Kowalski, Julius Matthew, B.S., 1946
 Krejca, Frank Joseph, B.S., 1943
 Lane, Robert Ellsworth, B.S., 1944
 Leone, Louis Berardino, A.B., B.S., 1944
 Levatin, Bernard, B.S., 1944*
 Levin, Milton, B.S., 1944
 Levine, Robert Stanley, A.B., Harvard University, 1942
 Lichtenman, William Frank, A.B., B.S., 1943, 1944
 Lieberman, Howard Leslie, B.S., 1944
 Liebner, Edwin Joseph, B.S., 1944
 Lipp, Robert George, B.S., University of North Dakota, 1944
 Loucisz, Edward Anthony, B.S., Illinois Institute of Technology, 1943
 Lowry, Earl William, B.S., 1944
 Lundeborg, Palmer Oliver, A.B., B.S., University of North Dakota, 1942, 1944
 Macdonald, Neil Alexander, A.B., B.S., University of North Dakota, 1944
 MarCia, Alfred Marcé, A.B., Miami University, 1936; D.V.M., Texas Agricultural and Mechanical College, 1941; B.S., University of North Dakota, 1944
 Marks, Thomas Spencer, B.S., 1944
 Martinek, Jaroslav, B.S., Central Y.M.C.A. College, 1942; B.S., 1944
 McClellan, Don Seelye, B.Ed., Western Illinois State Teachers College, 1939; M.S., 1940
 McLaughlin, Dean Edwin, A.B., 1943*
 McLaughlin, John Richard, B.S., 1945*
 Meisenheimer, William Edmund, B.S., 1944
 Metzmaker, Charles Otto, B.S., 1944
 Michaels, Henry Martin, B.S., 1944
 Monahan, John William, B.S., 1943
 Moore, Thomas Stephen, B.S., 1944
 Moshein, Jack, A.B., B.S., 1944
 Muench, Robert James, B.S., 1944
 Muldowney, John Joseph, B.S., 1944
 Neilson, William George, A.B., B.S., 1944, 1946
 Nord, Stanley Kay, B.S., Illinois Wesleyan University, 1944
 Nordquist, Paul Winston, A.B., B.S., University of North Dakota, 1944
 O'Connor, Jeffrey Anthony, A.B., 1944
 Olson, Carl Emil, B.S., 1946
 Oster, Ellis, A.B., B.S., University of North Dakota, 1944
 Paynter, Camen Russell, B.S., 1944
 Perkins, Maxwell Bernard, A.B., B.S., 1944
 Perry, Thomas Kirk
 Peters, Howard Rudolph, A.B., Southern Illinois Normal University, 1945; B.S., 1944
 Plesscher, William Harold
 Prenzler, Lyle Howard, B.S., 1944
 Pugh, William Ellis, A.B., B.S., 1944
 Reinert, John Edward, B.S., 1944
 Robinson, William Wallace, B.Ed., Southern Illinois State Normal University, 1939; B.S., 1944
 Rollie, Orris Oliver, A.B., B.S., University of North Dakota, 1944
 Rosen, Irwin Elwood, B.S., 1944
 Rosner, Marvin Aron, B.S., 1944
 Rossiter, Lewis James, A.B., M.S., 1935, 1943
 Rubin, Wallace, B.S., 1944
 Saxon, Richard George, B.S., 1944
 Schaar, Frances Elizabeth, A.B., Manchester College, 1933; M.S., University of Wisconsin, 1938
 Schiller, Filmore, B.S., 1944*
 Schlesinger, Robert Bertrand, B.S., 1944*
 Schmidt, Jay Herman, B.S., 1944
 Schunk, George James, A.B., Jamestown College, 1944; B.S., University of North Dakota, 1944
 Segal, Peter Bernard, B.S., 1942
 Sexton, Robert Ross, B.S., Bradley Polytechnic Institute, 1944
 Sherman, Bennett Richard, B.S., 1944
 Sickley, Jerome Floribert, B.S., 1944
 Singer, Meyer Jerome, B.S., 1944

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Smith, Henry DeWillis, B.S., Beloit College, 1943
 Snider, Ross Adkins, B.Ed., Southern Illinois Normal University, 1933; M.S., Washington University, 1934
 Sofio, Gilbert Foster
 Solomon, Harry James, B.S., 1944**
 Staack, Henry Frederick, Jr., A.B., Augustana College, 1943
 Steinbach, Albert Leland, A.B., B.S., University of North Dakota, 1944
 Stevenson, Lee Burdette
 Sylvester, Edgar Bradley
 Tenczar, Francis Joseph, B.S., University of Notre Dame, 1945
 Tenney, Alonzo Cass, Jr., B.S., Northwestern University, 1943; B.S., 1944*
 Van Dyke, Ann Elizabeth, A.B., Rockford College, 1935
 Van Ham, Joseph Augustine, B.S., 1944
 Wachob, Tom Webb, Jr., B.S., Illinois Wesleyan University, 1944
 Wainright, James Wallace, A.B., DePauw University, 1944; B.S., 1944
 Wallach, Howard Frederic, A.B., University of Michigan, 1943; B.S., 1944*
 Walk, Silas, B.S., 1944
 Weber, Lowell Wyckoff, A.B., Jamestown College, 1944; B.S., University of North Dakota, 1944
 Whitlark, Frederick Louis, B.S., 1944*
 Williamson, Aaron Ronald, B.S., 1946
 Williamson, George Leslie, A.B., B.S., University of North Dakota, 1944
 Woodman, Forrest Jackson, Jr., B.S., 1944
 Worcester, Richard Laugel, Jr., B.S., 1944*
 Wright, Harry Edward, A.B., B.S., 1931, 1944
 Wrzesinski, John Thomas, B.S., 1944
 Wunsch, Charles Alphonse, B.S., Loyola University, 1943; B.S., 1944*
 Yuskis, John Peter
 Zack, Russell William, B.S., 1944
 Zimmerman, Douglas Allen, B.S., 1944

COLLEGE OF PHARMACY

Degree of Bachelor of Science in Pharmacy

- Alpert, Gilbert Ernest²
 Boggio, Joseph Alexander
 Calabrese, Michael Domic, Ph.C., 1931
 Chodnowsky, Max
 Garfinkel, Norman
 Langaud, Michael John
 Nowak, Irene Catherine
 Prunty, Hubert Vernon
 Retzky, Herbert Marvin
 Schobert, Rudolph Carl
 Weitzman, Lester
 Wozniak, Myron E.

HONORARY DEGREES

Degree of Doctor of Laws

- Allen, Raymond Bernard, M.D., Ph.D.
 Willard, Arthur Cutts, B.S., D.Eng., LL.D.

GRADUATE SCHOOL (URBANA AND CHICAGO)

Degree of Doctor of Philosophy

(In the subjects shown in parenthesis)

- Alexander, Wyvona Belle, A.B., Oklahoma College for Women, 1938; A.M., Oberlin College, 1941; (Chemistry)⁴
 Bailey, William John, B.Ch., University of Minnesota, 1943; (Chemistry)¹
 Barksdale, Norval Palmer, B.Pd., Lincoln University, 1917; A.B., University of Kansas, 1922; A.M., 1934; (French)
 Bates, Grace Elizabeth, B.S., Middlebury College, 1935; M.S., Brown University, 1938; (Mathematics)
 Bauman, Robert Andrew, B.S., University of Rochester, 1943; (Chemistry)¹
 Brock, Marilyn Jean, B.S., Butler University, 1943; (Chemistry)⁴
 Brown, Aubrey J., B.S., M.S., 1935, 1937; (Agricultural Economics)¹
 Burson, Samuel Bradley, A.B., Stanford University, 1940; M.S., 1944; (Physics)⁴
 Burton, Robert Louis, A.B., Colorado College, 1942; A.M., Rice Institute, 1943; (Chemistry)⁴
 Cagle, Frederic William, Jr., B.S., M.S., 1944, 1945; (Chemistry)¹
 Campbell, James Dow, Jr., A.B., Vanderbilt University, 1934; A.M., 1935; (Mathematics)
 Chadwick, David Henry, B.S., M.S., University of New Hampshire, 1940, 1942; (Chemistry)
 Coon, Minor Jesser, A.B., University of Colorado, 1943; (Chemistry)⁴
 Donald, David Herbert, A.B., Millsaps College, 1941; A.M., 1942; (History)⁴
 Dushkind, Shirley Ruth, A.B., Hunter College, 1940; A.M., Cornell University, 1942; (Physiology)
 Easton, Nelson Roy, A.B., Middlebury College, 1941; (Chemistry)
 Eickhorst, William, B.S., Western State Teachers College, 1933; A.M., 1941; (German)⁴
 Emmick, Robert D., A.B., Hope College, 1942; (Chemistry)
 Enos, Herman Isaac, Jr., A.B., M.S., University of Southern California, 1942, 1943; (Chemistry)¹
 Feinberg, Leonard, B.S., A.M., 1937, 1938; (English)⁴
 Ferguson, William Allen, A.B., Missouri Valley College, 1937; A.M., 1938; (Mathematics)
 Ferrill, Everett William, B.Ed., Southern Illinois Normal University, 1937; A.M., University of Colorado, 1939; (History)⁴
 Fischer, Robert Blanchard, B.S., Wheaton College, 1942; M.S., 1944; (Chemistry)
 Freier, Herbert Edward, A.B., Yankton College, 1943; (Chemistry)⁴
 Hamilton, Clara Eddy, B.S., University of Georgia, 1942; A.M., 1944; (Zoology)
 Hanmer, Robert Stuart, B.S., M.S., 1941, 1942; (Chemistry)
 Helton, Floyd Franklin, A.B., Westminster College, 1935; A.M., University of Missouri, 1939; (Mathematics)⁴

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Holmes, Walter Robert, A.B., Wheaton College, 1938; A.M., 1939; (History)⁴
- Howard, Edgar, Jr., B.S., Brown University, 1943; (Chemistry)⁴
- Hussemann, Dorothy Lillian, B.S., M.S., 1928, 1929; (Bacteriology)⁴
- Idle, Dunning, A.B., A.M., University of Michigan, 1925, 1926; (History)
- Inman, Buis Taft, B.S., M.S., University of Kentucky, 1929, 1932; (Agricultural Economics)⁴
- Jackson, William Gordon, B.S., University of Michigan, 1942; M.S., 1943; (Chemistry)¹
- Jonassen, Hans Boegh, B.S., M.S., Tulane University, 1942, 1944; (Chemistry)
- Kovacic, Peter, A.B., Hanover College, 1943; (Chemistry)
- Kramer, Margaret Davis, A.B., Meredith College, 1937; M.S., North Carolina State College, 1940; (Chemistry)¹
- Little, Marguerite, B.Ed., Eastern Illinois State Teachers College, 1943; A.M., 1944; (English)
- Mathy, Leonard George, Jr., A.B., A.M., 1941, 1943; (Economics)
- Matern, John Arthur, B.S., Ohio State University, 1941; M.S., 1943; (Chemistry)
- Mitchell, Winifred Ruth, B.S., M.S., 1941, 1943; (Bacteriology)⁴
- Moretto, Oreste, C.E., Universidad Nacional del Litoral, 1939; M.S., 1944; (English)¹
- Morrill, Charles Cleon, D.V.M., M.S., Michigan State College, 1933, 1935; (Veterinary Pathology and Hygiene)
- Mutti, Ralph Joseph, B.S., University of Missouri, 1938; M.S., 1940; (Agricultural Economics)⁴
- Nalbandov, Olga Oliver, B.S., M.S., Oklahoma Agricultural and Mechanical College, 1935, 1937; (Chemistry)⁴
- Oppegard, Alfred Lester, A.B., Grinnell College, 1941; (Chemistry)⁴
- Paape, Charles William, A.B., A.M., Northwestern University, 1935, 1937; (History)
- Parham, William Eugene, B.S., Southern Methodist University, 1943; M.S., 1944; (Chemistry)⁴
- Parry, Robert Walter, B.S., Utah Agricultural College, 1940; M.S., Cornell University, 1942; (Chemistry)⁴
- Peng, Ke Ming, B.S., Hopei Provincial College of Agriculture, 1929; M.S., 1939; (Agronomy)⁴
- Pipenberg, Kenneth James, B.S., Wheaton College, 1943; (Chemistry)
- Powers, Robert William, B.S., Bradley Polytechnic Institute, 1943; (Chemistry)⁴
- Quagliano, James Vincent, B.S., M.S., Polytechnic Institute of Brooklyn, 1938, 1940; (Chemistry)
- Reed, Lester James, B.S., Tulane University, 1943; (Chemistry)⁴
- Rockwell, Harriet Esther, B.S., Keuka College, 1937; (Chemistry)
- Sampson, Herman Julian, Jr., A.B., Augustana College, 1940; (Chemistry)⁴
- Saunders, James Henry, B.S., University of Kentucky, 1944; (Chemistry)⁴
- Schubert, Jewell Emma, B.S., Northwestern University, 1936; M.S., 1944; (Mathematics)
- Simrall, Dorothy Van Winkle, A.B., Grinnell College, 1940; A.M., University of North Carolina, 1942; (Psychology)
- Speirs, John Murray, A.B., A.M., University of Toronto, 1931, 1938; (Zoology)
- Stacy, Gardner Wesley, Jr., B.S., University of Rochester, 1943; (Chemistry)
- Stalvey, James Benjamin, A.B., A.M., Duke University, 1930, 1931; (Political Science)⁴
- Stewart, James Collier, A.B., A.M., University of Mississippi, 1934, 1936; M.S., Louisiana State University, 1940; (Mathematics)⁴
- Su, Tsai-Shan, A.B., National Northeastern Chiao-Tung University, 1934; M.S., 1943; (Economics)
- Van Heyningen, Earle Marvin, A.B., Calvin College, 1943; (Chemistry)⁴
- Wang, Fu-Hsiung, B.S., M.S., National Tsing Hua University, 1936, 1941; (Botany)
- Warren, Forest Glen, B.S., Purdue University, 1937; M.S., 1939; (Agricultural Economics)¹
- Weltin, Edward George, A.B., A.M., 1934, 1935; (History)
- Williams, Maude, A.B., M.S., 1924, 1925; (Physiology)⁴
- Wilson, Charles Marshall, A.B., M.S., 1938, 1940; (Bacteriology)
- Woodward, Fred Erskine, A.B., Dartmouth College, 1943; A.M., 1944; (Chemistry)
- Woyski, Mark M., A.B., University of Buffalo, 1939; A.M., 1943; (Chemistry)
- Ziegler, John Benjamin, Jr., B.S., University of Rochester, 1939; M.S., 1940; (Chemistry)

Professional Degrees

Degree of Doctor of Education

- Chute, Oscar Moody, B.S., Colby College, 1929; Ed.M., Harvard University, 1934⁴

Degree of Master of Education

- Brown, Helen Rumble, A.B., A.M., University of Kansas, 1930, 1934¹
- Dean, Harris William, B.Ed., Illinois State Normal University, 1929; A.M., State University of Iowa, 1936³
- Duncan, Raymond Oscar, LL.B., Washington University, 1930; A.M., 1940³
- Fuzak, John Alexander, B.S., 1939¹
- Hatcher, James Gregson, B.S., University of Missouri, 1927; M.S., 1942⁴
- Reed, Howard Odin, B.S., Bradley Polytechnic Institute, 1931; A.M., Northwestern University, 1938¹
- Sailsbury, Murl Beauford, B.Ed., Illinois State Normal University, 1935; M.S., 1939⁴
- Wilson, Raymond G., B.S., Memphis State College, 1933; Ed.M., Duke University, 1942³
- Workman, Paul Rode, A.B., Eureka College, 1924; A.M., 1942⁴

Degree of Chemical Engineer

- Howard, Everett Watt, B.S., 1932; M.S., University of Michigan, 1933

Degree of Civil Engineer

- Robey, Walter Earl, B.S., University of California, 1928; M.S., 1943

Degree of Electrical Engineer

- Ericson, Rudolph Conrad, B.S., 1925

Degree of Mechanical Engineer

- Durдин, Augustus Cornelius, III, B.S., 1928; C.E., 1941
- Hollenbeck, Fred Drury, B.S., 1934; M.S., Armour Institute of Technology, 1939

Degree of Master of Social Welfare

- Roseberry, Robert Parson, B.S., 1942⁴

Degree of Master of Arts

(In the subjects shown in parenthesis)

- Adams, Claude Edward, A.B., Eureka College, 1931; (Education)³
- Albrecht, Esther Miriam Andreen, A.B., Augustana College, 1918; A.M., 1943; (English)³
- Aldrich, Rowen Worth, A.B., Knox College, 1936; (Education)
- Allmon, Charlesetta, A.B., Wilberforce University, 1939; (Education)
- Armsey, James William, B.S., 1941; Political Science⁴
- Artz, Lloyd Charles, A.B., 1936; (English)¹
- Austrin, Harvey Robert, B.S., College of the City of New York, 1945; (Psychology)⁴
- Ayers, Esther Mary, B.Ed., Southern Illinois Normal University, 1942; (History)⁴
- Bandy, Dorothy Marguerite, B.Ed., Illinois State Normal University, 1935; (Classics)³
- Bangert, Charles Werner, A.B., Illinois College, 1928; (Education)⁴
- Banks, Margaret Jean, B.S., Western Illinois State Teachers College, 1945; (English)⁴
- Baughman, Miriam Grace, A.B., Carthage College, 1945; (Social Science)
- Beck, Ann, M.S., University of Berlin, 1922; (History)
- Bennett, Alvin LeRoy, B.Ed., Western Illinois State Teachers College, 1939; (Education)⁴
- Bertsche, Galene Mattie, B.S., Illinois State Normal University, 1945; (English)⁴
- Bezanis, Chrysanthe, A.B., 1944; (History)⁴
- Blair, McKendree McElfresh, A.B., 1922; S.T.B., Boston University, 1927; (Philosophy)¹
- Blimling, Evelyn Louise, A.B., MacMurray College, 1939; (Classics)⁴
- Blue, Betty Unger, A.B., 1944; (Spanish)
- Bohles, Vernon Louis, B.Ed., Illinois State Normal University, 1938; (Education)¹
- Brickner, Cecil Wright, A.B., Bradley Polytechnic Institute, 1941; (Education)³
- Bushee, Ralph Waldo, Jr., A.B., Coe College, 1942; (English)⁴
- Byrd, Charles Martain, A.B., Lincoln University, 1914; (Education)³
- Cabe, John Carl, Jr., A.B., 1944; (Economics)
- Chadwick, Margaret Frampton, B.S., 1942; (English)⁴
- Chester, Carol McClelland, A.B., Duke University, 1942; (English)³
- Coard, Robert Lawrence, A.B., Quincy College, 1943; (English)⁴
- Cone, Leon Winston, Jr., B.S., Massachusetts State College, 1938; (History)³
- Cooper, Matthew Nathaniel, B.Ed., Western Illinois State Teachers College, 1940; (Education)³
- Cox, Blanche, B.Ed., Southern Illinois Normal University, 1941; (Education)³
- Davis, Millege Miller, B.Ed., Southern Illinois Normal University, 1941; (Education)¹
- Deanin, Grace Greif, A.B., Hunter College, 1945; (Physiology)²
- Degnan, Ellen Angela, B.Ed., Illinois State Normal University, 1942; (Teaching of English)³
- Demsey, Helen Rankin, A.B., 1927; (Home Economics)
- Dingman, John Donald, B.S., 1941; (Education)³
- Dodds, Alvin Gordon, B.Ed., Southern Illinois Normal University, 1938; (Education)³
- Dorsett, Maude Elizabeth, A.B., DePauw University, 1935; (Education)³
- Dunlop, Kathleen Edith, A.B., 1944; (History)
- Eckerman, Catherine Rose, A.B., St. Mary of the Woods College, 1942; (Mathematics)⁴
- Eilers, Meta Dorothea, A.B., 1930; (Education)⁴
- Evans, Robert Allen, B.Ed., Eastern Illinois State Teachers College, 1935; (Education)
- Ewing, Lillian Avis, B.Ed., Southern Illinois Normal University, 1942; (Education)⁴
- Fanta, Barbara Marie, B.S., 1944; (Education)
- Fearn, Harold George, B.Ed., Eastern Illinois State Teachers College, 1939; (Education)
- Fisher, Nathalie Olga, A.B., Stowe Teachers College, 1944; (Education)⁴
- Fort, Lulu Louise, B.Ed., Illinois State Normal University, 1941; (Education)³
- Foster, Harley Whitney, B.Ed., Illinois State Normal University, 1940; (Education)⁴
- Fox, Mary Florence, A.B., Florida State College for Women, 1945; (Spanish)
- Frazier, Todd Mearl, Ph.B., Kenyon College, 1919; (Education)¹
- Gionnini, Annette, B.Ed., Western Illinois State Teachers College, 1938; (English)
- Glock, Loran Philip, B.S., Bradley Polytechnic Institute, 1939; (Education)³
- Godard, Alice Louise, A.B., MacMurray College, 1945; (English)
- Gougar, Elizabeth Jane, B.Ed., Illinois State Normal University, 1942; (Education)³
- Govedare, Philip Wright, A.B., North Central College, 1945; (English)
- Gregory, Lavere Wally, A.B., Carthage College, 1939; (Education)³
- Grigg, Charles Dudley, B.Ed., Southern Illinois Normal University, 1943; (Education)³
- Hairston, Bessie Lee, A.B., Howard University, 1934; (Education)³
- Hall, Stanley Herbert, A.B., Maryville College, 1937; (Education)³
- Heinlein, Gladys Ida, A.B., Hunter College, 1945; (Physics)¹
- Hinman, Betty, B.S., Oklahoma Agricultural and Mechanical College, 1945; (Mathematics)
- Hinman, Mary Allen, B.Ed., Illinois State Normal University, 1933; (Education)³
- Hofflund, Raymond Gustafson, B.Ed., Western Illinois State Teachers College, 1939; (Education)³
- Holman, Carroll Brown, B.S., 1939; (Education)³
- Hood, Bette Staats, B.S., 1940; (Speech)¹
- Hwang, Chi-Ling, A.B., National Central University, 1931; (Entomology)⁴
- Isaac, Elbert Don, A.B., McKendree College, 1934; (Education)⁴
- Israel, Thomas Wendell, A.B., Eureka College, 1939; (Education)³
- Jones, Alice May, A.B., 1945; (Psychology)⁴
- Kelley, Hilda, A.B., 1945; (History)
- Kias, Willis Leon, B.S., 1937; (Education)⁴
- Krappe, Grace May, B.S., Southern Illinois Normal University, 1944; (French)
- Lawrence, Madonna Ruth, A.B., 1943; (French)
- Lefler, Roscoe Warner, A.B., 1940; (Education)⁴
- Little, Helen Grant Norman, A.B., 1921; (Education)³
- Livingston, Lloyd Edward, A.B., Augustana College, 1940; (Accountancy)
- Long, Muriel Dolores, A.B., Rosary College, 1945; (Spanish)
- Lucas, Laura Lucile, B.Ed., Western Illinois State Teachers College, 1939; (Education)³
- Lyster, Mary Frances, A.B., MacMurray College, 1945; (English)
- Mackenthun, Kenneth Marsh, A.B., College of Emporia, 1941; (Zoology)
- Magierski, Louis, B.S., 1931; (History)⁴
- March, Ralph Burton, A.B., 1941; (Entomology)⁴

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Markus, Florence Tegtmeier, B.Ed., Southern Illinois Normal University, 1943; (Education)³
- Marsh, Richard Russell, A.B., 1941; (History)¹
- Mateyka, Melvin John, A.B., 1945; (History)³
- Matson, Frances, A.B., Bradley Polytechnic Institute, 1939; (Education)³
- Mazzia, Gloria Mitchell, A.B., 1945; (Political Science)¹
- McBride, Eleanor LaVerne, B.Ed., Illinois State Normal University, 1940; (Education)⁴
- McConnell, Freeman Erton, B.S., 1939; (English)³
- McGinnis, Mary Elizabeth, B.Ed., Western Illinois State Teachers College, 1935; (Education)³
- McMillan, Howard Donald, B.Mus., Illinois Wesleyan University, 1941; (Education)
- Mead, Clyde Frank, Jr., B.Ed., Western Illinois State Teachers College, 1940; (Education)
- Metz, Helen Hart, A.B., Bradley Polytechnic Institute, 1941; (Education)
- Michaels, Leola Rose, B.S., St. Louis University, 1937; (Social Science)
- Miller, Melvin Linder, B.S., Eastern Illinois State Teachers College, 1944; (Education)³
- Mohr, Mary Elizabeth, A.B., Rice Institute, 1945; (English)⁴
- Morrel, Ruth Taylor, A.B., Texas State College for Women, 1943; (Social Science)
- Mosher, John Glenn, Jr., B.S., 1938; (Geography)¹
- Mullins, Rita Marie, A.B., MacMurray College, 1940; (Zoology)⁴
- Nelson, Leonard Dunbar, A.B., 1940; (Education)
- Netzer, Donald Leo, Ph.B., University of Wisconsin, 1942; (Geography)⁴
- Newman, Charles Cox, B.Ed., Eastern Illinois State Teachers College, 1943; (Education)²
- Olmstead, Phyllis Marian, A.B., Miami University, 1944; (Botany)
- Pace, John Gordon, B.Ed., Northern Illinois State Teachers College, 1933; (Education)¹
- Palmer, Frederick Alexander, A.B., State College of Washington, 1941; (History)¹
- Parmelee, Walter Giles, A.B., Illinois Wesleyan University, 1924; (Education)³
- Peterson, Burdette Orrin, B.Ed., Northern Illinois State Teachers College, 1936; (Education)³
- Pharo, Jeannette, A.B., University of Wichita, 1945; (English)
- Phelps, William Earl, B.Ed., Illinois State Normal University, 1930; (Education)³
- Philippo, Grace Mae, B.Ed., Illinois State Normal University, 1942; (English)
- Poole, Bernard Lonnie, Ph.B., Yale University, 1931; (Spanish)⁴
- Quick, Celeste Marie, A.B., MacMurray College, 1945; (Economics)
- Rapp, Mary Hendershot, A.B., 1942; (Mathematics)¹
- Ray, Helen Peers, A.B., Rockford College, 1935; (Education)³
- Renner, Harold John, B.Ed., Illinois State Normal University, 1939; (Education)³
- Richey, Mildred June, B.Ed., Eastern Illinois State Teachers College, 1937; (Education)¹
- Rose, Betty Ann, A.B., 1945; (Classics)
- Rowan, Robert Earl, A.B., Baylor University, 1923; (Education)³
- Ruda, Frances Wilhelmina, B.Ed., Illinois State Normal University, 1936; (Education)³
- Sager, Nellie Jo, B.S., Southern Illinois Normal University, 1944; (English)³
- Santorio, Salvatore, B.S., 1936; (Spanish)
- Schmiedeskamp, Ruth Jean, A.B., Carthage College, 1940; (Mathematics)³
- Schofield, Ruth Ellis, B.S., Northeast Missouri State Teachers College, 1935; (Education)³
- Schweitzer, George Keene, A.B., Central College, 1945; (Chemistry)
- Searls, Virginia Williams, A.B., 1943; (History)
- Shoemaker, Ollie Stewart, A.B., Western Kentucky State Teachers College, 1943; (History)³
- Short, Ardath Ernestine, B.S., 1937; (Education)³
- Shull, Dede Ann, A.B., James Millikin University, 1934; (English)⁴
- Sister Clement Marie Bach, A.B., College of St. Francis, 1942; (Economics)³
- Sister Ida Marie Adams, O.P., A.B., DePaul University, 1942; (Education)³
- Sparks, Earl Christie, B.Ed., Eastern Illinois State Teachers College, 1945; (Education)
- Spear, William Gore, B.Ed., Southern Illinois Normal University, 1939; (Education)³
- Squires, Bradley Edgar, Jr., B.Ed., Eastern Illinois State Teachers College, 1941; (History)
- Stahlheber, Patricia Grace, B.S., Southern Illinois Normal University, 1945; (French)
- Starr, Donald Dee, A.B., Olivet Nazarene College, 1944; (Chemistry)¹
- Steuer, Ulrick Bernard, A.B., Illinois Wesleyan University, 1944; (Sociology)
- Stevenson, Mary Margaret, A.B., 1943; (Education)³
- Stewart, Elizabeth Hurst, A.B., Randolph-Macon Woman's College, 1945; (English)
- Stewart, Wilson Nichols, A.B., University of Wisconsin, 1939; (Botany)⁴
- Strode, Orval George, B.S., 1935; (Education)
- Stuttle, Robert Warren, A.B., North Central College, 1934; (Mathematics)¹
- Suter, Mary Frances, A.B., Mary Baldwin College, 1944; (Mathematics)
- Taylor, Alvan A., A.B., Illinois College, 1929; (Education)¹
- Taylor, Fanny Adolphia, A.B., 1944; (Education)³
- Taylor, Loren Esten, B.Ed., Southern Illinois Normal University, 1937; (Education)³
- Thomas, Glyn Nicholas, A.B., 1942; (English)
- Thompson, Bess Elaine, A.B., State College of Washington, 1945; (English)
- Tibbets, Margaret Dorothy, B.Ed., Illinois State Normal University, 1928; (Education)
- Tompkins, Floyd Carlton, B.Ed., Northern Illinois State Teachers College, 1934; (Education)³
- Trennt, Evelyn Ladene, A.B., University of Omaha, 1942; (Mathematics)³
- Trimpe, Clara White, A.B., MacMurray College, 1932; (Education)
- Tschannen, Paul Albert, A.B., 1938; (Education)⁴
- Ver Meer, Henrietta Fannie, A.B., State University of Iowa, 1944; (Psychology)⁴
- Vogt, Virginia Doris, B.S., 1944; (Education)
- Volk, Eldon L., A.B., Illinois Wesleyan University, 1927; (Education)
- Vose, Charles Theodore, A.B., Illinois College, 1935; (Education)³
- Walworth, Lois Nelle, B.S., Monmouth College, 1938; (Education)³
- Weatherbee, Carl, A.B., Hanover College, 1940; (Chemistry)⁴
- Well, Clarence Emerson, B.Ed., Eastern Illinois State Teachers College, 1934; (Education)¹
- Westerman, Ralph Boneham, B.Ed., Illinois State Normal University, 1939; (Education)³
- Wilson, Bonard Scott, B.S., 1940; (Education)⁴
- Wilson, Walter Ilunter, B.Ed., Northern Illinois State Teachers College, 1940; (Education)¹
- Yates, Marion Richard, A.B., Illinois College, 1943; (Education)³
- Zupsich, Mike Allison, Jr., A.B., Illinois College, 1939; (Mathematics)⁴

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

Degree of Master of Science

(In the subjects shown in parenthesis)

- Allen, Kenneth Wilbur, B.Ed., Illinois State Normal University, 1937; (Education)
- Altay, Sakip Mehmet, B.S., Robert College, 1943; M.S., 1945; (Architecture)
- Arntzen, Mary Henrietta, B.Ed., Northern Illinois State Teachers College, 1940; B.S. (L.S.), 1943 (Library Science)³
- Atherton, James Clinton, B.S., Oklahoma Agricultural and Mechanical College, 1938; (Agricultural Economics)⁴
- Atkins, Delbert Ferrel, B.S., Eastern Illinois State Teachers College, 1945; (Mathematics)²
- Attis, Russell Ralph, B.S., 1945; (Education)
- Austin, Walter James, B.S., Rice Institute, 1941; (Civil Engineering)⁴
- Babicz, Irene Marie, B.S., 1945; (Biological Science)
- Banister, Nadine Christina, A.B., University of Kansas, 1942; B.S. (L.S.), 1943; (Bacteriology)
- Barbre, Norris Hugh, B.S., Western Kentucky State Teachers College, 1943; (Physics)
- Barron, Edgar Gordon, B.S., North Dakota Agricultural College, 1928; (Civil Engineering)
- Bauer, Charles Bruce, B.S., 1941; (Geology)⁴
- Bearer, Louis Conrad, B.S., M.L., University of Pittsburgh, 1937, 1945; (Ceramic Engineering)
- Beede, Howard Carl, B.S., University of Washington, 1937; (Metallurgical Engineering)⁴
- Belinsky, Carol Rolfe, B.S., Ball State Teachers College, 1935; (Chemistry)
- Bereolos, George, B.S., Indiana University, 1940; (Education)²
- Berg, Eva Marie Louise, B.Ed., Illinois State Normal University, 1935; (Education)⁴
- Berger, Joseph William, B.S., 1941; (Education)²
- Berns, Bertha Clara, B.S., 1941; (Education)⁴
- Bess, Leon, B.S., 1942; (Physics)⁴
- Brasic, Peter Robert, B.S., 1942; (Education)
- Brewer, Irene Evelyn, B.S., Illinois Wesleyan University, 1928; (Mathematics)⁴
- Brockley, Frances, B.Ed., Western Illinois State Teachers College, 1941; (Education)²
- Brown, George Renold, B.S., 1929; (Animal Husbandry)
- Burlison, Ruth Helen, B.S., 1939; (Music Education)²
- Burnette, Verle Arthur, B.S., 1941; (Education)
- Caldwell, Jack Spaulding, Jr., B.S., 1943; (Metallurgical Engineering)
- Calfee, Robert Francis, B.S., Ft. Hays Kansas State College, 1943; (Physics)
- Callis, Clayton Fowler, A.B., Central College, 1944; (Chemistry)⁴
- Campbell, Marjorie Maxine, B.S., 1940; (Home Economics)²
- Casteel, Virgil Clayton, B.Ed., Illinois State Normal University, 1934; (Education)¹
- Chang, Peh-I, B.S., National Central University, 1941; (Entomology)⁴
- Chew, Robert Marshall, B.S., Washington and Jefferson College, 1944; (Zoology)¹
- Christophersen, Roy Andrew, B.S., 1940; (Music Education)
- Clark, John Quincy, B.S., Willberforce University, 1926; (Education)²
- Cohn, Marius, B.Phys., University of Minnesota, 1941; (Physics)
- Confer, Warren Kiefer, B.S., 1938; (Economics)⁴
- Connolly, Walter Curtis, A.B., Miami University, 1944; (Physics)¹
- Craig, Jessie Margaret, B.S., New Jersey College for Women, 1944; (Chemistry)⁴
- Cravens, Lawrence Alexander, B.S., Bradley Polytechnic Institute, 1927; (Education)⁴
- Crocker, Charles Kenneth, B.S., 1943; (Bacteriology)⁴
- Croft, Herbert Ora, B.S., Southeast Missouri State Teachers College, 1937; (Education)²
- Cross, Dorothy Mary, A.B., Hope College, 1945; (Physiology)²
- Cucci, Angelo Michael, B.S., 1942; (Music Education)²
- Cuellar, Alipio, Ingeniero Agronomo, National School of Agriculture and Veterinary Science (Lima, Peru), 1943; (Dairy Husbandry)⁴
- Cummins, James Francis, III, B.S., 1942; (Physiology)²
- Dammann, Joseph A., A.B., Dartmouth College, 1943; (Chemistry)⁴
- Deane, Elizabeth Brown, A.B., University of Colorado, 1942; (Bacteriology)
- Dezani, John George, B.S., 1942; (Zoology)
- Dehr, Arlin Marion, B.S., 1945; (Bacteriology)¹
- Derrien, Aristides Rodriguez, C.E., University of Santo Domingo, 1943; (Civil Engineering)⁴
- Dolio, Ardwin Joseph, B.Ed., Northern Illinois State Teachers College, 1939; (Education)^{1,2}
- Dowler, Anita Louise, B.Ed., Eastern Illinois State Teachers College, 1941; (Home Economics)²
- Driscoll, Mae Anna, B.S., University of Dayton, 1945; (Physics)⁴
- DuPré, Frances Elizabeth, B.S., Mary Washington College, 1939; (Music Education)¹
- Eaton, Otis William, B.Ed., Southern Illinois Normal University, 1937; (Education)
- Elwood, Everett Morgan, B.S., Michigan State College, 1934; (Agricultural Economics)
- Fanti, Mary Domonica, B.S., 1935; (Geography)⁴
- Fargusson, Gerald Lewis, B.Ed., Western Illinois State Teachers College, 1940; (Education)
- Faulkner, Elden Kenneth, B.S., 1937; (Animal Husbandry)
- Finley, Norman Waldo, B.Ed., Southern Illinois Normal University, 1935; (Education)
- Fisher, Gwendolyn, A.B., Manchester College, 1938; B.S. (L.S.), George Peabody College, 1939; (Library Science)⁴
- Ford, Irene Carroll, A.B., University of Chicago, 1936; B.S. (Lib.), 1941; (Library Science)¹
- Fox, Mary Jane, B.S., Barat College, 1944; (Chemistry)
- Frantz, Royene Dry, B.S., 1944; (Home Economics)⁴
- Fritz, James Sherwood, B.S., James Millikin University, 1946; (Chemistry)⁴
- Geeseman, Gordon Earle, B.S., 1943; (Agronomy)
- Gentzke, Emma Louise, A.B., B.S. (L.S.), Texas State College for Women, 1941, 1941; (Library Science)
- Gibbons, James Richard, B.S., 1944; (Agricultural Economics)
- Gibson, Edwin Arthur, B.S., 1945; (Architectural Engineering)¹
- Gilliam, Hattie Ann, B.S., Howard University, 1932; (Education)²
- Goben, Harold Charles, B.Ed., Western Illinois State Teachers College, 1941; (Education)²
- Hails, George Forrest, B.S., 1945; (Education)²
- Hall, Ivan Creston, B.S., Monmouth College, 1936; (Education)²
- Hang, Sze Lu, B.S., National Wu-Han University, 1940; (Bacteriology)
- Harper, Bertha, B.S., Illinois State Normal University, 1945; (Education)

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Harrison, Lincoln Jay, B.S., Southern University, 1938; A.M., Atlanta University, 1944; (Accountancy)⁴
- Harrison, Marvin, B.Ed., Eastern Illinois State Teachers College, 1928; (Education)⁴
- Harshbarger, Leslie Perkins, B.Ed., Illinois State Normal University, 1941; (Education)
- Hart, Thomas Alexander, B.S., New York University, 1942; (Physical Education)
- Hartley, Joseph Wayne, B.S., Northwest Missouri State Teachers College, 1937; (Education)
- Herrmann, Mary Kathern, B.Ed., Illinois State Normal University, 1943; (Education)¹
- Hicks, Ruth Claire, B.S., 1943; (Education)³
- Hildebrand, Bernard, A.B., Brooklyn College, 1944; (Physics)
- Hirsch, Augusta Knoepfelmacher, B.S., 1945; (Chemistry)⁴
- Holloway, Lemuel Byrd, B.S., 1942; (Education)³
- Holmgren, Nelda Bastiani, B.S., Northwestern University, 1942; (Bacteriology)
- Holtzclaw, Henry Fuller, Jr., A.B., University of Kansas, 1942; (Chemistry)
- Horr, Stanley Franklin, A.B., Iowa Wesleyan College, 1939; (Education)³
- Hotch, Theodosia, A.B., Georgia State College, 1932; B.S.(L.S.), George Peabody College for Teachers, 1934; (Library Science)³
- Hower, Robert Shoup, B.S., Ohio State University, 1941; (Ceramic Engineering)
- Hsu, Tsun-Tsien, A.B., Hua Chung College, 1939; (Business Organization and Operation)⁴
- Hu, Sien-Tsin, B.S., National Central University, 1939; (Business Organization and Operation)
- Hudson, Charles Allen, B.S., Bradley Polytechnic Institute, 1941; (Education)
- Hughes, Hansel Leigh, B.S., Murray State Teachers College, 1937; (Chemistry)⁴
- Hunsaker, Franklin Samuel, B.S., 1931; (Education)³
- Hurt, Ross Harrison, B.S., Washington State College, 1938; (Veterinary Pathology and Hygiene)¹
- Jackson, Agnes Elizabeth, B.S., Hampton Institute, 1939; (Education)⁴
- James, Daniel J., B.Ed., Eastern Illinois State Teachers College, 1942; (Business Organization and Operation)
- Johnson, Robert Curtis, B.S., 1944; (Chemical Engineering)⁴
- Johnson, Robert Kellogg, A.B., Montana State University, 1937; A.B.(L.S.), University of Washington, 1938; (Library Science)
- Kaiser, Gertrude Emma, B.S., Iowa State College, 1936; (Home Economics)⁴
- Kallal, Robert John, B.S., 1943; (Chemical Engineering)⁴
- Kantz, Asher Dale, A.B., Southwestern College, 1943; (Physics)¹
- Kaufman, Seymour, B.S., 1945; (Chemistry)³
- Kesler, Clyde Ervin, B.S., 1943; (Civil Engineering)⁴
- Kirk, Colleen Jean, B.S., 1940; (Music Education)
- Klonoski, Ruth Matilda, B.S., University of Minnesota, 1944; (Home Economics)³
- Kneer, Leo Ben, B.S., 1937; (Education)
- Koenig, Karl Joseph, B.S., 1941; (Geology)⁴
- Konstant, Anthony Nicholas, B.S., 1945; (Civil Engineering)
- Kriviskey, George, B.S., 1931; (Education)³
- Lane, Willa Frances, B.S., Eastern Illinois State Teachers College, 1945; (Commercial Teaching)
- Lathrop, Arthur LaVerne, B.S., State College of Washington, 1943; (Physics)
- Lee, Ching-Kwei, B.S., Fuh Tan University, 1932; (Agronomy)
- Lee, Ching-Sen, B.S., National Tsing Hua University, 1941; (Civil Engineering)
- Lee, Marjorie Evelyn, B.Mus.Ed., James Millikin University, 1940; (Music Education)¹
- Lendrum, James Thornburn, B.S., University of Michigan, 1930; (Architecture)³
- Leng, Earl Reece, B.S., 1941; (Agronomy)
- Levanti, Arsenio, B.C.E., Manhattan College, 1942; (Civil Engineering)⁴
- Light, Rupert Edwin, Jr., B.S., Virginia Polytechnic Institute, 1941; (Chemistry)⁴
- Lin, Ping-Chung, B.S., National Chiao-Tung University, 1935; (Business Organization and Operation)⁴
- Litherland, Dorothy Albietz, B.S., 1945; (Commercial Teaching)³
- Liu, Chang-Keng, B.S., Chiao-Tung University, 1943; (Mechanical Engineering)
- Liu, Hou-Lee, B.S., National Central University, 1939; (Agronomy)⁴
- Liu, Yu-Su, B.S., Tsing Hua University, 1934; (Entomology)⁴
- Loh, Kuo-Liang, B.S., Hangchow Christian College, 1940; (Civil Engineering)⁴
- Losuvalma, Jaroch, B.S., 1943; (Theoretical and Applied Mechanics)
- Lounsbury, John Frederick, B.S., 1942; (Geography)⁴
- Lynes, Winston Earl, B.S., 1946; (Music Education)⁴
- Ma, Ruh-Hwa, B.S., University of Nanking, 1934; (Agronomy)
- Mades, Forrest Henry, B.S., 1940; (Physical Education)
- Magers, George Albert, B.S., Eastern Illinois State Teachers College, 1945; (Education)
- Mahak, Arthur Edward, B.S., Robert College, 1944; (Mechanical Engineering)¹
- Mann, Dorothy Angelene, B.S., 1943; (Education)⁴
- Margaretten, Phyllis Meryl, B.S., 1945; (Chemistry)
- Martin, Ross J., B.S., Michigan State College, 1940; (Mechanical Engineering)⁴
- Maurer, Jesse John, B.Ed., Illinois State Normal University, 1940; (Education)
- McCartan, Warren Maulding, B.S., Southern Illinois Normal University, 1944; (Education)
- McConnell, Max Winfred, B.S., Bradley Polytechnic Institute, 1940; (Education)³
- McCrackin, Thomas Hunter, Jr., B.S., 1940; (Civil Engineering)
- McDermott, Stella Anne, B.S., 1939; (Education)³
- McNeil, Horatio Raymond, B.S., Lincoln University, 1938; (Biological Science)⁴
- Meisel, Seymour Lionel, B.S., Union College, 1944; (Chemistry)²
- Meyer, Marvin Phillip, B.S., 1941; (Geology)
- Miller, Wendell Earl, B.S., 1936; (Electrical Engineering)⁴
- Mitchell, William David, B.S., C.E., Purdue University, 1927, 1938; (Civil Engineering)
- Moore, Clarence Albert, B.S., Western Texas State Teachers College, 1945; (Agricultural Economics)¹
- Moore, Martha, A.B., B.S.(L.S.), Texas State College for Women, 1942, 1943; (Library Science)
- Mosley, William Garrison, Jr., B.S., Lewis Institute, 1935; (Education)
- Mostafa, Yehia Ahd, B.Arch., Fouad First University, 1944; (Architecture)⁴
- Moyer, Donald Carlyle, B.S., 1942; (Education)³
- Mullett, Jane Elizabeth, B.S., 1939; (Education)³

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

- Munger, Marjorie May, A.B.(L.S.), A.B., University of Oklahoma, 1944, 1945; (Library Science)
- Nelson, Claude Lafayette, B.S., 1933; (Education)³
- Nelson, Joseph Serrin, B.S., Superior State Teachers College, 1939; (Chemistry)⁴
- Nelson, Theodora Sophia, B.S., Nebraska State Teachers College, 1942; (Mathematics)²
- Netherton, Clifford Leroy, B.Ed., Illinois State Normal University, 1936; (Education)²
- Nichols, Harold Junior, B.S., University of Michigan, 1940; (Physical Education)
- O'Brien, Maynard, B.S., Illinois Wesleyan University, 1931; (Education)
- O'Connor, John Alexander, B.S., Milwaukee State Teachers College, 1940; (Music Education)
- Özyurt, Muhittin, B.S., 1945; (Civil Engineering)⁴
- Pan, Yu-Pu, A.B., National Northeastern University, 1938; (Economics)
- Parke, Kathryn Emma, A.B., Smith College, 1936; B.S.(L.S.), New York State College for Teachers, 1942; (Library Science)²
- Pesses, Marvin, B.S., Purdue University, 1944; (Ceramic Engineering)²
- Ping, Lela Mae, B.Ed., Illinois Normal University, 1940; (Home Economics)¹
- Power, Ruth Carlton, B.S., Morehead State Teachers College, 1932; B.S.(L.S.), 1941; (Library Science)
- Pridham, Thomas Grenville, B.S., 1943; (Bacteriology)⁴
- Qayam, Abdul, A.B., B.S., Punjab University, 1939, 1942; (Civil Engineering)⁴
- Raymond, Joseph Louis, B.S., Case School of Applied Science, 1944; (Physics)
- Remlinger, Marjorie Ruth, B.S., College of St. Francis, 1944; (Chemistry)
- Reynolds, Helen Margaret, B.F.A., A.B., University of Nebraska, 1939, 1940; B.S.(L.S.), 1941; (Library Science)
- Reynolds, Joseph Elmer, B.S., 1931; (Education)²
- Rhea, Rex Roscoe, B.S., 1941; (Agricultural Economics)²
- Richart, Frank Edwin, B.S., 1940; (Civil Engineering)⁴
- Roloff, Marjorie Giese, B.S., 1940; (Education)
- Roose, Robert Welburne, B.S., 1940; (Mechanical Engineering)
- Ruby, Helen Maxine, B.S., 1937; (Home Economics)¹
- Rueff, Lawrence Edward, A.B., Olivet College, 1938; A.B., 1939; (Zoology)¹
- Ryan, Weldon Ernest, B.S., 1942; (Education)³
- Sachs, Donald Charles, B.S., University of Chicago, 1943; (Physics)⁴
- Savage, Everett Deneen, B.Ed., Southern Illinois Normal University, 1931; (Education)⁴
- Schmidt, Raymond Alois, B.S., M.S., Marquette University, 1929, 1940; (Ceramic Engineering)
- Schriner, Donald Dain, B.Ed., Eastern Illinois State Teachers College, 1931; (Education)
- Scott, Robert Marshall, B.S., 1936; (Bacteriology)
- Scott, Roscoe Wayne, B.S., Monmouth College, 1932; (Physical Education)²
- Secord, Fern Maxine, A.B., Greenville College, 1927; B.S., 1935; (Music Education)⁴
- Shanks, Dwight Allen, B.S., 1939; (Zoology)⁴
- Shattuck, Mildred Lemira, B.S., 1945; (Bacteriology)²
- Sherrick, James Noah, B.Ed., Eastern Illinois State Teachers College, 1938; (Education)
- Shocmaker, Carlyle Edward, B.Ch.E., Ohio State University, 1943; (Chemistry)⁴
- Shotwell, Odette Louise, B.S., Montana State College, 1944; (Chemistry)¹
- Silverstein, Esther, B.S., Indiana State Teachers College, 1937; (Education)²
- Simon, Jack Aaron, A.B., 1941; (Geology)⁴
- Sims, Clarence Albert, B.S., 1942; (Economics)⁴
- Skidmore, Lottie Myrtal, A.B., Ottawa University, 1927; B.S.(L.S.), 1940; (Library Science)²
- Smith, Frederick Richard, Jr., B.S., 1943; (Music Education)
- Spangler, Wayne David, B.S., 1938; (Education)⁴
- Stienecker, Dorothy Dunlap, B.S., 1936; (Education)¹
- Stombaugh, Tom Atkins, B.Ed., Illinois State Normal University, 1941; (Education)
- Strawbridge, Helen Mary, A.B., Hanover College, 1945; (Chemistry)⁴
- Sturm, Lucile Alma, B.Ed., Illinois State Normal University, 1942; (Education)¹
- Tan, Tzi-Lieh, B.S., National University of Chungking, 1940; (Chemistry)
- Taylor, Frederick William, B.A.Sc., University of Toronto, 1936; (Mechanical Engineering)
- Teng, Chi-Yu, B.S., National Central University, 1942; (Civil Engineering)⁴
- Teng, Pi-Yi, B.S., National Central University, 1943; (Civil Engineering)¹
- Tom, David Yung Choy, B.S., University of Dayton, 1944; B.S., 1945; (Civil Engineering)
- Tutt, Beulah Ruth, B.S., Bradley Polytechnic Institute, 1937; (Education)
- Van Doucke, Raymond Francis Joseph, B.S., 1945; (Animal Husbandry)⁴
- Walton, Eldred Lothaire, B.Ed., Eastern Illinois State Teachers College, 1941; (Education)¹
- Ward, Edward John, B.S., Union College, 1941; (Civil Engineering)⁴
- Waters, James Marshall, B.Ed., Illinois State Normal University, 1939; (Education)⁴
- Waugh, Paul Revere, B.S., Bradley Polytechnic Institute, 1931; (Education)⁴
- Weinberg, Herbert, B.S., 1944; (Civil Engineering)
- Wells, Eva Lorene, B.S., 1941; (Education)⁴
- Welsh, Doris Varner, A.B., Florida State College for Women, 1930; B.S.(L.S.), Peabody Library School, 1933; (Library Science)
- Werner, Charles Dunlap, B.S., 1927; (Physical Education)²
- Wheatley, Virgil Ragsdale, B.Ed., Southern Illinois Normal University, 1938; (Education)²
- White, Richard Shurbie, B.S., Lincoln University, 1944; (Biological Science)
- Wiley, Grace Kathryn, B.S., 1940; (Education)
- Williams, Catherine Louise, B.S., St. Xavier College, 1943; (Chemistry)
- Williams, Jesse Noah, Jr., B.S., University of North Carolina, 1945; (Chemistry)⁴
- Wilson, Margery Winnifred, B.S., 1941; (Education)⁴
- Wilson, Martha Finley, B.Ed., Eastern Illinois State Teachers College, 1941; (Home Economics)²
- Wisely, Harriet Reese, A.B., University of Kansas City, 1945; (Ceramics)²
- Wiseman, Highland, B.S., 1942; (Education)²
- Wolfman, Vivian, B.S., 1944; (Chemistry)
- Wright, Kenneth Newell, B.S., 1945; (Animal Nutrition)⁴
- Yen, Chia-Shiang, B.S., National Central University, 1939; (Civil Engineering)
- Yu, Wen-Te, B.S., National Tsing Hua University, 1937; (Ceramics)¹
- Zeidman, Blossom Shirley, B.S., 1944; (Chemistry)
- Zilly, Robert George, B.S., 1942; (Education)²

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

Degree of Master of Music

- | | |
|---|---|
| Hermanson, Evangeline Louise, B.Mus.,
Wheaton College, 1945 ⁴ | Roosa, Walter Laidlaw, A.B., Syracuse Uni-
versity, 1917 ⁴ |
| King, William Robert, B.Mus., 1935 ⁴ | Van Slyke, James King, B.S., 1940 ⁴ |
| Lewis, Margaret Lowry, B.Mus., 1945 | Willett, Thelma Elizabeth, A.B., Denison Uni-
versity, 1941 ⁴ |
| McDowell, Austin Johnston, B.Mus., 1942 ³ | Zorn, Harvey Clary, B.Mus., 1938 |
| Morgan, Sylvia Troemper, B.Mus., 1945 ¹ | |
| Potter, Louis Alexander, Jr., B.Mus., Peabody
Conservatory, 1937 | |

HONORS AWARDED AT GRADUATION IN 1946

College of Agriculture

- | | |
|--|---|
| Buzzard, Glenn Wesley, with Honors in <i>Agricul-
ture</i> | Keneipp, Virginia Maxine, with Honors in
<i>Home Economics</i> |
| Churchill, Erlene Mae, with Highest Honors in
<i>Home Economics</i> | Kessinger, Manning Lynn, with High Honors in
<i>Agriculture</i> |
| Clark, Marvin Elston, with High Honors in
<i>Agriculture</i> | Lofftus, Marjorie Florine, with Honors in <i>Home
Economics</i> |
| Coffey, Glenn Irvin, with Honors in <i>Agriculture</i> | Miles, Alice Ann, with Honors in <i>Home Eco-
nomics</i> |
| Corman, Jacqueline Beth, with Honors in <i>Home
Economics</i> | Perring, John Earl, with High Honors in <i>Voca-
tional Agriculture</i> |
| Cusick, George Robert, with Honors in <i>Agricul-
ture</i> | Reeder, Barbara Alice, with Honors in <i>Home
Economics</i> |
| Doyle, John Owen, with Honors in <i>Agriculture</i> | Reeder, Georgia Ellen, with Honors in <i>Home
Economics</i> |
| Drake, David Luther, with High Honors in
<i>Agriculture</i> | Rolf, John Howard, with Honors in <i>Agriculture</i> |
| Eberle, Allene Edna, with Honors in <i>Home
Economics</i> | Rundquist, John Frederick, with High Honors
in <i>Agriculture</i> |
| Ford, Alice Elmina, with Highest Honors in
<i>Home Economics</i> | Siebert, Carlos Reuben, with Honors in <i>Agricul-
ture</i> |
| Forgey, George W., Jr., with High Honors in
<i>Agriculture</i> | Sinclair, Dale Hardway, with Honors in <i>Agricul-
ture</i> |
| Foster, Max Tice, with Highest Honors in
<i>Agriculture</i> | Stewart, Dana Adams, with Highest Honors in
<i>Agriculture</i> |
| Franke, Merval Schroeder, with Honors in <i>Home
Economics</i> | Tate, Mary Ellen, with Honors in <i>Home Eco-
nomics</i> |
| Fulk, Barbara Flesher, with Honors in <i>Home
Economics</i> | Tendick, Lois Lea, with Honors in <i>Home Eco-
nomics</i> |
| Grove, Arlene Mae, with Honors in <i>Home Eco-
nomics</i> | West, Vincent Irving, with Highest Honors in
<i>Agriculture</i> |
| Hallowell, Eleanor, with Honors in <i>Home Eco-
nomics</i> | Westerhold, Arnold Frederick, with Honors in
<i>Agriculture</i> |
| Harlin, Harriet Ann, with Honors in <i>Home
Economics</i> | Westerhold, Walter Charles, with Honors in
<i>Agriculture</i> |
| Hildebrandt, Alice Helen, with Honors in <i>Home
Economics</i> | Whitson, Helen Mae, with Honors in <i>Home
Economics</i> |

College of Commerce and Business Administration

- | | |
|--|--|
| Black, Lois Ellen, with Honors in <i>Management</i> | Scott, Merrill Blood, with Honors in <i>Account-
ancy</i> |
| Downs, Judith Gardner, with Honors in <i>Man-
agement</i> | Smith, Thomas Rutter, with Honors in <i>Man-
agement</i> |
| Fish, Robert Earl, with Honors in <i>Accountancy</i> | Stewart, Margaret Ruth, with Honors in <i>Ac-
countancy</i> |
| Getman, Shirley Ann, with Honors in <i>Man-
agement</i> | Strunck, Theodore Paul, with Honors in <i>Ac-
countancy</i> |
| Hiller, Virginia Lee, with Honors in <i>Man-
agement</i> | Stubblefield, Betty Lucille, with Honors in <i>Ac-
countancy</i> |
| Maushak, Mary Adeline, with Honors in <i>Com-
mercial Teaching</i> | Worden, Doris Wallin, with Honors in <i>Man-
agement</i> |
| Philippi, Pauline, with Honors in <i>Accountancy</i> | |
| Savoie, Leonard Mitchell, Jr., with Honors in
<i>Accountancy</i> | |

College of Education

- | | |
|---|---|
| Carpenter, Mary Louise, with Honors in <i>Educa-
tion</i> | Lindsay, Jeanette Phillips, with Honors in <i>Edu-
cation</i> |
| Haygood, Margaret Collins, with Honors in
<i>English</i> | Maruszczak, Renee, with High Honors in
<i>History</i> |
| King, Joy Zwicky, with Honors in <i>Education</i> | Punke, Flossie M., with Honors in <i>Education</i> |
| | Skohlkoff, Olga, with Honors in <i>German</i> |

For meanings of asterisks and superior numerals, see explanation at the beginning of this list.

College of Engineering

Ahern, Robert Eugene, *with Honors in Mechanical Engineering*
 Bohl, Robert Walter, *with High Honors in Metallurgical Engineering*
 Chapin, Norton Anderson, *with Honors in Mechanical Engineering*
 Drager, Keith Newton, *with Honors in Mechanical Engineering*
 Fisherkeller, John Jeremiah, Jr., *with Honors in Mechanical Engineering*
 Hallberg, Harry Donald, *with Honors in General Engineering*
 Hebenstreit, Richard Henry, *with High Honors in Civil Engineering*
 Hennig, Robert William, *with High Honors in Mechanical Engineering*
 Herda, William Kenneth, *with High Honors in Mechanical Engineering*
 Hoskins, Dalton, *with High Honors in Civil Engineering*
 Howard, Louis Allen, *with High Honors in Electrical Engineering*
 Jones, Lloyd Walton, Jr., *with High Honors in Sanitary Engineering*
 McKinstry, Robert Bruce, *with Honors in Electrical Engineering*

Mosborg, Robert John, *with High Honors in Civil Engineering*
 Nordhielm, Berndt Evald, *with Honors in Mechanical Engineering*
 Ormsbee, Allen Ives, *with High Honors in Aeronautical Engineering*
 Pedersen, Harry, *with High Honors in Mechanical Engineering*
 Pickett, Jesse Malcolm, Jr., *with Honors in Civil Engineering*
 Shapland, Robert Ross, *with High Honors in Civil Engineering*
 Tiedemann, Arthur Theodore, *with Honors in Electrical Engineering*
 Turner, Harold Eugene, *with Honors in Civil Engineering*
 Walraven, Burnham Fowler, *with High Honors in Mechanical Engineering*
 Wensch, Glen William, *with Honors in Metallurgical Engineering*
 Whitaker, Robert William, *with High Honors in Agricultural Engineering*
 Wilkie, John Robert, *with Honors in Civil Engineering*
 Wofford, Thomas Dewitt, Jr., *with High Honors in Civil Engineering*

College of Fine and Applied Arts

Atkins, Clinton Paul, *with Highest Honors in Architectural Engineering*
 Atwood, Betty Jane, *with Honors in Art Education*
 Barrow, Joseph Merriton, *with Honors in Architecture*
 Bischoff, Paul Walter, *with Honors in Industrial Design*
 Cole, William David, *with Honors in Music Education*
 Colin, Edward Cecil, Jr., *with Highest Honors in Architectural Engineering*
 Crumrine, Harold Eugene, *with Highest Honors in Architectural Engineering*
 Dunham, Roger, *with Highest Honors in Architecture*
 Gray, Nancy Jane, *with Honors in Industrial Design*
 Gulick, Frances, *with Highest Honors in Music*
 Gullett, Martha Kent, *with Honors in Commercial Design*
 Hisson, Frances Doayne, *with Honors in Music Education*
 Huffaker, Nina Lou, *with Honors in Music*
 Hunter, Stella Jean Lehmann, *with High Honors in Music*
 Hutter, Ruth Maria, *with High Honors in Music*

Jordan, Jane Gowans, *with High Honors in Music Education*
 Keeran, Betty Ethel, *with Honors in Painting*
 Krebs, Anne Catherine, *with Honors in Architecture*
 Lippincott, Joan Ralston, *with Highest Honors in Industrial Design*
 Logsdon, Georgann, *with Honors in Painting*
 Luft, Donald William, *with Honors in Painting*
 Mayhew, Mary Elizabeth, *with Highest Honors in Music*
 Rogers, Lawrence Winchester, *with Honors in Architecture and in Architectural Engineering*
 Rundle, Dorothy Belting, *with High Honors in Music and in Music Education*
 Sanford, Marion Jean, *with Honors in Music Education*
 Sasaki, Hideo, *with Highest Honors in Landscape Architecture*
 Skelton, William, *with Honors in Music*
 Sprague, Mark Anderson, *with Honors in Painting*
 Sundwick, Margarette Stephens, *with Honors in Music Education*
 Wahlberg, Ruth Esther, *with Highest Honors in Art Education and in Painting*

School of Journalism

Brown, Mary Ellen, *with Honors*
 Friedman, Roslyn June Berger, *with Honors*
 Herron, Jean Baysinger, *with Honors*
 Kimble, Theodore Hazen, *with High Honors*

Kollman, Nancy Joyce, *with High Honors*
 LeRoy, Donald, *with Honors*
 O'Neil, Peggy Grace, *with High Honors*
 Wilkins, George Orville, *with Honors*

College of Law

Haley, Bernice Cooper, *with Honors*
 Nichols, George Addison, *with Honors*

Parker, David Edgar, *with Honors*
 Stone, Hal Marot, Jr., *with Honors*

College of Liberal Arts and Sciences

Bannister, Loren Willard, *with High Honors in Chemistry*
 Baskin, Bernice Barbara, *with Honors in Sociology*
 Beal, Marion Lee, *with Highest Honors in Political Science*
 Bernard, Audrey Louise, *with High Honors in Psychology*

Bloomberg, LaVerne Sylvia, *with Highest Honors in Mathematics*
 Boddy, Marie Louise, *with Highest Honors in Mathematics*
 Bohon, Robert Lynn, *with Honors in Chemical Engineering*
 Brown, Robert Milan, *with Honors in Chemical Engineering*

Carr, Norman Loren, with Honors in Chemical Engineering
 Correll, Flora Arlene, with Highest Honors in History
 Doyle, Joan Mary, with High Honors in Chemistry
 Falkoff, Esther Penelope, with Honors in Philosophy
 Farlow, Ida Mae, with High Honors in Sociology
 Foster, Elizabeth Jane, with Highest Honors in Chemistry
 Franklin, Constance May, with High Honors in Humanities
 Gaziano, Angelina Rosemarie, with High Honors in History
 Girhard, Mary Nancy, with Highest Honors in Geology
 Green, Ruth, with Honors in English
 Hoffman, Wayne Melvin, with Highest Honors in Political Science
 Hubka, Emil Francis, with High Honors in English
 Humphrey, Albert S., with High Honors in Chemical Engineering
 Kantor, Harry, with High Tutorial Honors in Political Science
 Klein, Jean Betty, with Honors in Sociology
 Kliger, Paul Israel, with Honors in Sociology
 Koepke, Carol Winifred, with Highest Honors in Mathematics
 Lambert, Mary Alice, with Highest Honors in English
 Landes, Spencer Harlan, with Honors in Chemical Engineering
 Long, Frank Wesley, Jr., with Highest Honors in Chemistry
 Macchiavello, Luis A., with Honors in Chemical Engineering
 MacDonald, Mary Jane, with High Honors in Political Science
 Marcus, Ida Nancy, with High Honors in Psychology
 Milieczny, Evelyn Katherine, with Honors in English
 Minkus, Seena, with Honors in Sociology
 Mitchell, Mary Ellen, with Honors in Sociology

Morley, Marjory Ruth, with Honors in Bacteriology
 Muehrcke, Marie Hyacinth, with Highest Honors in Mathematics
 Nixon, Charles William, with Honors in Zoology
 Nobler, Lucille, with Honors in Zoology
 Ogawa, Mitsulu, with Honors in Bacteriology
 Olbrich, Janice Mae, with Highest Honors in Economics
 Perkins, Marian, with High Honors in Chemistry
 Pfeiffer, Mary Alice, with High Honors in Psychology
 Phelps, Robert Leland, with Honors in Chemical Engineering
 Quinty, Gladys Helen, with High Honors in Chemistry
 Ragins, Adele Zentner, with High Honors in Psychology
 Ranz, Bernice Lenore, with High Honors in Psychology
 Robinson, Mark Tabor, with Highest Honors in Chemistry
 Satz, Harriet Rosa, with High Honors in Psychology
 Schumaker, John Abraham, with Highest Honors in Mathematics
 Sisson, Janet Marie, with Highest Honors in Spanish
 Spencer, Jean, with Honors in History
 Stevens, Mary Christine, with Highest Honors in Home Economics
 Sudar, Seymour, with High Honors in Chemical Engineering
 Summers, Shirley Dean, with Honors in Psychology
 Versten, Maynette Rosalie, with High Honors in Chemistry
 Wear, Robert Lee, with Highest Honors in Chemistry
 Wilson, Mary Jane, with High Honors in History
 Yelting, George Carl, Jr., with Honors in Chemical Engineering
 Znaniecki, Helena Beatrice Maria Lubich, with Honors in Sociology

Library School

Anthony, Carol Horton, with Honors
 Attridge, Mildred Lucille, with Honors
 Bead, Charles Conrad, with High Honors
 Burham, Nancy Elaine, with High Honors
 Butts, Dorothea Kathleen, with High Honors
 Cavender, Thera Pauline, with Honors
 Dechman, Ardis Mae, with Honors
 Devanny, Ann Elizabeth, with Honors
 Gilley, Ruth Evelyn, with High Honors
 Hildebrandt, Florence Marion, with High Honors
 Lodge, Louise Finley, with Honors
 Long, Dorothy, with High Honors
 McConnell, Alice Appell, with Honors
 McCord, Doris Louise, with High Honors

Moore, Georgia Ellen, with Honors
 Mullendore, Jessie Marian, with Honors
 Protzman, Ruth Marie, with Honors
 Samuelson, Gladys Lucille, with Honors
 Schaak, Gertrude Hilda, with Honors
 Sharp, Evelyn Clarissabell, with Honors
 Smogard, Elaine Carol, with Honors
 Sohl, Marjorie Ann, with High Honors
 Talmadge, Robert Louis, with High Honors
 Waller, Evelyn Louise, with High Honors
 Ward, Willie Pauline, with Honors
 Wascher, Corinne Jackson, with Honors
 Zimmermann, Marguerite Louise, with Honors

School of Physical Education

Garner, Betty Louise, with Honors in Physical Education

Shurte, Marcia Arlene, with High Honors in Physical Education

College of Dentistry

Bloom, Philip, with Honors
 Molay, Arthur Frank, with Honors

Zwemer, Jack, with Honors

College of Medicine

Alpern, Charles, with Honors
 Altschul, Sol, with Honors
 Benson, John Stephen, with Honors
 Budwig, Ira Adolph, Jr., with Honors
 Burdon, John Carter, with Honors
 Busch, Harris, with Honors
 Cap, Thaddeus Walter, with Honors

Dray, Sheldon, with Honors
 Echt, Raymond Jacob, with Honors
 Flaherty, Neil Francis, with Honors
 Goldenberg, Charles, with Honors
 Hart, Richard Howe, with High Honors
 Hepper, Norman Glenn Gordon, with Honors
 King, Harry, with Honors

Koeck, Martin, III, *with Honors*
 Kousnetz, Irving, *with Honors*
 Levatin, Bernard, *with Honors*
 McLaughlin, Dean Edwin, *with Honors*
 McLaughlin, John Richard, *with Honors*
 Schiller, Filmore, *with Honors*
 Schlesinger, Robert Bertrand, *with Honors*

Solomon, Harry James, *with High Honors*
 Tenney, Alonzo Cass, Jr., *with Honors*
 Wallach, Howard Frederic, *with Honors*
 Whitlark, Frederick Louis, *with Honors*
 Worcester, Richard Laugel, Jr., *with Honors*
 Wunsch, Charles Alphonse, *with Honors*

PRIZES AWARDED IN 1946

Colleges and Schools at Urbana

- Alpha Chi Sigma Plaque in Chemistry
 Elizabeth M. Barwig
 Thomas R. Crews
- Alpha Delta Sigma Plaque in Journalism
 Mary Lou Roberts
- Alpha Kappa Psi Scholarship Medallion in Commerce
 Richard Francis Kosobud
- Alpha Lambda Delta Prize
 Mary Alice Lambert
- Alpha Rho Chi Medal in Architecture
 Joseph Mertton Barrow
- American Institute of Architects School Medal and Prizes
 Roger Dunham, *Medal and First Prize*
 Anne Catherine Krebs, *Second Prize*
- American Society of Civil Engineers Awards
Illinois Section:
 Thomas Dewitt Wofford, Jr.
Central Illinois Section:
 Dalton Hoskins
 Donald Henry Swets
 Barbara Lee Crawford (*General Engineering*)
- American Society of Mechanical Engineers Prize
 Alexander Edwin McCornack
- Baker Prizes in Civil Engineering
 Robert John Mosborg, *First*
 Malcolm Pickett, Jr., *Second*
- Beta Gamma Sigma Cup in Commerce
 Edward Dean Wickersham
- Borden Scholarships
In Agriculture:
 Dana Adams Stewart
In Home Economics:
 Helen Mae Whitson
- Chicago Tribune Awards for Military Merit
 Sherwin S. Zeid, *Silver Medal*
- Chi Omega Prize in Sociology
 Ida Mae Farlow
- Clark Prize (Phi Eta Sigma)
 David Irwin Rabinov
- English Poetry Prize
 Caroline L. Maddox
- Gamma Sigma Delta Prize in Agriculture
 Dana Adams Stewart
 Raymond Francis Van Poucke
- Harker Prizes in Law
 Charles Reagan Simpson (*Senior*)
 Stuart Mies Mamer (*Junior*)
- Hazelton Medal in Military Science
 William F. Renfroe
- Hearst National R.O.T.C. Rifle Matches
National Individual Winner:
 Charles A. Grosche
National Trophy Team Winners:
 William F. Renfroe
 Charles A. Grosche
 Charles Branson
 Alexander H. Wyroski
 William E. Ranson
- Home Economics Club Cup
 Greta Standish
- Institute of Aeronautical Sciences Award
 Allen Ives Ormsbee
- Intercollegiate Conference Medal
 Robert Leland Phelps
- Iota Sigma Pi Prize in Chemistry
 Helen Mae Whitson
- Journalism Alumni Memorial Scholarship
 Nancy Joyce Kollman
- Kappa Delta Pi Award in Education
 Jeanette Phillips Lindsay
- Kate Neal Kinley Memorial Fellowship
 Sidney Louis Rushakoff, B.F.A., 1945
- McLellan Scholarship in Art
 Jane Burke
- Omega Beta Pi Prizes in Pre-Medical Work
 Herzl Dov Ragins, *Trophy*
 Alyda Rene Ratajik, *Trophy*
- Omicron Nu Plaque in Home Economics
 Helen Mae Whitson
- Phi Beta Kappa Scholarship
 Joan Elizabeth Gagan
- Phi Chi Theta Key in Commerce
 Emily Frank Bever
- Plym Prizes in Architectural Engineering
 Edward Cecil Colin, Jr., *First*
 Maurice Joseph Dolan, *Second*
 Eugene Ernest Halyama, *Third*

Sigma Delta Chi Awards in Journalism

Mary Ellen Brown
John Scott Davenport
Jean Baysinger Herron
Wilma Jean Hurt
Theodore Hazen Kimble
Nancy Joyce Kollman
Jane Abbott Prosper

Citation of Achievement:
Theodore Hazen Kimble

Sinai Temple Scholarship in Music

Martha Ellen Gruba

Theta Sigma Phi Award in Journalism

Nancy Joyce Kollman

Veterans of Foreign Wars Auxiliary Awards

Mary Alice Lambert
Robert John Mosborg
Helen Mae Whitson

Voynow Prize in Music

Harold Edwin Taylor

Professional Colleges in Chicago

**Certificate of Merit of the American Society
for the Promotion of Dentistry for Children**

Arthur Frank Molay

**Frederick B. Noyes Seminar Prize in
Dentistry**

Irving Charles Miller
Arthur Frank Molay
Philip Bloom
Anthony John Malone
Irving Charles Stone
Jack Zwemer

**Omicron Kappa Upsilon Membership Awards
in Dentistry**

Philip Bloom
Alan James Cerney
Robert Fitts Frost
Arthur Frank Molay
Jerry Scott Wilson
Jack Zwemer

Van Schaack Prize in Pharmacy

Rudolph Carl Schobert

GRADUATE SCHOLARS AND FELLOWS

1946-1947

- Agnew, John Philip, Scholar in History (FW)¹
 Ahlquist, Irving Frederick, Fellow in History (FW)
 Austin, Walter James, Fellow in Civil Engineering (FW)
 Aycock, Benjamin Franklin, Jr., Allied Chemical and Dye Corporation Fellow in Chemistry (FW)
 Baldwin, John Howard, Westinghouse Educational Foundation Fellow in Electrical Engineering (W)
 Ball, Richard William, Fellow in Mathematics (FW)
 Baron, Thomas, Standard Oil Fellow in Chemistry (FW)
 Beck, Karl Maurice, Fellow in Chemistry (FW)
 Boettner, Fred Easterday, Fellow in Chemistry (SF)
 Bowman, Ruth Caroline, Scholar in Chemistry (FW)
 Bradley, William Arthur, Scholar in Civil Engineering (FW)
 Browns, Eleanor Ann, Scholar in English (Nominee of Illinois Wesleyan University) (FW)
 Buchanan, James Balfour, Fellow in Chemistry (F)
 Buck, Ruth Darling, Scholar in English (Nominee of Wheaton College) (FW)
 Bushra, Emil, Fellow in Orthodontia (12 months beginning September 1, 1946)
 Chambers, Robert Rood, Monsanto Chemical Company Fellow in Chemistry (FW)
 Chang, Peh-I, Fellow in Entomology (FW)
 Chaplin, James Patrick, Fellow in Psychology (FW)
 Charbonnet, Grace Henrietta, Scholar in Physics (FW)
 Chess, Stephen John, Fellow in Surgery (3 months beginning July 1, 1946)
 Chew, Robert Marshall, Fellow in Zoology (FW)
 Crafts, Audrey Lulu, Scholar in English (FW)
 Crow, Norma Evelyn, Scholar in English (FW)
 Dahm, Paul Adolph, Fellow in Entomology (FW)
 Dale, Estaleta Ora, Scholar in Chemistry (FW)
 Danielson, Theresa, Scholar in Mathematics (FW)
 Dauner, Ruth M., Scholar in Home Economics (FW)
 Day, Luella, Scholar in Spanish (W)
 Easterling, Marvin Leon, Scholar in Philosophy (Nominee of Greenville College) (FW)
 Feldman, Isaac, Fellow in Chemistry (W)
 Foxvog, Donald Rogers, Scholar in Political Science (W)
 Freier, Herbert Edward, Fellow in Chemistry (S)
 Gambill, William Gray, Jr., Fellow in Botany (FW)
 Gayle, Mary Roberta, Scholar in English (Nominee of Lake Forest College) (FW)
 Hang, Sze Lu, Fellow in Bacteriology (FW)
 Hanson, John Wagner, Scholar in History (F)
 Hart, Dorothy Mae, Scholar in Education (Nominee of Southern Illinois Normal University) (FW)
 Hartley, Lois Teal, Fellow in English (FW)
 Hline, Jack Sylvester, Fellow in Chemistry (SFW)
 Hill, Ruth Ryburn, Fellow in English (FW) (Resigned)
 Hoch, Paul Edwin, Fellow in Chemistry (FW)
 Hoehn, Arthur John, Scholar in Education (FW)
 Hoekstra, Justin Bernard, Fellow in Physiology (FW)
 Holtzclaw, Henry Fuller, Jr., Fellow in Chemistry (FW)
 Howard, Edgar, Jr., Fellow in Chemistry (S)
 Hunt, Effie Neva, Fellow in English (FW)
 Hunter, John Merlin, Scholar in Economics (W)
 Hyson, Archibald Miller, Fellow in Chemistry (W)
 Jackson, Harold Leonard, Fellow in Chemistry (FW)
 Jones, Norman Blair, Scholar in Civil Engineering (FW)
 Jones, Stanley Llewellyn, Fellow in History (FW)
 Kao, Hung, Fellow in Chemistry (SFW)
 Katz, Leon, Fellow in Chemistry (FW)
 Kimmelman, Ruth, Scholar in Chemistry (FW) (Resigned)
 Kimura, Kazuo K., Roche Fellow in Pharmacology (12 months beginning July 1, 1946)
 Klose, Theodore Gerard, Allied Chemical and Dye Corporation Fellow in Chemistry (SF)
 Kwasny, Alice Davies, Zeta Phi Eta Scholar in Speech (W)
 Lambert, Mary Alice, Scholar in English (FW)
 Lee, Ming, Fellow in Civil Engineering (FW)
 Lo, Arthur Wu-nien, Fellow in Electrical Engineering (FW)
 Longworth, Jack, Scholar in Civil Engineering (FW)
 Loper, Mava Eileen, Scholar in Education (Nominee of Carthage College) (FW)
 Louwes, Hendrik Jan, C. W. Booth Scholar in Agricultural Economics (SFW)
 Manhart, Robert Audley, Scholar in Electrical Engineering (FW)
 McAllister, Elva Arline, Fellow in English (FW)
 McPherson, James Beverly, Jr., Fellow in Chemistry (W)
 Meisel, Seymour Lionel, Fellow in Chemistry (FW)
 Miller, Donald Calvin, Fellow in Economics (FW)
 Miller, Esther Wilma, Fellow in Ceramic Engineering (FW)
 Miller, Nancy Elizabeth, Katharine L. Sharp Scholar in Library Science (FW)
 Mitchell, Winifred Ruth, Fellow in Bacteriology (S)
 Morfoot, Frances Van Every, Fellow in Mathematics (FW)
 Moseley, Maynard Fowle, Jr., Fellow in Botany (FW)
 Palmer, Frederick Alexander, Fellow in History (FW)
 Parham, William Eugene, Fellow in Chemistry (S)
 Parker, Mary Ann, Scholar in History (FW)
 Parry, Robert Walter, Fellow in Chemistry (S)
 Paul, Allen B., Fellow in Agricultural Economics (FW)
 Picard, Jean-Paul, Fellow in Entomology (FW)
 Randall, Pryor Neil, Standard Oil Company Fellow in Civil Engineering (FW)
 Reed, Lester James, Fellow in Chemistry (S)
 Rice, Madelyn Lucille, Scholar in Spanish (Nominee of Rosary College) (FW)
 Riegel, Garland Tavner, Fellow in Entomology (FW)

¹The letters in parenthesis are abbreviations for the terms of the year for the Urbana departments: S — Summer, four months beginning June 1, 1946; F — Fall, four months beginning October 1, 1946; W — Winter, four months beginning February 1, 1947.

- Ryan, Elizabeth Ann, Scholar in English (Nominee of Monmouth College) (FW)
- Schrader, Coralie Era, Scholar in Classics (Nominee of Knox College) (FW)
- Schweitzer, George Keene, Fellow in Chemistry (FW)
- Seibert, Henri Cleret, Fellow in Zoology (FW)
- Slater, James Alexander, Scholar in Entomology (FW)
- Snead, Claude Rabert, Fellow in Surgery (12 months beginning September 1, 1946)
- Sorenson, Lloyd Rushford, Fellow in History (S)
- Stember, Muriel Kathleen, Scholar in Zoology (FW)
- Stipanowich, Joseph Jean, Scholar in Mathematics (Nominee of Western Illinois State Teachers College) (FW)
- Stratman, Carl Joseph, Fellow in English (FW)
- Tan, Tzi-Lieh, Fellow in Chemistry (FW)
- Theis, Marilyn Jane, Scholar in English (Nominee of Illinois State Normal University) (FW)
- Thompson, Lois Imogene, Scholar in Business Organization and Operation (Nominee of MacMurray College) (FW)
- Tiemeier, Otto William, Fellow in Zoology (FW)
- Trevoy, Donald James, Fellow in Chemistry (FW)
- Trumbull, Elmer Roy, Jr., DuPont Fellow in Chemistry (SFW)
- Truster, Sylvia, Scholar in Sociology (FW)
- Tuttle, Milton Alfred, Fellow in Ceramic Engineering (FW)
- Underhill, Elizabeth Joyce, Scholar in Chemistry (FW)
- Weiherman, Eleanor Marie, Scholar in English (Nominee of Northern Illinois State Teachers College) (FW)
- Williams, Henrietta VerMeer, Fellow in Psychology (FW)
- Williams, Jesse Noah, Fellow in Chemistry (FW)
- Woods, Dorothea Eleanor, Scholar in French (FW)

SUMMARY OF STUDENTS, BY COLLEGES AND SCHOOLS AND CLASSES, 1946-1947

URBANA DEPARTMENTS

	Seniors		Juniors		Sophomores		Freshmen		Unclassified		Irregular		TOTALS			
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women		
First and Second Semesters																
LIBERAL ARTS AND SCIENCES	89	89	61	2	63	76	76	69	69	1	1	1	1	295	2	297
Chemical Engineering	5	5	72	10	67	33	9	42	54	8	62	5	5	205	40	245
Chemistry	5	35	40	18	43	61	21	42	63	21	24	45	24	65	144	209
Division of General Studies	338	491	829	309	470	779	305	547	852	384	604	988	5	1,355	2,158	3,513
General	6	6	8	8	8	3	3	7	7	2	2	1	1	27	27	27
Home Economics	11	11	13	13	13	1	22	23	3	3	3	3	3	1	51	52
Occupational Therapy	9	9	18	18	18	34	42	42	42	34	34	105	103	103	103	103
Preparatory to Dentistry	3	3	22	22	22	65	60	125	71	34	105	77	77	161	116	277
Preparatory to Journalism	20	1	21	40	3	43	59	2	61	64	8	72	72	183	14	197
Preparatory to Law	7	7	109	11	130	11	141	157	23	180	180	180	1	467	552	552
Preparatory to Medicine	8	60	68	9	79	88	15	40	55	9	30	39	41	41	209	250
Teacher Training	601	626	1,227	643	661	1,304	739	736	1,475	871	743	1,614	6	2,876	2,816	5,692
Total, Liberal Arts and Sciences																
COMMERCIAL	477	59	536	537	58	595	616	61	677	692	58	750	1	1,309	123	1,432
Lower Division	477	59	536	537	58	595	616	61	677	692	58	750	1	1,309	123	1,432
Upper Division																
Total, Commerce																
EDUCATION	60	89	149	11	35	46	8	8	8	5	5	5	3	74	135	209
General	9	9	9	12	12	5	5	5	5	5	5	5	3	34	34	34
Industrial	69	89	158	23	35	58	8	8	8	8	8	8	3	108	135	243
Total, Education																
ENGINEERING	46	46	69	69	69	88	2	90	38	1	39	39	241	3	244	244
Aeronautical	13	1	14	17	16	16	16	10	10	7	7	7	2	58	1	59
Agricultural	23	23	11	11	11	12	12	7	7	7	7	7	1	54	54	54
Ceramic Engineering	13	13	10	10	10	10	10	9	10	10	10	10	42	1	43	43
Ceramics	182	182	136	137	137	120	120	53	53	120	53	53	492	1	493	493
Civil	209	209	252	1	253	245	1	246	2	246	2	246	5	847	3	850
Electrical	18	18	19	19	19	16	16	16	16	6	6	6	59	59	59	59
Electrical Physics	48	48	42	42	42	60	60	90	101	90	101	101	241	241	241	241
General	284	1	285	228	228	239	239	239	100	1	101	1	4	856	2	858
Mechanical	32	32	18	1	19	17	17	3	3	2	2	2	72	1	73	73
Metallurgical	6	6	6	6	6	6	6	6	6	6	6	6	14	14	14	14
Mining	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Sanitary	878	2	880	806	3	809	825	3	828	455	4	459	3	2,981	12	2,993
Total, Engineering																
AGRICULTURE	12	12	11	1	12	21	21	11	11	2	11	11	1	56	1	57
Dairy Technology	5	7	9	4	13	11	9	13	13	8	257	8	20	50	50	50
Plant Culture	173	7	180	125	2	127	159	3	162	249	8	249	20	726	23	749
General	79	79	1	80	81	67	67	67	89	89	89	89	1	26	320	321
Home Economics	14	14	22	1	23	28	28	28	60	2	62	62	2	126	3	129
Pre-Forestry	27	27	27	27	27	25	25	25	24	24	24	24	2	99	1	100
Pre-Veterinary	231	88	319	193	89	282	257	72	329	370	101	471	2	1,077	358	1,435
Total, Agriculture																
FINE AND APPLIED ARTS	142	10	152	159	9	168	157	13	170	135	8	143	4	597	40	637
Architecture	31	49	80	33	68	101	44	69	113	48	55	103	3	160	248	408
Art	16	1	17	17	1	18	25	25	25	12	4	16	6	70	6	76
Landscape Architecture	21	29	50	24	29	53	20	25	45	19	29	48	2	88	120	208
Music	210	89	299	233	107	340	246	107	353	214	96	310	3	915	414	1,329
Total, Fine and Applied Arts																
PHYSICAL EDUCATION	66	32	98	83	42	125	135	22	157	192	37	229	1	476	135	611
Journalism	74	80	154	81	63	144	1	1	1	1	1	1	1	157	146	303
DIVISION OF SPECIAL SERVICES																
FOR WAR VETERANS	429	6	435	512	6	518	562	9	571	616	12	628	8	2,137	34	2,171
Total, Undergraduates																
Urbana	3,085	1,071	4,106	3,111	1,064	4,175	3,389	1,010	4,399	3,415	1,081	4,466	23	13,064	4,290	17,354

	Fourth Year		Third Year		Second Year		First Year		Unclassified		Irregular ¹											
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women										
LAW	6	3	9	75	3	78	122	3	125	204	10	214	1	..	1	4	1	5	412	20	432	
LIBRARY	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	52	62
<i>Total, Undergraduate and Professional Students, Urbana</i>																						
<i>GRADUATE SCHOOL, URBANA DEPARTMENTS</i>																						
<i>Total, Urbana, First and Second Semesters</i>																						
Summer Session of 1946																						
Graduate Students																						
Undergraduate Students																						
<i>Total, Summer Session of 1946</i>																						
Deduct Duplicates (Graduates) (registered also for first and second semesters, counted above)																						
Deduct Duplicates (Undergraduates) (registered also for first and second semesters, counted above)																						
<i>Net Total, Urbana Departments, Summer Session of 1946</i>																						
GRAND TOTAL, URBANA DEPARTMENTS TO MARCH 28, 1947																						
1,180 416 1,596																						
5,259 1,062 6,321																						
(6,439) (1,478) (7,917)																						
(698) (115) (813)																						
(4,481) (635) (5,116)																						
1,260 728 1,988																						
16,447 5,584 22,031																						

	Fourth Year		Third Year		Second Year		First Year		Unclassified									
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women								
CHICAGO DEPARTMENTS																		
PROFESSIONAL COLLEGES																		
Spring, Summer, Fall, and Winter Quarters																		
MENACE	323	17	340	135	18	153	134	26	160	160	32	192	1	1	2	753	94	847
Medical Technology
Occupational Therapy
DENTISTRY	74	1	75	13	4	13	31	4	35	77	4	81	105	10	205
PHARMACY	84	4	88	75	9	84	103	24	127	136	11	147	1	339	48	447
<i>Total, Undergraduates, Chicago</i>																		
PHYSICIANS, DENTISTS, PHARMACISTS, AND SCIENTIFIC ILLUSTRATORS TAKING SPECIAL COURSES																		
GRADUATE SCHOOL, CHICAGO DEPARTMENTS																		
Deduct Duplicates (students registered in more than one college or school)																		
<i>Total, Professional Colleges, Chicago</i>																		
1,347 183 1,530																		
488 20 508																		
125 26 151																		
(8) (8) (8)																		
1,952 229 2,181																		

	Sophomores		Freshmen		Unclassified	
	Men	Women	Men	Women	Men	Women
UNDERGRADUATE DIVISION						
First and Second Semesters						
LIBERAL ARTS AND SCIENCES	187	51	238	1,522	534	2,056
COMMERCE	85	7	92	973	35	1,008
ENGINEERING	210	3	213	1,609	12	1,621
<i>Total, Undergraduate Division, Chicago</i>						
482 61 543 4,104 581 4,685						
TOTAL, CHICAGO DEPARTMENTS						
6,543 871 7,414						

	Sophomores		Freshmen		Unclassified	
	Men	Women	Men	Women	Men	Women
GALESBURG DEPARTMENT						
UNDERGRADUATE DIVISION						
First and Second Semesters						
LIBERAL ARTS AND SCIENCES	104	10	114	354	75	429
COMMERCE	44	3	47	227	7	234
ENGINEERING	65	3	68	261	..	261
<i>Total, Galesburg Departments</i>						
213 13 226 842 82 924						
TOTAL, GALESBURG DEPARTMENTS						
1,056 96 1,152						

	Extramural Courses		Cooperative Extension Centers, First and Second Semesters		Total Enrollment in University to March 28, 1947	
	Men	Women	Men	Women	Men	Women
EXTRAMURAL COURSES						
Graduate Students						
Undergraduate Students (includes 1,800 registered in non-credit courses)						
<i>Total, Extramural Students</i>						
287 212 499						
1,552 549 2,101						
1,839 761 2,600						
3,056 538 3,594						
28,941 7,850 36,791						

¹ Post-graduate students holding bachelors' degrees who are not classified for another degree. These students include those who are taking undergraduate work.

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