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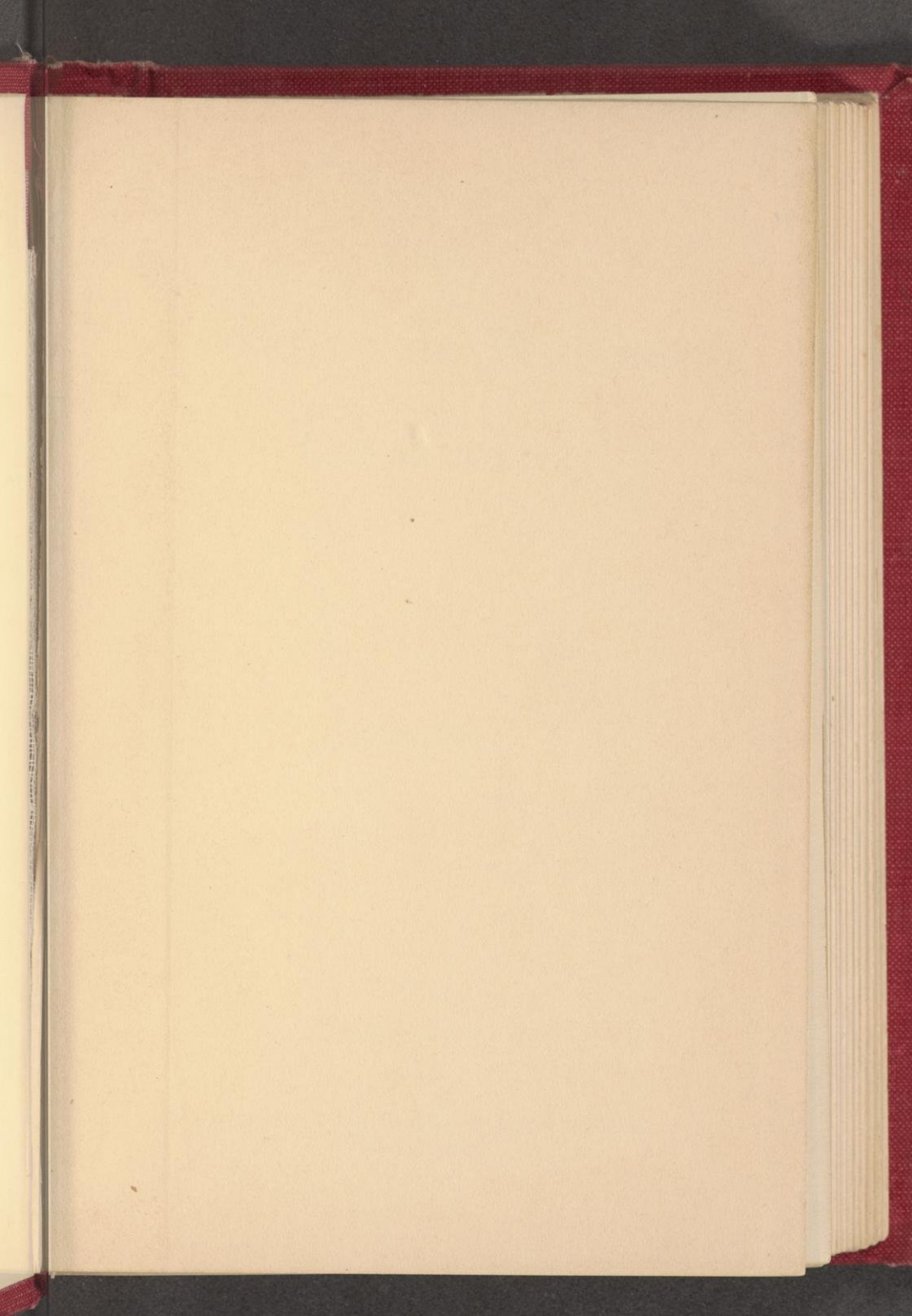
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THE
UNIVERSITY OF WISCONSIN
CATALOGUE

1909 - 1910

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THE
UNIVERSITY OF WISCONSIN
CATALOGUE

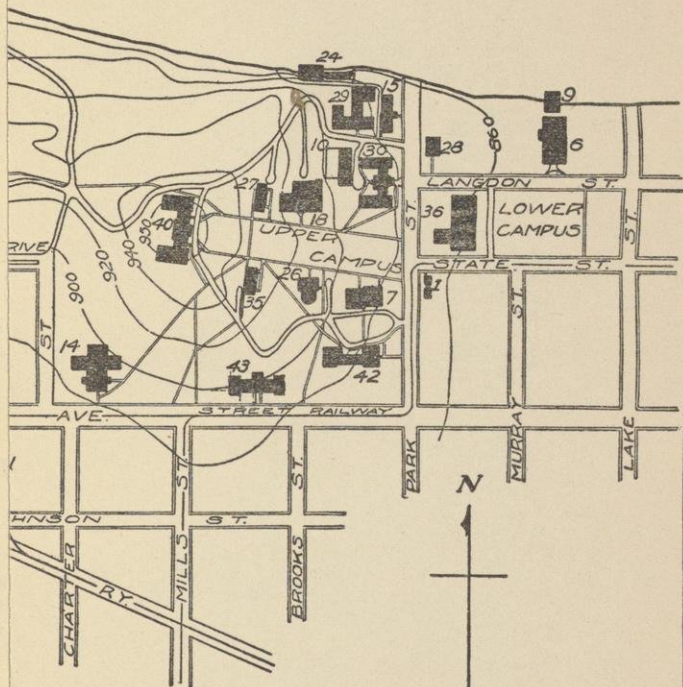
1909-1910

MADISON
1910

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MADISON, WISCONSIN

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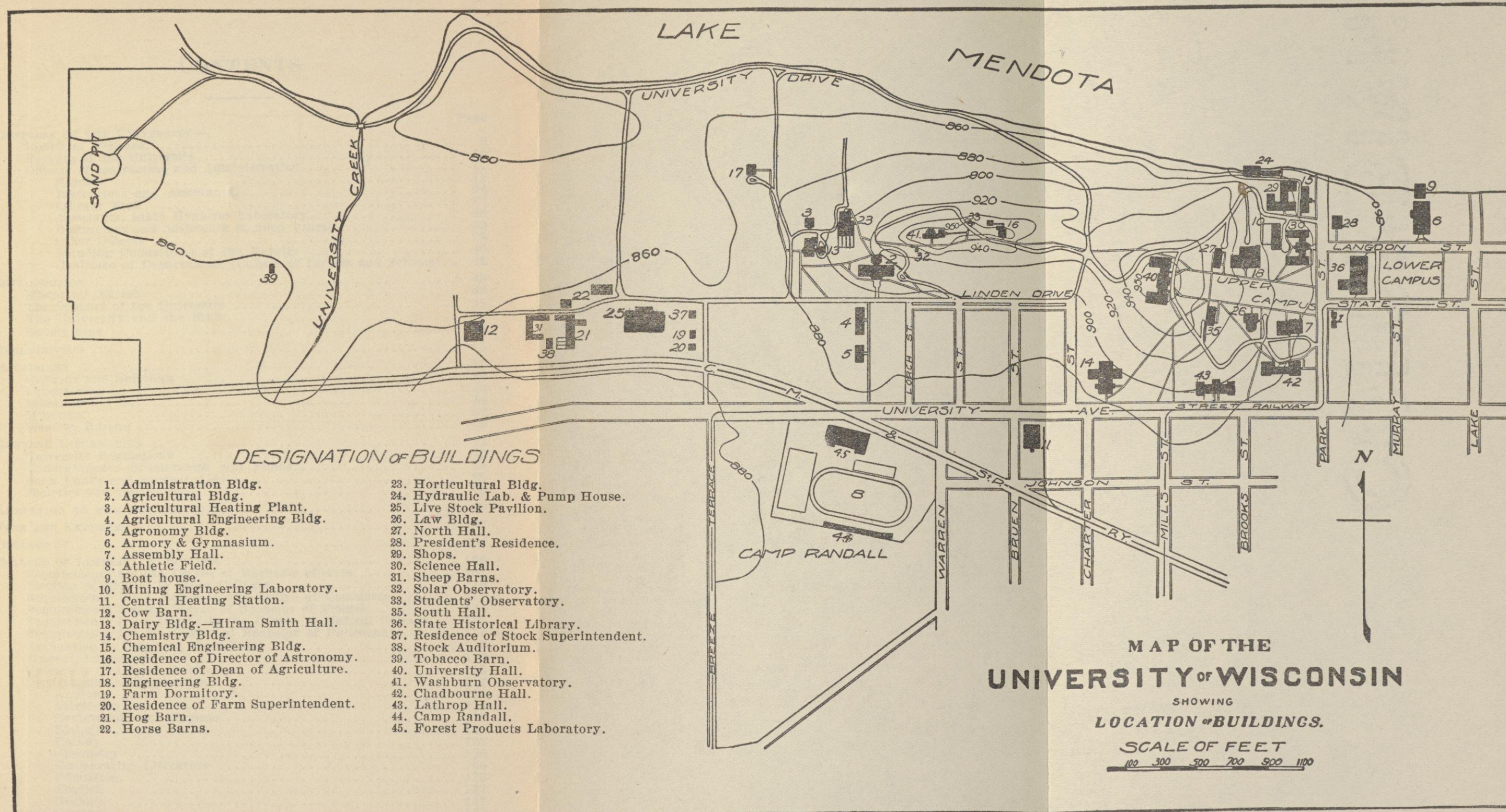


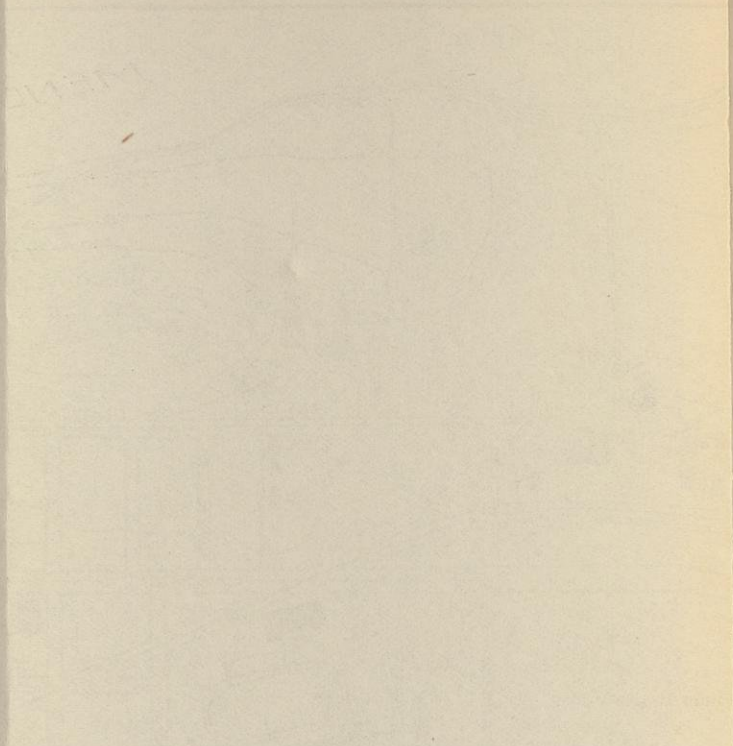
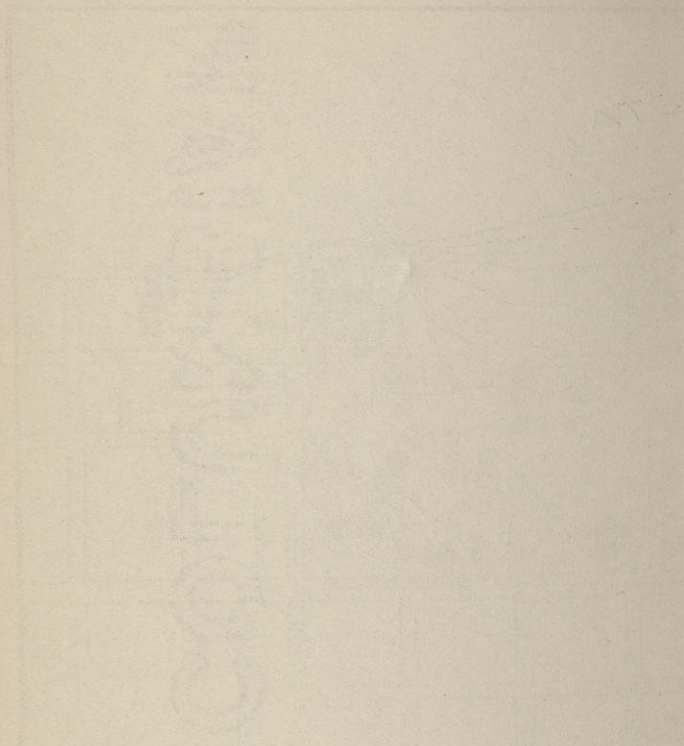
**MAP OF THE
UNIVERSITY OF WISCONSIN**

SHOWING
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DESIGNATION

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1910

JANUARY.							FEBRUARY.							MARCH.							APRIL.						
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1911

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CALENDAR

1909

Sept.	27-28-29	Mon.-Tu.-Wed.	Registration days.
Sept.	28-29	Tu.-Wed.	Examinations for admission.
Sept.	30	Thursday	Lectures and recitations begin.
Nov.	25	Thursday	Thanksgiving day: Legal holiday.
Dec.	23	Thursday	Christmas recess begins.

1910

Jan.	4	Tuesday	Exercises resumed.
Feb.	7-16	Mon.-Wed.	Final examinations, first semester.
Feb.	17-18	Thur.-Fri.	Registration days.
Feb.	21	Monday	Lectures and recitations begin.
Feb.	22	Tuesday	Washington's birthday.
Mar.	24-28	Thur.-Mon.	Easter recess.
May	30	Monday	Memorial day: Legal holiday.
June	11-17	Sat.-Fri.	Final examinations, second semester.
June	16-17	Fri.-Sat.	Examinations for admission.
June	19-22	Sun.-Wed.	Commencement week.

Commencement Week

June	19	Sunday	Baccalaureate address.
June	20	Mon.	Class day exercises.
June	21	Tuesday	Alumni day.
June	22	Wednesday	Commencement day.

Summer Session

June	27	Monday	Summer session opens.
Aug.	5	Friday	Summer session closes.

THE ACADEMIC YEAR 1910-11

1910

Sept.	26-27-28	Mon.-Tu.-Wed.	Registration days.
Sept.	27-28	Tu.-Wed.	Examinations for admission.
Sept.	29	Thursday	Lectures and recitations begin.
Nov.	24	Thursday	Thanksgiving day: Legal holiday.
Dec.	23	Thursday	Christmas recess begins.

1911

Jan.	3	Tuesday	Exercises resumed.
Feb.	6-15	Mon.-Wed.	Final examinations, first semester.
Feb.	16-17	Th.-Fri.	Registration days.
Feb.	20	Monday	Lectures and recitations begin.
Feb.	22	Wednesday	Washington's birthday: Legal holiday.
Apr.	13-17	Th.-Mon.	Easter recess.
May	30	Tuesday	Memorial day: Legal holiday.
June	10-16	Sat.-Fri.	Final examinations, second semester.
June	15-16	Th.-Fri.	Examinations for admission.
June	18-21	Sun.-Wed.	Commencement week.

THE BOARD OF VISITORS

1909-1910

STATE AT LARGE

- E. RAY STEVENS, Madison.
C. I. BRIGHAM, Blue Mounds.
THOS. R. LLOYD-JONES, Hillside.
B. L. WORDEN, Milwaukee.

CONGRESSIONAL DISTRICTS

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2nd District, C. F. LAMB, Madison.
3rd District, DR. W. J. PEARSE, Dodgeville.
4th District, J. G. WRAY, Chicago, Ill.
5th District, H. C. SCHRANCK, Milwaukee.
6th District, FRED C. CLAUSEN, Horicon.
7th District, J. E. McCONNELL, La Crosse.
8th District, MISS ROSE SWART, Oshkosh.
9th District, THOS. H. RYAN, Appleton.
10th District, MISS NELL DUNBAR, Wausau.
11th District, MRS. IMOGENE H. CARPENTER, Racine.

THE REGENTS

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 CHARLES P. CARY, State Superintendent of Public Instruction,
Ex-officio.

	TERM EXPIRES
STATE-AT-LARGE—MAGNUS SWENSON, Madison, - -	1910
STATE-AT-LARGE—W. D. HOARD, Fort Atkinson, - -	1912
FIRST DISTRICT—PLINY NORCROSS, Janesville, - -	1910
SECOND DISTRICT—LUCIEN S. HANKS, Madison, -	1911
THIRD DISTRICT—ENOS L. JONES, Hillside, - -	1910
FOURTH DISTRICT—FREDERICK C. THWAITES, Milwaukee, - - - - -	1911
FIFTH DISTRICT—JAMES F. TROTTMAN, Milwaukee, -	1911
SIXTH DISTRICT—D. P. LAMOREUX, Beaver Dam, -	1911
SEVENTH DISTRICT—EDWARD EVANS, La Crosse, -	1911
EIGHTH DISTRICT—MRS. FLORENCE G. BUCKSTAFF, Oshkosh, - - - - -	1910
NINTH DISTRICT—GUSTAVE KELLER, Appleton, - -	1910
TENTH DISTRICT—GRANVILLE D. JONES, Wausau, -	1912
ELEVENTH DISTRICT—A. P. NELSON, Grantsburg, - -	1912

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 L. S. HANKS, *Vice-President.*
 A. H. DAHL, State Treasurer, *Ex-officio Treasurer.*
 M. E. McCaffrey, *Secretary.*
 L. J. PICKARTS, *Bursar.*
 EDNA FEWSON, *Purchasing Agent.*

THE OFFICERS OF INSTRUCTION AND ADMINISTRATION

FACULTY

The abbreviations in italic letters indicate the University buildings in which offices are located: *Adm. B.*, Administration Building; *A. E. B.*, Agricultural Engineering Building; *Agr. B.*, Agronomy Building; *A. H.*, Agricultural Hall; *C. B.*, Chemical Building; *C. E. B.*, Chemical Engineering Building; *C. H.*, Chadbourne Hall; *E. B.*, Engineering Building; *Gym.*, Gymnasium; *H. P. B.*, Horticulture-Physics Building; *H. S. H.*, Hiram Smith Hall; *Hyd. Lab.*, Hydraulic Laboratory; *L. B.*, Law Building; *Lib.*, Library; *M. S.*, Machine Shops; *N. H.*, North Hall; *Sc. H.*, Science Hall; *S. H.*, South Hall; *U. H.*, University Hall.

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ALLEN, KATHERINE, Ph. D., Assistant Professor of Latin. *U. H.* 266. 228 Langdon

BABCOCK, STEPHEN MOULTON, Ph. D., LL. D.,
Assistant Director and Chief Chemist of the Agricultural Experiment Station. Professor of Agricultural Chemistry. *A. H.* 36. 432 Lake

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- †COFFIN, VICTOR, Ph. D., Assistant Professor of European History. *U. H.* 209. 1919 Arlington Pl.
- ‡COLE, LEON J., Associate Professor of Experimental Breeding.

* On leave of absence, academic year, 1909-10.

† On leave of absence, first semester, 1909-10.

‡ Appointed February 21, 1910.

- COMMONS, JOHN ROGERS, M. A., Professor of
Political Economy. *Lib.* 118. 224 N. Murray
- COMSTOCK, GEORGE CARY, Sc. D., LL. D., Di-
rector of Washburn Observatory. Director
of the Graduate School. Professor of
Astronomy. *U. H.* 162. Observatory Hill
- COOK, WALTER WHEELER, M. A., LL. M., Pro-
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Professor of Chemistry.
- DAVIS, GEORGE JACOB JR., C. E., Assistant Pro-
fessor of Hydraulic Engineering. *Hyd.*
Lab. 1731 Regent
- DELWICHE, EDMUND JOSEPH, M. S. A., Superin-
tendent of Northern Sub-Station Farms. Ashland, Wis.
- §DENNIS, ALFRED LEWIS PINNEO, Ph. D., Profes-
sor of European History. *Lib.* 123.
- DENNISTON, ROLLIN HENRY, Ph. D., Assistant
Professor of Botany. *Sc. H.* 52. 803 State
- DICKINSON, THOMAS HERBERT, Ph. D., Assistant
Professor of English. *U. H.* 365. 212 W. Gilman
- DOBSON, JOSIE HELEN, M. D., Medical Examiner,
Department of Phys. Training. *Lathrop*
Hall. 310 N. Brooks
- DODGE, ROBERT ELKIN NEIL, M. A., Assistant
Professor of English. *U. H.* 365. 15 W. Gorham
- DOWLING, LINNEAUS WAYLAND, Ph. D., Assist-
ant Professor of Mathematics. *U. H.* 255. 2 Roby Road
- DUDLEY, WILLIAM HENRY, B. A., Assistant Li-
brarian. *Lib.* 1909 Regent
- ELLIOTT, EDWARD CHARLES, Ph. D., Director of
the Course for the Training of Teachers.
Professor of Education. *U. H.* 123. 222 N. Hamilton
- ELSON, JAMES CLAUDE, M. D., Medical Exam-
iner in the Department of Physical Train-
ing. *Gym.* 1614 Jefferson

§ On leave of absence, second semester, 1909-10.

- ELY, RICHARD THEODORE, Ph. D., LL. D., Professor of Political Economy. *S. H.* 23.
205 Prospect Ave.
- ERLANGER, JOSEPH, B. S., M. D., Professor of Physiology. *C. E. B.* 213. 148 W. Gorham
- *EVANS, JOSEPH S., Professor of Clinical Medicine. Medical Adviser. 821 State
- EVANS, MARSHALL BALKEMORE, Ph. D., Associate Professor of German. *N. H.* 33. 21 Mendota Ct.
- EVANS, SILAS, M. A., Assistant Professor of Hebrew and Hellenistic Greek. *S. H.* 8. 501 E. Gorham
- FARRINGTON, EDWARD HOLYOKE, M. S., Professor of Dairy Husbandry. *H. S. H.* 301. 315 N. Mills
- FISCHER, RICHARD, Ph. C., Ph. D., Professor of Chemistry. *C. B.* 324. 119 E. Johnson
- FISH, CARL RUSSELL, Ph. D., Professor of American History. *U. H.* 208. 625 Mendota Ct.
- FISKE, GEORGE CONVERSE, Ph. D., Associate Professor of Latin. *U. H.* 267. 625 Mendota Ct.
- FLINT, ALBERT STOWELL, M. A., Astronomer. Washburn Observatory. 450 N. Charter
- FREEMAN, JOHN CHARLES, LL. D., Professor of English Literature. *U. H.* 354. 222 Langdon
- FROST, WILLIAM DODGE, Ph. D., Associate Professor of Bacteriology. *S. H.* 22. 310 N. Bruen
- FULLER, JAMES GARFIELD, B. S. A., Assistant Professor of Animal Husbandry. *A. H.* 50. 1938 Adams Ave.
- GAGE, OTIS AMSDEN, Ph. B., Assistant Professor of Physics. *Sc. H.* 23. 121 W. Gilman
- GAY, LUCY MARIA, B. L., Assistant Professor of Romance Languages. *U. H.* 304. 216 N. Pinckney
- GIESE, WILLIAM FREDERIC, M. A., Associate Professor of Romance Languages. *U. H.* 306. 121 N. Franklin
- GILMAN, STEPHEN WARREN, LL. B., Professor of Business Administration. *N. H.* 82. 410 N. Livingston

* Appointed February 1, 1910.

- GILMORE, EUGENE ALLEN, B. A., LL. B., Pro-
fessor of Law. *L. B.* 143 Prospect Ave.
- GOODNIGHT, SCOTT HOLLAND, Ph. D., Assistant
Professor of German. *N. H.* 37. 1120 W. Johnson
- GRIFFITH, EDWARD MERRIAM, State Forester.
Lecturer in Forestry. *Capitol* 408. 205 S. Hamilton
- HALPIN, JAMES GARFIELD, B. S. A., Assistant
Professor of Poultry Husbandry. *A. H.*
15 and 48. 1930 Monroe
- HARPER, ROBERT ALMER, Ph. D., Professor of
Botany. *Sc. H.* 39. 444 N. Charter
- HART, EDWIN BRET, B. S., Professor of Agricul-
tural Chemistry. Chemist of the Experi-
ment Station. *A. H.* 57. 302 Lathrop
- HASTINGS, EDWIN GEORGE, M. S., Associate Pro-
fessor of Agricultural Bacteriology. *A. H.*
20. 1906 W. Lawn Ave.
- HATCH, KIRK LESTER, B. S., Assistant Professor
of Agricultural Education and Secretary
of Agricultural Extension. *A. H.* 29. 1727 Madison
- HAVARD, FRANCIS THOMPSON, E. M., Assistant
Professor of Mining and Metallurgy. *E. B.*
216. 1911 Monroe
- *HENRY, WILLIAM ARNON, D. Agr., D. Sc., *Emer-
itus* Professor of Agriculture.
- HOHLFELD, ALEXANDER RUDOLPH, Ph. D., Pro-
fessor of German. *N. H.* 27. 104 Breese Terrace
- HOLDEN, EDWIN CHAPIN, B. S., E. M., Profes-
sor of Mining Engineering. *E. B.* 216.
1920 Arlington Place
- HOLMES, SAMUEL JACKSON, Ph. D., Assistant
Professor of Zoology. *Sc. H.* 57. 2002 Madison
- HOOL, GEORGE ALBERT, B. S., Assistant Profes-
sor of Structural Engineering. *U. H.* 101.
11 E. Dayton
- HOWE, FREDERIC CLEMSON, Ph. D., Lecturer in
Political Science. *U. H.* 319. 424 N. Pinckney
- HUBBARD, FRANK GAYLORD, Ph. D., Professor of
the English Language. *U. H.* 355. 227 Langdon

* On leave of absence.

- HUBERICH, CHARLES HENRY, J. U. D., D. C. L.,
LL. D., Professor of Law. *L. B.* 515 N. Carroll
- HUMPHREY, GEORGE COLVIN, B. S., Professor of
Animal Husbandry. *A. H.* 48. 438 University Farm Pl.
- *HUTCHINS, CHARLES PELTON, M. D., Director of
Physical Training and Director of the De-
partment. *Gym.* 212 Monona Ave.
- HUTCHINS, FRANK AVERY, Secretary of Debat-
ing and Public Discussions. *U. H.* 154. 435 Lake
- INGERSOLL, LEONARD ROSE, Ph. D., Assistant
Professor of Physics. *Sc. H.* 6. 810 Oakland Ave.
- JANSKY, CYRIL METHODIUS, B. A., B. S., As-
sociate Professor of Electrical Engineer-
ing. *U. H.* 101. 2018 Madison
- †JASTROW, JOSEPH, Ph. D., Professor of Psychol-
ogy. *U. H.* 12. 237 Langdon
- JONES, BURR W., M. A., LL. B., Professor of
Law. *L. B.* 112 Langdon
- JONES, EDWARD RICHARD, M. S., Assistant Pro-
fessor of Soils. *H. P. B.* 4a. 313 Mills
- JONES, L. R., Professor of Plant Pathology.
A. H. 37 and 45B. 1938 Adams Ave.
- JUDAY, CHANCEY, M. A., Lecturer in Zoology.
Sc. H. 43. 610 Lake
- KAHLENBERG, LOUIS, Ph. D., Director of the
Course in Chemistry. Professor of Chem-
istry. *C. B.* 103. 234 Lathrop
- KELLY, FREDERICK THOMAS, Ph. D., Assistant
Professor of Hebrew and Hellenistic
Greek. *S. H.* 8. 1203 W. Dayton
- KEOWN, ROBERT MCARDLE, B. S., Assistant Pro-
fessor of Machine Design. *E. B.* 201. 206 N. Brooks
- KERR, ALEXANDER, M. A., *Emeritus* Professor of
the Greek Language and Literature. 140 Langdon
- KIND, JOHN LOUIS, Ph. D., Assistant Professor
of German. *N. H.* 27. 419 Sterling Ct.

* Resigned January 1, 1910.

† On leave of absence, second semester, 1909-10.

- KINNE, WILLIAM SPAULDING, B. S., Assistant
Professor of Structural Engineering. *E. B.*
306. 609 Lake
- KOELKER, WILLIAM FREDERICK, Ph. D., Assistant
Professor of Chemistry. *C. B.* 309. 625 Mendota Ct.
- KREMERS, EDWARD, Ph. G., Ph. D., Director of
the Course in Pharmacy. Professor of
Pharmaceutical Chemistry. *C. B.* 303. 1722 Jackson
- LAIRD, ARTHUR GORDON, Ph. D., Associate Pro-
fessor of Greek and Comparative Philology.
U. H. 263. 21 Mendota Ct.
- LATHROP, HENRY BURROWES, B. A., Associate
Professor of English. *U. H.* 355. 1031 W. Johnson
- LEE, CARL EMIL, M. S., Assistant Professor of
Dairying. *H. S. H.* 204. 1615 Jefferson
- LEITH, CHARLES KENNETH, Ph. D., Professor of
Geology. *Sc. H.* 32. 240 Langdon
- LENHER, VICTOR, Ph. D., Professor of Chemistry.
C. B. 203. 158 Summit Ave.
- LEONARD, WILLIAM ELLERY, Ph. D., Assistant
Professor of English. *U. H.* 366. 222 Langdon
- LIGHTY, WILLIAM HENRY, Ph. B., Secretary Cor-
respondence Study Department. *U. H.*
154. 2006 Monroe
- LOEVENHART, ARTHUR SOLOMON, M. S., M. D.,
Professor of Pharmacology and Toxicol-
ogy. *C. E. B.* 300. 419 Sterling Ct.
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of Music. *Assembly Hall.* 1606 Madison
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139 W. Gilman
- *MC CARTHY, CHARLES, Ph. D., Lecturer in Po-
litical Science. *Capitol* 417. 409 N. Henry
- MCCOLLUM, ELMER VERNER, Ph. D., Assistant
Professor of Agricultural Chemistry. *A.*
H. 59. 1210 W. Washington Ave.

* On leave of absence, academic year, 1909-10.

- McCoy, RALPH, Captain U. S. Army. Professor of Military Science and Tactics. *Army* 6. 214 W. Gilman
- McGILVARY, EVANDER BRADLEY, Ph. D., Professor of Philosophy. *U. H.* 108. 1902 Arlington Pl.
- McKerrow, GEORGE, Superintendent of Farmers' Institutes. *A. H.* 22. 107 S. Butler
- Mack, JOHN GIVAN DAVIS, M. E., Professor of Machine Design. *E. B.* 203. 110 E. Johnson
- MARLATT, ABBY LILLIAN, M. S., Professor of Home Economics. *Lathrop Hall.* 248 Langdon
- *MARQUETTE, WILLIAM GEORGE, Ph. D., Assistant Professor of Botany.
- MARSHALL, WILLIAM STANLEY, Ph. D., Associate Professor of Entomology. *Sc. H.* 58. 116 E. Gorham
- MARTIN, LAWRENCE, M. A., Assistant Professor of Physiography and Geography. *Sc. H.* 26. 222 W. Gilman
- MASON, MAX, Ph. D., Associate Professor of Mathematics. *U. H.* 65. 152 W. Gorham
- MAUREB, EDWARD ROSE, B. C. E., Professor of Mechanics. *E. B.* 202. 167 Prospect Ave.
- MAYHEW, ABBY SHAW, Assistant Professor of Physical Training. *Lathrop Hall.* 310 Brooks
- MEAD, DANIEL WEBSTER, C. E., Professor of Hydraulic and Sanitary Engineering. *E. B.* 210. 1015 University Ave.
- MENDENHALL, CHARLES ELWOOD, Ph. D., Professor of Physics. *Sc. H.* 17. 23 Mendota Ct.
- MEYER, BALTHASAR HENRY, Ph. D., Professor of Political Economy. 1937 Arlington Pl.
- MEYER, ERNST CHRISTOPHER, Ph. D., Assistant Professor of Political Science. *U. H.* 321. 220 N. Hamilton
- MILLAR, ADAM VAUSE, M. S., Assistant Professor of Mechanical Drawing. *E. B.* 305. 1011 Grant St.
- MILLER, ERIC REXFORD, Local Forecaster, U. S. Weather Bureau. *N. H.* 84. 640 State

* On leave of absence, academic year, 1909-10.

- MILLER, WILLIAM SNOW, M. D., Associate Professor of Anatomy. *Sc. H. Room G.* 803 State
- MOORE, JAMES GARFIELD, M. S., Assistant Professor of Horticulture. *H. P. B. 202.*
Horticulture-Physics Building
- MOORE, RANSOM ASA, Professor of Agronomy. *Agr. B. 28.* 202 S. Warren
- MOORE, WILLIAM UNDERHILL, M. A., LL. B., Associate Professor of Law. *L. B.* 2011 Monroe
- MUNRO, DANA CARLETON, M. A., Professor of European History. *Lib. 123.* 630 Frances
- NEYSTROM, PAUL HENRY, Ph. B., District University Extension Representative, Oshkosh. 25-27 High St., Oshkosh
- NORGORD, CHRISTIAN PERCIVAL, B. S., Assistant Professor of Agronomy. *Agr. B. 24.* 1212 W. Johnson
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- OLIN, JOHN MYERS, M. A., LL. B., Professor of Law. *L. B.* 762 Langdon
- OLSON, JULIUS EMIL, B. L., Professor of Scandinavian Languages and Literature. *U. H. 60.* 1012 E. Gorham
- O'SHEA, M. VINCENT, B. L., Professor of Education. *U. H. 120.* 140 Langdon
- OTIS, DANIEL HENRY, M. S., Assistant to Dean of College of Agriculture. Professor of Farm Management. *A. H. 31.* 1715 Madison
- OVERTON, JAMES BERTRAM, Ph. D., Assistant Professor of Botany. *Sc. H. 65.* 512 Wisconsin Ave.
- OWEN, EDWARD THOMAS, Ph. D., Professor of French and Linguistics. *U. H. 322.* 614 State
- PARKER, FLETCHER ANDREW, *Emeritus* Professor of Music. 14 W. Gilman
- PARKINSON, JOHN BARBER, M. A., *Emeritus* Professor of Constitutional and International Law. 516 Wisconsin Ave.

- PENCE, WILLIAM DAVID, C. E., Professor of Rail-
way Engineering. *E. B.* 206. 182 Prospect Ave.
- PHILLIPS, JAMES DAVID, B. S., Professor of
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- PROKOSCH, EDUARD, Ph. D., Assistant Professor
of German and Comparative Philology.
N. H. 39. 1115 Edgewood Ave.
- PYRE, JAMES FRANCIS AUGUSTINE, Ph. D., As-
sociate Professor of English. *U. H.* 367. 103 E. Wilson
- RASTALL, BENJAMIN MCKIE, Ph. D., Associate
Professor of Business Administration. *U.*
H. 104. 204 N. Brooks
- RAVENEL, MAZYCK PORCHER, M. D., Director of
the Hygienic Laboratory and Professor of
Bacteriology. *A. H.* 35, *S. H.* 48 and 21.
419 Sterling Ct.
- REBER, LOUIS EHRLHART, M. S., Sc. D., Director
of University Extension. *U. H.* 157. 636 Frances
- REED, FRANK OTIS, Ph. D., Assistant Professor
of Romance Languages. *U. H.* 308. 401 Wisconsin Ave.
- REINSCH, PAUL SAMUEL, Ph. D., Professor of
Political Science. *Lib.* 121. 423 Wisconsin Ave.
- RICHARDS, HARRY SANGER, LL. D., Dean of the
Law School. Professor of Law. *L. B.* 640 Frances
- ROE, FREDERICK WILLIAM, M. A., Ph. D., As-
sistant Professor of English, Chairman of
Freshmen Advisers. *U. H.* 162. 218 W. Gilman
- *ROEDDER, EDWIN CARL LOTHAR CLEMENS, Ph. D.,
Assistant Professor of German Philology.
N. H. 26. 412 Lake
- *ROSS, EDWARD ALSWORTH, Ph. D., Professor of
Sociology. *S. H.* 24. 1941 Arlington Pl.
- RUSSELL, HARRY LUMAN, Ph. D., Dean of the
College of Agriculture. Director of the
Agricultural Experiment Station. *A. H.*
30. University Farm

* On leave of absence, second semester, 1909-10.

* On leave of absence, second semester, 1909-10.

- SAMMIS, JOHN LANGLEY, Ph. D., Assistant Professor of Dairy Husbandry. *H. S. H.* 303a. 234 Breese Terrace
- SANBORN, JOHN BELL, Ph. D., Lecturer in Law. *L. B.* 210 Langdon
- †SANDERS, JAMES GLOSBERENNER, Ph. B.; M. A., Assistant Professor of Economic Entomology. *A. H.* 12.
- SCHLATTER, EDWARD BUNKER, Ph. D., Assistant Professor of Romance Languages. *U. H.* 307. 1619 Jefferson
- SCOTT, ROBERT BRUCE, Ph. B., Professor of Political Science. *U. H.* 319; *L. B.* 35. 131 W. Gilman
- SCOTT, WILLIAM AMASA, Ph. D., Director of the Course in Commerce. Professor of Political Economy. *N. H.* 55. 520 N. Pinckney
- SELLERY, GEORGE CLARKE, Ph. D., Director of the Summer Session. Professor of European History. *U. H.* 209. 808 Oakland Ave.
- SHARP, FRANK CHAPMAN, Ph. D., Professor of Philosophy. *U. H.* 106. 27 Mendota Ct.
- SHOWERMAN, GRANT, Ph. D., Professor of Latin. *U. H.* 266. 323 N. Hamilton
- SHUSTER, JOHN WESLEY, B. S., Assistant Professor of Electrical Engineering. *E. B.* 218. 235 W. Gilman
- SKINNER, ERNEST BROWN, Ph. D., Assistant Professor of Mathematics. *U. H.* 255. 210 Lathrop
- *SLAUGHTER, MOSES STEPHEN, Ph. D., Professor of Latin.
- *SLICHTER, CHARLES SUMNER, M. S., Professor of Applied Mathematics.
- SMITH, CHARLES FORSTER, Ph. D., Professor of Greek and Classical Philology. *U. H.* 261 and 263. 1715 Adams Ave.
- *SMITH, HOWARD LESLIE, B. A., LL. B., Professor of Law.

† Appointed February 1, 1910.

* On leave of absence, academic year, 1909-10.

* On leave of absence, academic year, 1909-10.

* On leave of absence, academic year, 1909-10.

- SMITH, HUGH ALLISON, M. A., Professor of Romance Languages. *U. H.* 308. 15 Prospect Ave.
- SMITH, KENNETH GARDNER, B. A., B. S., District University Extension Representative. Milwaukee. 214 Empire Building, Milwaukee
- SMITH, LEONARD SEWELL, C. E., Associate Professor of Topographic and Geodetic Engineering. *E. B.* 109. 939 University Ave.
- SMITH, WALTER MCMYNN, B. A., Librarian. *Lib.* 222. 112 Langdon
- SNOW, BENJAMIN WARNER, Ph. D., Professor of Physics. *Sc. H.* 17. 135 W. Gilman
- *SPENCER, JOHN, V. S., Lecturer in Veterinary Science. *Stock Pavilion.* 320 N. Park
- STEEN, JAMES CLARENCE, Superintendent of Machine Shops. *M. S.* 719 E. Gorham
- STERLING, SUSAN ADELAIDE, M. L., Assistant Professor of German. *N. H.* 31. 109 W. Washington Ave.
- STODDART, CHARLES WILLIAM, Ph. D., Assistant Professor of Soils. *H. P. B.* 305. 1602 Jefferson
- TAYLOR, HENRY CHARLES, Ph. D., Professor of Agricultural Economics. *A. H.* 51. 222 Irving
- THOMAS, CARL CLAPP, M. E., Professor of Steam Engineering. *E. B.* 212. 633 N. Frances
- THORKELSON, HALSTEN JOSEPH BERFORD, M. E., Associate Professor of Steam Engineering. *E. B.* 200. 1526 W. Washington Ave.
- TRESSLER, ALBERT WILLIS, B. A., Inspector of Schools. *U. H.* 119. 446 N. Charter
- TURNEAURE, FREDERICK EUGENE, C. E., Dr. Eng., Dean of the College of Engineering. *E. B.* 106. 166 Prospect Ave.
- TURNER, FREDERICK JACKSON, Ph. D., LL. D., D. Lit., Professor of American History. *Lib.* 123. 629 Frances
- VAN VLECK, EDWARD BURR, Ph. D., LL. D., Professor of Mathematics. *U. H.* 254. 519 N. Pinckney

* Appointed December 1, 1900.

- VOSS, ERNST KARL JOHANN HEINRICH, Ph. D.,
Professor of German Philology. *N. H.*
26. 446 N. Charter
- VOSSKUEHLER, JOSEPH HENRY, M. E., Assist-
ant Professor of Machine Design. *E. B.*
201. 418 Frances
- WAGNER, GEORGE, M. A., Assistant Professor
of Zoology. *Sc. H.* 50. 1901 Jefferson
- WALTON, JAMES HENRI, JR., Ph. D., Assistant
Professor of Chemistry. *C. B.* 108. 419 Sterling Ct.
- WATSON, JAMES WEBSTER, B. S., Assistant Pro-
fessor of Electrical Engineering. *E. B.*
219. 271 Langdon
- WATTS, OLIVER PATTERSON, Ph. D., Assistant
Professor of Applied Electrochemistry.
C. E. B. 106. 418 S. Mills
- WESTERMANN, WILLIAM LINN, Ph. D., Associate
Professor of History. *U. H.* 207. 21 Mendota Ct.
- WHITBECK, RAY HUGHES, B. A., Assistant Pro-
fessor of Geography and Physiography.
Sc. H. 38. 905 W. Johnson
- WHITSON, ANDREW ROBISON, B. S., Professor of
Soils. *H. P. B.* 205. R. F. D. 7
- WILLIAMS, WILLIAM HOLME, B. A., Professor of
Hebrew and Hellenistic Greek. *S. H.* 8.
15 W. Dayton
- WINCHELL, ALEXANDER NEWTON, D. Sc., Pro-
fessor of Mineralogy and Petrology. *Sc.*
H. 31. 218 N. Park
- WITHEY, MORTON OWEN, C. E., Assistant Pro-
fessor of Mechanics. *E. B.* 10. 209 N. Brooks
- WOLL, FRITZ WILHELM, Ph. D., Professor of
Agricultural Chemistry. Chemist of the
Experiment Station. *A. H.* 43. 408 N. Charter
- WOODWARD, CORA STRANAHAN, Adviser of
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- WOOLLEY, EDWIN CAMPBELL, Ph. D., Assistant
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- YOUNG, KARL, Ph. D., Assistant Professor of
English. *U. H.* 367. 803 State

INSTRUCTORS AND ASSISTANTS

ALLEN, FLORENCE ELIZA, Ph. D., Instructor in Mathematics. <i>U. H.</i> 253.	219 Lathrop
ALLEN, RUTH FLORENCE, Ph. D., Assistant in Botany. <i>Sc. H.</i> 47.	450 Charter
ALVORD, KATHARINE SPRAGUE, M. A., Mistress of Chadbourne Hall. Assistant in American History.	Chadbourne Hall
ARKIN, AARON, B. S., Assistant in Pharmacology and Toxicology. <i>C. E. B.</i> 302.	515 Lake
ARMSTRONG, VERMILLION, Assistant in Bacteriology. <i>S. H.</i> 22.	1124 W. Johnson
ARON, ALBERT WILLIAM, M. A., Assistant in German. <i>N. H.</i> 36.	1715 Adams
ASHMUN, MARGARET ELIZA, M. A., Instructor in English. <i>U. H.</i> 361.	310 N. Murray
ASTON, JAMES, Ch. E., Instructor in Chemical Engineering. <i>C. E. B.</i> 105.	1834 Ray
ATKINS, WILLIAM GARRETT, Battalion Sergeant Major, U. S. Army, Retired. Armorer and Assistant to the Commandant. <i>Armory</i> 6.	1227 Mound
ATKINSON, ELIZABETH ELLIOTT, Instructor in Physical Training. <i>Lathrop Hall.</i>	216 N. Carroll
AUGSPURGER, LOUIS FRED, B. A., Assistant in Chemistry. <i>C. B.</i> 206.	1018 Mound
AUSTIN, CHARLES BURGESS, M. A., Assistant in Political Economy. <i>Lib.</i> 118.	1035 University Ave.
BACHMAN, FRED A. MARIE, M. A., Assistant in Botany. <i>Sc. H.</i> 47.	310 Bruen
BAILEY, WILLIAM LOUIS, M. A., Instructor in Political Science. <i>U. H.</i> 324.	237 Langdon
BANNING, BERNICE, B. A., Instructor in Greek.	640 State
BARNES, RUFUS ALEXANDER, B. A., Assistant in Chemistry. <i>C. B.</i> 207.	713 W. Dayton
BARRY, THOMAS A., Ph. B., LL. B., Instructor in Physical Training. <i>Gym.</i>	115 W. Mifflin

BASCOM, LELIA, B. L., Instructor in English.	
U. H. 101.	419 Sterling Ct.
BELL, HERBERT CLIFFORD, Ph. D., Instructor in	
European History. U. H. 206.	803 State
BENKENDORF, GUSTAVUS HENRY, Instructor in	
Dairying. H. S. H. 101.	Hiram Smith Hall
†BERGMAN, MINNIE, Instructor in Voice. As-	
sembly Hall.	402 W. Main
BERKELEY, FRANCES CAMPBELL, M. A., In-	
structor in English. U. H. 363.	616 Lake
*BERNSTEIN, ISAAC, Trainer of University Teams.	
Gym.	1306 W. Dayton
BERRY, OTTO CARTER, B. S., Instructor in Me-	
chanical Drawing. E. B. 303.	414 N. Henry
BILLMAN, IRWIN, B. S., B. L., Assistant in	
American History. U. H. 210.	441 Lake
BLACK, WILLIAM, B. S., Instructor in Steam	
and Gas Engineering. E. B. 25.	126 E. Dayton
BLAKE, GEORGE BARNES, Assistant in Electrical	
Engineering. E. B. 217.	424 Lake
BRANDT, JOSEPH GRANGER, Ph. B., Instructor	
in Latin. U. H. 267.	204 N. Brooks
BREDIN, ELIAS ARNOLD, A. A. G. O., Instructor	
in Music. Assembly Hall.	716 State
BROWNE, WADE HAMPTON, B. A., M. D., In-	
structor in Pathology and Medical Bac-	
teriology. S. H. 43.	1629 Jefferson
BRUNS, FRIEDRICH, Ph. D., Instructor in Ger-	
man. N. H. 35.	423 N. Butler
BUCHANAN, HERBERT EARLE, Ph. D., Instructor	
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BURGESS, HORACE THOMAS, Ph. D., Instructor	
in Mathematics. U. H. 65.	816 W. Dayton
BURRITT, CHARLES GLENN, B. S., Instructor in	
Railway Engineering. E. B. 402.	306 Murray
BYRNE, EUGENE HUGH, B. L., Assistant in Euro-	
pean History. Lib. 123; U. H. 210.	271 Langdon

† Appointed January 18, 1910.

* Appointed January 1, 1910.

*CARTER, FANNY WALBRIDGE, Student Assistant in Geology. <i>Sc. H.</i> 27A.	425 Park
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CATTELL, JAMES LLEWELLYN, B. A., Instructor in Romance Languages. <i>U. H.</i> 309.	217 Langdon
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*CLARK, VINNIE B., Student Assistant in Geol- ogy.	234 Langdon
COOL, CHARLES DEAN, Ph. D., Instructor in Romance Languages. <i>U. H.</i> 309.	1818 Madison
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CURRIE, JAMES NIMROD, M. A., Instructor in Organic Chemistry. <i>C. B.</i> 309.	608 W. Dayton
CURTIS, NORMAN PHILIP, B. S., Instructor in Railway Engineering. <i>E. B.</i> 206.	1216 Spring
CUTLER, JOSEPH ALBERT, B. S., Instructor in Topographic Engineering. <i>E. B.</i> 109.	306 Murray
DAHM, THOMAS MATTHEW, M. A., Assistant in Physics. <i>Sc. H.</i> 23.	820 W. Johnson
DAKE, CHARLES LAURENCE, Student Assistant in Physiography. <i>Sc. H.</i> 27a.	436 Frances
DEIHL, JOSEPH DWIGHT, B. A., Assistant in German. <i>N. H.</i> 36.	208 N. Murray
DELWICHE, OCTAVE JOSEPH, Assistant in Animal Husbandry. <i>Stock Pavilion and Horse Barn.</i>	434 Farm Place
DEMING, HORACE GROVE, M. S., Assistant in Chemistry. <i>C. B.</i> 106.	435 Warren
DIKE, PAUL HARRISON, M. S., Assistant in Physics. <i>Sc. H.</i> 10a.	248 W. Gilman
DISQUE, ROBERT CONRAD, B. L., B. S., Instructor in Electrical Engineering. <i>E. B.</i> 217.	18 W. Gilman

* Resigned February 21, 1910.

* Appointed February 21, 1910.

- DONDO, MATHURIN MARIUS, M. A., Assistant in
Romance Languages. *U. H.* 309. 216 N. Carroll
- DRESDEN, ARNOLD, Ph. D., Instructor in Mathe-
matics. *U. H.* 253. 1120 W. Johnson
- DUDGEON, MATTHEW SIMPSON, B. A., LL. B.,
Instructor in Political Science. *N. H.* 54.
2012 Jefferson
- DU MEZ, ANDREW GROVER, B. S., Assistant in
Pharmaceutical Chemistry. *C. B.* 315. 432 W. Gorham
- ELDREDGE, ELMER ELLSWORTH, B. S. A., Assist-
ant in Agricultural Bacteriology. *A. H.*,
Station Laboratory. 709 University Ave.
- ELLINGSON, EMIL OSCAR, B. S., Assistant in
Chemistry. *C. B.* 105. 419 Murray
- ELLIOTT, GEORGE ROY, Ph. D., Instructor in
English. *U. H.* 366. 616 Lake
- *ENERSON, HILBERT, Assistant in Dairy Labora-
tory. 209 N. Warren
- FEISE, CARL WILHELM RICHARD ERNST, Ph. D.,
Instructor in German. *N. H.* 36. 1715 Adams Ave.
- FORSYTHE, WILLIAM ELMER, M. S., Instructor
in Physics. *Sc. H.* 10a. 325 W. Dayton
- FOX, EDGAR WILSON, Assistant in Dairy Hus-
bandry. *Dairy Barn.* 438 N. Warren
- FULCHER, GORDON SCOTT, M. S., Instructor in
Physics. *Sc. H.* 13. 616 Lake
- FULLER, CALEB ALLEN, Ph. D., Instructor in
Bacteriology. *S. H.* 31. 1633 Madison
- GALLAND, JOSEPH STANISLAS, M. A., Assistant
in Romance Languages. *U. H.* 304. 216 N. Brooks
- GARDNER, EDWARD HALL, M. A., Instructor in
English. *U. H.* 214. 222 Langdon
- GARNER, HARRISON LEVI, B. S., Instructor in
Hydraulic Engineering. *E. B.* 208. 725 University Ave.
- GARRETT, MITCHELL BENNETT, M. A., Assistant
in European History. *Lib.* 123. 230 W. Gilman
- GEE, WILSON PARHAM, M. A., Assistant in Zo-
ology. *Sc. H.* 61. 817 W. Johnson

* Appointed February 28, 1910.

GERMANN, ALBERT FREDERICK OTTAMAR, M. A., Assistant in Chemistry. <i>C. B.</i> 105.	129 N. Bruen
GESELL, GERHARD ADAM, B. A., Assistant in Public Speaking. <i>U. H.</i> 203.	222 Charter
*GESELL, R. A., Student Assistant in Zoology.	222 Charter
*GILLET, CHARLES MASON, B. A., University Editor. <i>U. H.</i> 61.	271 Langdon
†GILLET, ORSON CLARKE, University Editor. <i>U. H.</i> 61.	271 Langdon
GLAETTLI, JOHN JR., B. S., Assistant in Bridge Engineering. <i>E. B.</i> 306.	207 N. Mills
GLOYER, WALTER OSCAR, B. A., Assistant in Botany. <i>Sc. H.</i> 54.	210 N. Brooks
GRAY, LEWIS CECIL, M. A., Assistant in Politi- cal Economy. <i>N. H.</i> 80.	102 Spooner
GRIMES, NATHAN CESNA, M. A., Instructor in Mathematics. <i>U. H.</i> 65.	214 N. Brooks
GRINDE, ANNA McDONALD, B. L., Instructor in Latin.	542 W. Johnson
GUTSCH, MILTON RIETOW, M. A., Assistant in History. <i>U. H.</i> 210.	337 W. Mifflin
HAERTEL, MARTIN HENRY, Ph. D., Instructor in German. <i>N. H.</i> 37.	1927 W. Lawn Ave.
HALL, LELAND BOYLSTON, B. A., Instructor, School of Music. <i>Assembly Hall.</i>	11 W. Gorham
HAMMER, MILBY ROY, B. S., Instructor in Me- chanical Drawing. <i>U. H.</i> 101.	719 University Ave.
HAMMOND, LESTER DAVISON, B. A., Assistant in Chemistry. <i>C. B.</i> 105.	414 N. Henry
*HARRISON, GORDON LESLIE, B. A., Assistant in Physics. <i>Sc. H.</i> 23.	215 Bruen
*HATCH, ROBERT L., Student Assistant in Com- merce.	123 N. Webster
HAUSSMANN, JOHN FRED, Ph. D., Instructor in German. <i>N. H.</i> 35.	1214 W. Johnson
HAYES, JOHN ROBERT, B. A., Assistant in Busi- ness Administration. <i>N. H.</i> 81.	604 Frances

* Appointed February 28, 1910.

* Resigned February 21, 1910.

* Died February 1, 1910.

* Appointed April 1, 1910.

† Appointed February 1, 1910.

HEILMAN, ERNEST ALEXANDER, M. A., Assistant in German. <i>N. H.</i> 36.	1113 W. Johnson
HERRICK, LOUIS ROWELL, M. A., Instructor in Romance Languages. <i>U. H.</i> 309.	217 N. Mills
* HICKS, FRED COLE, Ph. D., Instructor in German. <i>N. H.</i> 36.	1715 Adams
HIGSON, CHARLES ROY, B. S., Instructor in Electrical Engineering. <i>M. S.</i>	311 Murray
HILL, CHARLES WARREN, M. A., Instructor in Chemistry. <i>C. B.</i> 106.	1018 Mound
HOOTON, EARNST ALBERT, M. A., Assistant in Latin. <i>U. H.</i> 269.	214 State
HOPE, LEONA, Instructor in Home Economics. <i>Lathrop Hall.</i>	606 N. Frances
HOVEY, SHIRLEY SEYMOUR, B. S., Assistant in Electrical Engineering. <i>Dynamic Laboratory.</i>	610 N. Frances
INGLIS, DAVID NELSON, M. A., Assistant in French. <i>U. H.</i> 201.	439 Lorch
IVES, FREDERICK WALTER, B. S., Instructor in Mechanical Drawing. <i>E. B.</i> 303.	740 Langdon
*JACKSON, HARTLEY HARRAD THOMPSON, M. A., Assistant in Zoology. <i>Sc. H.</i> 61.	315 N. Lake
JOHNSON, JAMES, B. S. A., Assistant in Horticulture. <i>H. P. B.</i> 303.	130 N. Mills
JOHNSON, PHILLIP HAFFORD, B. S., Assistant in Electrical Engineering. <i>M. S.</i>	18 W. Gilman
JOHNSON, SIDNEY EGBERT, B. S., Instructor in Mechanics. <i>E. B.</i> 10.	408 N. Frances
JOHNSTONE, ALBERT HENRY, B. A., Instructor in Public Speaking. <i>U. H.</i> 204.	712 State
JOLIVETTE, HALLY DELILIA MARY, M. A., Assistant in Botany. <i>Sc. H.</i> 54.	450 Charter
*JONES, RAYMOND WATSON, Assistant in German.	1715 Adams
KARTAK, FRANZ AUGUST, B. S., Assistant in Electrical Engineering. <i>C. E. B.</i> 202.	124 W. Dayton
KENDELL, WILLIAM HENRY, B. S., Assistant in Pharmacy. <i>C. B.</i> 304.	916 W. Dayton

* Resigned February 28, 1910.

* Appointed February 28, 1910.

- KERSCHENSTEINER, MARK JOSEPH, B. A., Assistant in Business Administration. *N. H.* 81. 432 W. Gorham
- KEYSER, CLARENCE, B. S., Assistant in Physics. *Sc. H.* 23. 608 W. Dayton*
- *KING, WILLFORD ISBELL, Assistant in Political Economy. 112 N. Bruen
- KLEIN, DAVID, M. A., Instructor in Chemistry. *C. B.* 107. 1018 Mound
- KLEINHEINZ, FRANK, Instructor in Animal Husbandry. *Sheep Barn.* 412 N. Charter
- KOENIG, ALFRED EDWARD, B. A., Assistant in Chemistry. *C. B.* 105. 214 N. Lake
- KOMMERS, JESSE BENJAMIN, B. S., Instructor in Mechanics. *E. B.* 20. 712 Harrison
- KOWALKE, OTTO LOUIS, Ch. E., Instructor in Chemical Engineering. *C. E. B.* 104. 271 Langdon
- KRAUSKOPF, FRANCIS CRAIG, Ph. D., Instructor in Chemistry. *C. B.* 107. 201 Murray
- KUNZE, EDWARD JOSEPH, B. S., Instructor in Steam and Gas Engineering. *E. B.* 25. 901 University Ave.
- LAMBECK, ARTHUR HUGO, B. A., Assistant in Political Science. *U. H.* 319. 202 Bernard Ct.
- LATHROP, JAMES G., Instructor in Physical Training. *Gym.* 406 N. Henry
- †LEARNED, GRACE, Instructor in Physical Training. 1019 University Ave.
- LITTLETON, JESSE TALBOT, M. A., Assistant in Physics. *Sc. H.* 10. 608 W. Dayton
- *LLOYD-JONES, ORREN, B. S. A., Assistant in Agricultural Chemistry. 221 N. Bassett
- LOGAN, HAROLD EDWIN, Student Assistant in Business Administration. *N. H.* 76. 430 N. Frances
- LOMER, GERHARD RICHARD, M. A., Instructor in English. *U. H.* 357. 613 N. Frances
- LOOMIS, ALICE MARIE, B. S., Assistant in Home Economics. *A. H.* 24. 501 N. Henry

* Appointed February 21, 1910.

† Appointed March 1, 1910.

* Appointed January 1, 1910.

- LOWRIE, SELDEN GALE, M. A., Assistant in
Political Science. *Capitol* 417. 139 W. Gilman
- LUNT, WILLIAM EDWARD, Ph. D., Instructor in
History. *U. H.* 206. 419 Sterling Ct.
- MCALLISTER, FRED, M. A., Assistant in Botany.
Sc. H. 66. 216 Lake
- McCULLOUGH, FRANCIS MICHAEL, B. S., In-
structor in Mechanics. *E. B.* 202. 2014 Monroe
- *MCCHESNEY, HARLAN D., Instructor in Physical
Training. Gymnasium
- MAC DONALD, VANETTA, Herbarium Assistant,
Sc. H. 51. 542 W. Johnson
- MACGILL, CAROLINE ELIZABETH, B. A., In-
structor in Political Economy. *U. H.* 154.
419 Sterling Ct.
- MACGREGOR, FORD HERBERT, B. A., Instructor in
Political Science. *N. H.* 101. 215 Brooks
- McKITRICK, REUBEN, B. A., Assistant in Po-
litical Science. *Capitol* 417. 924 Clymer Pl.
- *MAIN, GILBERT, Instructor in Physical Train-
ing. *Gym.* Gymnasium
- MALDE, OLE GUSTAVUS, Assistant in Charge of
Cranberry Investigation. *H. P. B.* 304.
Agricultural Hall
- MANCHESTER, FREDERICK ALEXANDER, M. A.,
Instructor in English. *U. H.* 214. 221 S. Mills
- MANN, CHARLES AUGUST, B. S., Assistant in
Pharmacy. Leader of Regimental Band.
C. B. and Armory. 924 Clymer Pl.
- MARKEY, WILLIAM ERWIN, Assistant in Animal
Husbandry. *A. H.* 48. 55 Agricultural Hall
- MARQUIS, JOHN CLYDE, M. S., Editor of Agri-
cultural Publications. Instructor in Agri-
cultural Journalism. *A. H.* 26. 1812 Ray
- MARTY, GOTTLIEB, Instructor in Foreign Cheese-
making. *H. S. H.* 625 W. Johnson
- MATHEWS, JOSEPH HOWARD, Ph. D., Instructor
in Physical Chemistry. *C. B.* 317. 419 Sterling Ct.

* Appointed March 21, 1910.

* Resigned February 19, 1910.

MEAD, WARREN JUDSON, M. A., Instructor in Geology. <i>Sc. H.</i> 27A.	1811 Jefferson
MEEK, WALTER JOSEPH, M. A., Instructor in Physiology. <i>C. E. B.</i> 213.	810 W. Johnson
MELHUS, IRVING E., B. S., Assistant in Botany. <i>Sc. H.</i> 66.	430 N. Lorch
*MERRILL, HARRIET BELL, M. S., Assistant in Zool- ogy. <i>Sc. H.</i> 43.	237 Langdon
MICHELL, ROBERT BELL, M. A., Instructor in Romance Languages. <i>U. H.</i> 306.	450 Charter
MILLER, ARTHUR HERBERT, B. S., Instructor in Mechanics. <i>E. B.</i> 20.	309 Lake
MILLER, PAUL GERARD, Assistant in Romance Languages. <i>U. H.</i> 309.	1221 Mound
MILWARD, JAMES GARFIELD, M. S. A., Instructor in Horticulture. <i>H. P. B.</i> 105.	1217 W. Dayton
MOOTS, ELMER EARL, M. S., Assistant in Mathematics. <i>U. H.</i> 65.	816 W. Dayton
MORGAN, BAYARD QUINCY, Ph. D., Instructor in German. <i>N. H.</i> 36.	708 State
MOULTON, ELTON JAMES, B. S., Instructor in Mathematics. <i>U. H.</i> 65.	1610 Madison
MUEHLSTEIN, WILLIAM CHARLES, B. S., Assist- ant in Railway Engineering. <i>E. B.</i> 206.	222 Brooks
NAPIER, JOHN MCGUIRE, M. S., Assistant in Agronomy. <i>Agr. B.</i> 26.	314 Bruen
NEBEL, WALTER, B. S., Assistant in Chemistry. <i>C. B.</i> 105.	331 W. Mifflin
NEIDIG, WILLIAM JONATHAN, B. A., Instructor in English. <i>U. H.</i> 366.	418 Frances
*NEILSON, ALLEN SAMUEL, Instructor in English.	222 Langdon
NELSON, OLIVER OTTO, B. A., Instructor in Bacteriology. <i>S. H.</i> 33a.	126 S. Hancock
*NESPOR, EDENEK, Assistant in Physical Train- ing. <i>Gym.</i>	Gymnasium
NEUMANN, JOHN XAVIER, Student Assistant in Bacteriology. <i>S. H.</i> 31.	901 University Ave.

* Appointed Feb. 28, 1910.

* Appointed Feb. 28, 1910.

* Appointed January 1, 1910.

†OLSON, DAVID, B. A., Student Assistant in Geology.	303 Lathrop
ORTH, HERBERT DENNY, B. S., Instructor in Me- chanical Drawing. <i>E. B.</i> 303.	932 Clymer Pl.
‡ORTON, CLAYTON ROBERTS, Laboratory Assistant in Plant Pathology.	132 Lathrop
OTTO, MAXWELL CHARLES, M. A., Assistant in Philosophy. <i>U. H.</i> 106.	316 N. Lake
OWEN, RAY SPRAGUE, B. S., Instructor in Civil Engineering. <i>E. B.</i> 21.	R. F. D. 7
*OWEN, RALPH WOODLAND, B. Lit., Assistant in English. <i>U. H.</i> 214.	424 N. Pinckney
PARKER, EUSTACE EDWIN, B. S., Instructor in Structural Engineering. <i>E. B.</i> 306.	223 S. Mills
PARRY, JAMES WILLIAM, B. S., Instructor in Engineering.	214 Empire Bldg., Milwaukee
PERROW, EBER CARLE, Ph. D., Instructor in English. <i>U. H.</i> 366.	456 W. Mifflin
PETERSON, MARIUS SMITH, Student Assistant in Physiology. <i>C. E. B.</i>	610 Lake
PETERSON, PETER POWELL, Ph. D., Instructor in Soils. <i>H. P. B.</i> 103.	221 N. Bassett
PETERSON, WILLIAM HAROLD, M. A., Assistant in Agricultural Chemistry. <i>A. H.</i> 59.	414 N. Henry
PRICE, JOHN REESE, B. S., Instructor in Elec- trical Engineering. <i>M. S.</i>	15 S. Bassett
*PRICE, WILLIAM HYDE, Ph. D., Instructor in Political Economy. <i>U. H.</i> 212.	1631 Madison St.
PRITCHARD, FREDERICK J., B. S., Assistant in Botany. <i>Sc. H.</i> 54.	118 N. Bassett
REGAN, ALICE, Instructor in Piano. <i>Assembly Hall 2.</i>	321 S. Hamilton
REINHARD, EUGEN, Ph. D., LL. D., Instructor in German. <i>U. H.</i> 101.	652 E. Gorham
RIEDER, RUDOLF THEODORE, Student Assistant in German. <i>N. H.</i> 36.	1309 Morris

† Appointed December 1, 1909.

‡ Appointed February 1, 1910.

* Appointed February 21, 1910.

* Appointed February 21, 1910.

- ROEBUCK, JOHN RANSOM, Ph. D., Instructor in
Physics. *Sc. H.* 13. 1226 Mound
- ROGERS, AUGUSTUS JAMES, Jr., M. S., Instructor
in Horticulture. *H. P. B.* 202. Horticulture-Physics Building
- ROOT, WINFRED TREXLER, Ph. D., Instructor
in American History. *U. H.* 208. 419 Sterling Ct.
- ROSENBERG, PHILIP, B. S., Assistant in Physics.
Sc. H. 23. 608 W. Dayton
- *ROWSE, W. C., Instructor in Steam and Gas
Engineering 302 Breeze Terrace
- RUSSELL, GILBERT ARCHIBALD, Ph. G., Assist-
ant in Botany. *Sc. H.* 51. 1108 W. Johnson
- SANDBERG, MRS. INGA, B. M., Instructor in
Piano. *Assembly Hall* 1. 21 E. Wilson
- SANDELL, HARVEY, Assistant in Soils. *H. P. B.*
103. 1311 Morris
- SANFORD, HERBERT BROOKS, B. S., Instructor in
Electrical Engineering. *M. S.* R. F. D. 6
- *SCHAFFRATH, WILLIAM, B. A., Assistant in
German. *N. H.* 36. 424 N. Charter
- SCHMITT, BERNADOTTE EVERLY, B. A., Assistant
in European History. *Lib.* 123. 119 W. Gorham
- SCOTT, ALMERE LOUISE, Assistant, Debating and
Public Discussion. *U. H.* 154. 422 W. Dayton
- SEARS, JESSE BRUNDAGE, B. A., Instructor in
Education. *U. H.* 118. 426 Lorch
- SECRIST, HORACE, M. A., Assistant in Political
Economy. *N. H.* 51. 318 Lake
- SHAW, LEON IRWIN, M. S., Assistant in Chem-
istry. *C. B.* 105. 271 Langdon
- SHEALY, EDWARD MARVIN, B. S., Instructor in
Steam and Gas Engineering. *E. B.* 204½.
2134 W. Lawn Ave.
- SHERWOOD, ROBERT GRIFFIN, B. A., Assistant in
Physics. *Sc. H.* 23. 230 W. Gilman
- *SHIBATA, GENKWAN, B. A., Assistant in Com-
merce. *U. H.* 104. 215 Murray

* Appointed February 21, 1910.

* Resigned February 28, 1910.

* Appointed November 15, 1909.

SIEVERS, FRED JOHN, Assistant in Soils. <i>H. P.</i> <i>B.</i> 206.	128 N. Mills
SIMMERS, CHARLES LUTHER, B. A., Assistant in Education. <i>U. H.</i> 120.	126 E. Dayton
SIMONS, JASPER EDGAR, Student Assistant in Pharmacy. <i>C. B.</i> 216.	621 Lake
SIMPSON, ORSON L., B. S., Assistant in Physics. <i>Sc. H.</i> 23.	130 N. Mills
SIMPSON, THOMAS MARSHALL, B. A., Instructor in Mathematics. <i>U. H.</i> 253.	1029 University Ave.
SMITH, BERTHAM GARNER, B. A., Instructor in Zoology. <i>Sc. H.</i> 62.	414 N. Lake
SMITH, GILBERT MORGAN, B. S., Assistant in Botany. <i>Sc. H.</i> 47.	932 Clymer Pl.
SMITH, GLEN EDWARD, B. S., Assistant in Elec- trical Engineering. <i>E. B.</i> 219.	715 W. Dayton
STARCH, DANIEL, Ph. D., Instructor in Psychol- ogy. <i>U. H.</i> 13.	230 W. Gilman
STEENBOCK, HARRY, B. S. A., Assistant in Agri- cultural Chemistry. <i>A. H.</i> 59.	320 Warren
STEIDTMANN, EDWARD, M. A., Instructor in Min- eralogy. <i>Sc. H.</i> 27C.	308 W. Main
STEINFORT, SELMA ALVINA, B. L., Assistant in German. <i>N. H.</i> 36.	2002 Monroe
†Stern, Susanna, Assistant in Laboratory of Clinical Medicine.	821 State
STEVE, WILLIAM FREDERICK, M. A., Instructor in Physics. <i>Sc. H.</i> 23.	1216 W. Johnson
STONE, ALDEN LESCOMBE, Instructor in Agron- omy. Seed Inspector. <i>Agr. B.</i> 29.	1614 Hoyt
STOUT, ARLOW BURDETTE, B. A., Instructor in Botany. <i>Sc. H.</i> 72.	924 Clymer Pl.
STREET, IDA MARIA, M. A., Assistant in English. <i>U. H.</i> 214.	915 W. Johnson
SYLVESTER, WALTER WILLIAM, B. S., Assistant in Agricultural Engineering. <i>A. E. B.</i> 108.	441 Lorch
TARRELL, ARCH LEROY, B. A., Assistant in Physics. <i>Sc. H.</i> 23.	421 W. Gilman

† Appointed February 21, 1910.

TEN EYCK, EDWARD HANLAN, Instructor in Physical Training. <i>Gym.</i>	312 Lake
TERRY, EARLE MELVIN, M. A., Instructor in Physics. <i>Sc. H. 9.</i>	409 N. Bruen
TORMEY, JOHN LAWLESS, B. S. A., Instructor in Animal Husbandry. <i>Stock Pavilion.</i>	320 Warren
*TOTMAN, WARD MILLS, Assistant in Dairy Husbandry. <i>H. S. H. 303.</i>	1203 W. Dayton
TOTTINGHAM, WILLIAM EDWARD, M. S., Instructor in Agricultural Chemistry. <i>A. H. 6a.</i>	414 N. Henry
*TRELEVEN, JOHN EDWARD, Student Assistant in Business Administration. <i>N. H.</i>	901 University Ave.
TRUOG, EMIL, B. S. A., Assistant in Soils. <i>H. P. B.</i>	314 N. Bassett
*TUCKER, R. H., Assistant in Political Economy.	8 W. Gilman
VAN DUSEN, HARMON LOUIS, Ph. B., Instructor in School Management.	1916 Jefferson
VAN DUSEN, SARA HEIMDAL, B. S., Instructor in Elementary Branches. <i>U. H. 154.</i>	1916 Jefferson
VEERHUSEN, ELSEBETH, Ph. D., Instructor in German. <i>N. H. 31.</i>	414 N. Livingston
WAHL, HARRY ROSWELL, B. A., Assistant in Anatomy. <i>Sc. H. Room B.</i>	14 N. Henry
WALES, JULIA GRACE, M. A., Assistant in English. <i>U. H. 214.</i>	616 Lake
WALSTER, HARLOW LESLIE, B. S. A., Instructor in Soils. <i>H. P. B. 105.</i>	313 N. Mills
WATT, HOMER ANDREW, Ph. D., Instructor in English. <i>U. H. 361.</i>	1113 W. Johnson
WEBER, AUGUST WILLIAM, Ph. M., Assistant in Education. <i>U. H. 120.</i>	1822 W. Lawn
WEIDNER, CARL ROBERT, C. E., Instructor in Hydraulic Engineering. <i>Hyd. Lab.</i>	18 W. Gilman
WEIR, WILBERT WALTER, Assistant in Soils. <i>H. P. B. 205.</i>	1530 University Ave.
WEST, ALLEN BROWN, B. A., Assistant in Latin and European History. <i>U. H. 210.</i>	230 W. Gilman

* Resigned February 28, 1910.

* Appointed February 21, 1910.

* Resigned April 1, 1910.

- WHITE, FRANK, B. S., Assistant in Agricultural Engineering. *A. E. B.* 108. 919 W. Johnson
- WILCOX, WENDELL GARRETT, Ph. D., Instructor in Analytical Chemistry. *C. B.* 209. 271 Langdon
- WILLIAMS, FRANK ERNEST, Student Assistant in Geology. *Sc. H.* 27. 514 W. Washington
- WOLFENSON, LOUIS BERNARD, Ph. D., Instructor in Hebrew and Hellenistic Greek. *S. H.* 7. 1228 Mound
- WOLFF, HENRY CHARLES, Ph. D., Instructor in Mathematics. *U. H.* 65. 202 Brooks
- WOOD, LEWIS HUNGERFORD, B. S., Instructor in Mechanical Drawing. *E. B.* 303. 1012 Jenifer
- WOOLLEY, JOSEPH W., B. S., Instructor in Mechanical Engineering. *U. H.* 101. 220 W. Washington Ave.
- WRIGHT, WILLIAM HARMON, M. S., Assistant in Bacteriology. *A. H.* 39. 1708 Jefferson
- WRIGHT, WILLIAM KELLEY, Ph. D., Instructor in Philosophy. *U. H.* 108. 248 Langdon
- WYMAN, CLAIRE STETSON, Instructor in Gymnastics. *Lathrop Hall.* 310 Murray
- YOUNG, EARLE BURDETT, Ph. B., Assistant in Physics. *Sc. H.* 23. 711 W. Johnson
- *ZARFOS, L. NORMAN, Instructor in Physical Training. *Gym.* Gymnasium
- ZDANOWICZ, CASIMIR DOUGLASS, Ph. D., Instructor in Romance Languages. *U. H.* 307. 1818 Madison
- ZEIDELHACK, FELIX STEPHEN, Instructor in Physical Training. *Gym.* 1029 University Ave.

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- DUDLEY, WILLIAM HENRY, B. A., Assistant Librarian. 1909 Regent

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BURKE, LAURANCE CHARLES, B. L., Library Assistant.	901 W. Johnson
CODDINGTON, HESTER, Head Cataloguer.	935 University Ave.
DAVIDSON, FLORA NEIL, B. L., Library Assistant.	714 State
GROVER, ARLENE, B. L., Library Assistant.	1039 University Ave.
KNUDSON, AGNES CAROLINE, B. A., Library Assistant.	1016 Jenifer
MCCULLOCH, ISABELLA JANE, B. L., B. L. S., Library Assistant.	935 W. Johnson
MINER, RUTH PAULINE, B. A., Library Assistant.	217 S. Hamilton
MINER, SARAH HELEN, Library Assistant.	1113 University Ave.
PYRE, AMELIA FRANCE, B. L., Library Assistant.	R. F. D. 6
SANFORD, DELIA C., B. L. S., Library Assistant.	311 Brooks
SCHAEFER, ELLEN MARY, B. L. S., Library Assistant.	416 N. Murray
SKIDMORE, STANLEY CLARENCE, Library Assistant.	823 Chandler
STEINKE, LAURA ANNA, B. A., Library Assistant.	1033 W. Johnson
BRIGGS, MRS. SOPHIA M., B. L., Librarian of the Law Library. L. B.	134 W. Gorham
HEAN, CLARENCE SCOTT, Librarian of the Agricultural Library. A. H.	R. F. D. 7

ASSISTANTS, STATE HYGIENIC LABORATORY

BAUMBACH, FREDERICK LOUIS, B. A., Assistant, State Hygienic Laboratory. S. H. 48.	500 W. Johnson
BRESEE, EMILY MAY, B. A., Assistant Chemist, Feed and Fertilizer Inspection. A. H. 40.	428 N. Lake
DAVIES, LLEWELLYN RHYS, B. S. A., Assistant in Dairy Tests and Feed Fertilizer Inspection. A. H. 43.	437 Frances

- HAMMER, BERNARD WERNICK, B. S. A., Bacteriologist, State Hygienic Laboratory. *S. H.* 48. 1607 Adams
- JURJENS, JOHN CHRISTIAN, Assistant in Feed and Fertilizer Inspection. *A. H.* 40. 422 N. Henry
- MORRIS, WILLIAM EARL, B. S. A., Assistant in Feed and Fertilizer Inspection. *A. H.* 43. 722 W. Johnson
- TULLY, EDWARD JOSEPH, B. S., Sanitary Chemist, State Hygienic Laboratory. *S. H.* 48. 1317 Spring

INSTRUCTORS AND ASSISTANTS IN SHOP PRACTICE

- DABNEY, WILLIAM LYLE, Instructor in Mechanical Practice. *M. S.* 438 Frances
- *DORRANS, JAMES MORGAN, Instructor in Patternmaking. 1020 E. Johnson
- GABRIEL, PETER JACOB, Assistant in Forge Room. *M. S.* 521 State
- MATTERN, LOUIS, Instructor in Forge Practice. *M. S.* Trumpf Hotel
- SLADKY, PAUL, Instructor in Mechanical Practice. *M. S.* 712 W. Dayton
- †WOOD, BURTON SAMUEL, Instructor in Patternmaking. *M. S.* 308 N. Mills

OTHER OFFICERS

- McCAFFREY, MAURICE ERVE, Secretary of the Regents. *Adm. B.* 1904 Jefferson
- HIESTAND, WILLIAM DIXON, University Registrar and Secretary of the Faculty. *U. H.* 158. 16 W. Gorham
- FEWSON, EDNA, Purchasing Agent. *Adm. B.* 237 Langdon
- McCONNELL, ALBERT WILSON, Superintendent of Buildings. *Adm. B.* 817 W. Johnson

* Appointed January 1, 1910.

† Resigned January 1, 1910.

PEABODY, ARTHUR. Supervising Architect. <i>Adm. B.</i>	502 N. Henry
PICKARTS, LUCIEN JULIUS, Bursar of the Regents. <i>Adm. B.</i>	429 Park
TAYLOR, MRS. ROWENA HARMON. Matron.	Chadbourne Hall
CAMP, ELIZABETH FRANCES. B. A.. Matron of Lathrop Hall. <i>Lathrop Hall.</i>	616 Lake

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

- Accredited Schools and Appointments*—Professor E. C. Elliott, chairman; Professor Tressler, secretary; Professors Bassett, Chase, M. B. Evans, Fiske, Hatch, Martin, Phillips, and Skinner.
- Athletic Council (elected)*—Mr. Ten Eyck, chairman; Professors C. E. Allen, Hart, Laird, Mack.
- Board of Editors of the Bulletin*—Professor W. M. Smith, chairman; Professor Bleyer, secretary; Mr. Gillett, editor; Professors Adams, Marshall, Mead, Olson, Owen, Lighty, and Mr. Lunt.
- Censor of Student Publications*—Professor Dickinson.
- Conference with Regents (elected)*—Professors Bardeen, Birge, Comstock, Harper, Hohlfeld, Reinsch, Richards, Russell, W. A. Scott, Turneure, and President Van Hise.
- Discipline*—Professor Hubbard, chairman; the deans, *ex-officio*; Professors Commons, Cook, Farrington, Thorkelson, and Mrs. Woodward in all cases relating to women.
- Dramatic Organizations*—Professor Lyman, chairman; Professors Beatty, Bradley, Sterling, and Mrs. Woodward.
- Graduate School*—Professor Comstock, chairman; Professors Birge, Cunliffe, Ely, Kahlenberg, Leith, McGilvary, Mendenhall, Ross, Sellery, *ex-officio*, H. A. Smith, Thomas, Turner, Whitson, and Van Vleck.
- Honorary degrees*—Professor C. F. Smith, chairman; Professors Birge, Richards, Russell, Turneure, and Comstock.
- Improvement in Organization (elected)*—Professors Babcock, Gilmore, Harper, Hohlfeld, Kahlenberg, Loevenhart, Mack, Munro, Pence, Reinsch.
- Indexing Publications*—Professor Roedder, chairman; Professors Christie, Ingersoll, and Kind.

Lecture—Professor Jastrow, chairman; Professors Birge, Dodge, Holmes, E. C. Meyer, J. G. Moore and Root.

Library—President Van Hise, Professor W. M. Smith, *ex-officio*, (elected)—Professors Bardeen, Hohlfeld, Maurer, McGilvary, Munro, W. A. Scott, and Showerman.

Loans and Undergraduate Scholarships—Professor Olson, chairman; Professors Dowling, Gay, Otis, R. B. Scott, and Woodward.

Musical Organizations—Professor Luening, chairman; Professors Katherine Allen, Blackwelder, Sammis and Bredin.

Press Bulletin—Professor Bleyer.

Public Functions—Professor Olson, chairman; Professors Burgess, Lyman, W. U. Moore, W. M. Smith, and Mr. Marquis.

Rooms and Time Tables—Professor Goodnight, chairman; Professors Denniston, Frost, Stoddart, Thorkelson, Walton, Young, and Mr Bredin.

Social Affairs—Professor Gilmore, chairman; Professors Beebe, Fish, Mayhew, McCoy, Pyre, and Mrs. Woodward.

Training of Teachers—Professor E. C. Elliott, chairman; Professors Bassett, Birge, Evans, Hatch, Lenher, O'Shea, Sharp, Westermann, and Whitbeck.

University Hygiene—Professor Ravenel, chairman; Professors Bunting, Dobson, Erlanger, Frost, and Loevenhart.

CHAIRMEN OF DEPARTMENTS

College of Letters and Science

Anatomy,	PROFESSOR BARDEEN.
Astronomy,	PROFESSOR COMSTOCK.
Bacteriology,	PROFESSOR RAVENEL.
Botany,	PROFESSOR HARPER.
Chemistry,	PROFESSOR KAHLENBERG.
Education,	PROFESSOR O'SHEA.
English,	PROFESSOR CUNLIFFE.
Geology,	PROFESSOR LEITH.
German,	PROFESSOR HOHLFELD.
Greek,	PROFESSOR C. F. SMITH.
Hebrew and Hellenistic Greek,	PROFESSOR WILLIAMS.
History,	PROFESSOR MUNRO.
Latin,	PROFESSOR SHOWERMAN.
Mathematics,	PROFESSOR VAN VLECK.
Music,	PROFESSOR LUENING.
Pharmacy,	PROFESSOR KREMERS.
Philosophy,	PROFESSOR MCGILVARY.
Physics,	PROFESSOR SNOW.
Physiology,	PROFESSOR ERLANGER.
Political Economy,	PROFESSOR ELY.
Political Science,	PROFESSOR R. B. SCOTT.
Public Speaking,	ASSOCIATE PROFESSOR LYMAN.
Romance Languages,	PROFESSOR H. A. SMITH.
Scandinavian Languages,	PROFESSOR OLSON.
Zoology,	ASSISTANT PROFESSOR HOLMES.

THE UNIVERSITY OF WISCONSIN

INTRODUCTION

HISTORICAL SKETCH

The first steps toward the establishment of a university in Wisconsin were taken in 1836, the first year of the territory. The estimated population of the territory at this time was about 22,000, of which probably one half was in the country west of the Mississippi River which had been included in Wisconsin Territory for the purpose of temporary government. With this sparse pioneer population, it is probable that little thought would have been given to the establishment of a university had it not been the policy of the federal government to set aside a tract of land in each of the new territories for the benefit of a seminary of learning.

No reservation having been made for this purpose in the act under which the territory of Wisconsin was organized, Henry Dodge, the first territorial governor, in his first message, recommended that congress be asked for the donation of one township of land, to be sold, and the proceeds devoted to the establishment of an academy for the education of youth. In anticipation of such application to congress, the legislature passed an act (approved Dec. 8, 1836) providing for the establishment at Belmont, where the first legislature was then in session, of "a university for the purpose of educating youth, the style, name, and title whereof shall be the Wisconsin University." The act provided for the government of the University by twenty-one trustees, named in the act, of whom the governor was to be one. Nothing further was done at this time, however.

Madison had been selected as the capital of the territory at the first session of the legislature, but pending the erection of the capitol buildings, the second session was held at Burling-

ton, now in Iowa. At this session, the legislature, recognizing that Madison, by its location and natural beauties, was admirably fitted to be the site of the proposed university, passed an act (approved Jan. 19, 1838) which superseded the act of 1836, and which provided that there should be established "at or near Madison, the seat of government, a university for the purpose of educating youth, the name whereof shall be the University of the Territory of Wisconsin." The government was to be by a board of twenty-one visitors, named in the act and including the governor and other territorial officers. Immediately upon the passage of this act, the legislature adopted a resolution directing the territorial delegate in congress "to ask of the Congress of the United States an appropriation in money of \$20,000 for the erection of the buildings of the said university and also to appropriate two townships of vacant land for its endowment." By act approved June 12, 1839, congress authorized the secretary of the treasury "to set apart and reserve from sale out of the public land within the territory of Wisconsin, not exceeding two townships for the use and support of a university within said territory." Congress did not, however, make the appropriation of money which had been asked.

The population of the territory was growing rapidly. By act of congress of June 12, 1838, the country west of the Mississippi River was organized into the separate territory of Iowa and set off from Wisconsin on July 4 of that year. This left Wisconsin with the Mississippi as its western boundary and an estimated population of about 18,000. Congress having failed to appropriate money for the university buildings and the territorial legislature not feeling justified in making such expenditure, the establishment of the University was delayed until after the admission of Wisconsin into the Union. Meanwhile the board of visitors kept up an organization, and the legislature provided for the location of the two townships or 46,080 acres of university lands.

Wisconsin was admitted to statehood on May 29, 1848, with a population of about 250,000. In accordance with the provisions of the new constitution, the legislature, by act, approved July 26, 1848, provided that there should be established "at or near the village of Madison, an institution of learning under the name and style of the University of Wisconsin:" the government to

be by a board of regents to be elected by the legislature. It was under this act that the University was organized.

In accordance with the provisions of the enabling act of Aug. 6, 1846, the title to the university lands vested in the state upon its admission. The constitution provided for the sale of these lands after their appraisal, subject only to the qualification that they might be withheld from sale when the commissioners should deem it expedient: (Sec. 8, Art. 10.) The proceeds of these lands were to constitute the university fund, from the income of which the University was to be supported.

The regents held their first meeting in October, 1848. The schools of the new state not being sufficiently advanced to fit for entrance to the University, a preparatory department was provided for to open in February, 1849, under the charge of John W. Sterling, a graduate of the University of New Jersey (Princeton). John H. Lathrop, a graduate and afterwards a tutor of Yale College, was called from the presidency of the University of Missouri to become Chancellor of the University. He was formally inaugurated January 16, 1850. College Hill was early acquired as a site for the University. It was partially included in the purchase of the Vanderpool tract of 157 acres; the remainder was secured by exchange and purchase. About fifty acres, including College Hill, was destined for the site of the University. The remainder of the property was laid out into 174 village lots and 12 five acre tracts. The plans for the University contemplated a main edifice on the crest of the hill, an avenue 240 feet wide from the main edifice to the east line of the grounds, and four dormitories lower down the hill, two on each side of the avenue. North Hall, the first university building, was opened in the fall of 1851, having been constructed from a loan authorized by the legislature.

As it was the evident expectation at this time that the University was to depend solely upon its fund for its income, the regents were desirous of obtaining a maximum fund. The first appraisal of university lands was found to be under \$3.00 an acre. At the request of the regents, the legislature in 1850, set a minimum price of \$10 an acre upon the university lands, reducing this, however, to \$7.00 an acre in 1851. It had been expected that the fund would grow rapidly. On the contrary, the sales of university lands almost ceased, and the fund remained

stationary at about \$25,000. The income from this fund was only sufficient to pay the interest on the loan, and the University was seriously embarrassed. It became necessary to sell the town lots and the five acre tracts in order to provide running expenses. The lots produced a total of some \$12,500, or about \$7,500 more than the original cost of the whole property. Meanwhile, as it was imperative that an increased revenue be provided for the university, the legislature in 1852 provided for the reappraisal of the university lands with a minimum valuation of \$3.00 an acre. Though not willing to make a direct appropriation for the benefit of the University, the state legislature took steps which resulted in the University's securing a second land grant. The federal government had granted to the state 72 sections of salt springs lands. No salt springs were to be found in Wisconsin, however, and as early as 1848 the legislature had requested congress to permit the selection of an equivalent amount of other lands. Congress had taken no action in the matter. By joint resolution of Jan. 19, 1851, the legislature renewed its request but asked that the grant be made for the benefit of the University. Congress complied with this request by act of Dec. 15, 1854, and provided that the land so granted "be sold in such manner as the legislature may direct for the benefit and in aid of the University."

The wording of this grant suggests that it was intended to be a measure of relief to the University. Had it not been for the request of the legislature, congress would undoubtedly have made this grant to the state, for its own use. This grant may, therefore, be considered as the first important gift, though indirectly accomplished, of the state to the University.

The revaluation of the university lands on the lower basis, stimulated their sale and by the end of the year 1853 the university fund had increased to over \$100,000. The regents decided upon the erection of the second dormitory, "which should be plain and substantially constructed, with a taste too severe to sacrifice utility to ornament." The legislature authorized the loan of \$15,000 for this purpose and South Hall was built, being completed in 1855.

On July 26, 1854, the University graduated its first class, consisting of Levi Booth and Charles T. Wakeley. At this time the faculty consisted of Chancellor Lathrop, occupying the chair

of ethics, civil polity, and political economy, Professor Sterling, who taught mathematics, natural philosophy, and astronomy, Obadiah M. Conover, professor of ancient languages and literature, and Stephen H. Carpenter, tutor. The attendance was forty-one, exclusive of fifteen students in the preparatory course.

The sales of university lands progressed rapidly and by the close of 1854 the fund amounted to \$161,000 with only 6,000 acres of the first land grant remaining unsold. The regents announced in their report for this year that "the institution is now emerging from the embarrassments attendant on the period of converting a land endowment into a productive fund and erecting the buildings." By the end of 1856 the fund had grown to \$310,000, most of the second grant having been sold. The increased attendance now made the erection of the main building necessary. For this purpose the legislature authorized a loan in 1857, from the principal of the university fund. Almost from the outset of this undertaking the University experienced serious embarrassment. The panic of 1857 swept over the country. Difficulty was experienced in raising money for the completion of the building and the regents were forced to borrow at the high rate of ten per cent. To add to its difficulties, thousands of acres of university lands were forfeited by the purchasers, thus reducing the fund and greatly impairing the income of the University. The panic was followed by the war and the forfeiture of lands continued. In the early sixties it became necessary to look forward to the repayment, in annual installments, of the principal of the building loans, which aggregated about \$100,000. Salaries were cut and pinching economy instituted, but it was evident that it would be impossible to meet the interest payments and the payments on account of the principal of the loans, and at the same time maintain the University in any degree of efficiency. The regents make the following significant statement in their report for the year ending Sept. 30, 1861: "It is submitted that the policy adopted by the early movers in the organization of the University and enjoined by the provisions of its charter, of providing grounds, buildings, and the entire outlay of preparation for a university, from the income of its endowment, *has signally failed.*" As a measure of relief the legislature by Chap. 208, laws of 1862, cancelled the indebtedness of the University to its fund, incurred for the building of

Main Hall, and authorized the payment from the principal of the fund of all other indebtedness incurred for buildings. While the effect of this was to reduce the permanent fund by the amount of the indebtedness thus cancelled and paid off (about \$100,000) it left the income of the balance of the fund freed from the obligation of repaying the principal or the loans. The effect of this act was equivalent to the University's having constructed its buildings from the capital of its fund instead of from the income.

The University grew rapidly after the war and again its income became insufficient. It was pointed out that, whereas the constitution provided that the university fund was to be perpetual, the legislature had permitted the fund to become impaired by providing for the payment of the indebtedness of the University for buildings from the principal of the fund. It was figured that the annual income thus lost to the University was \$7,333.76. The legislature by Chap. 2, laws of 1867, authorized an annual tax of this amount to be appropriated to the university fund income. Thus the state was reluctantly, but nevertheless surely, coming to the support of the University. The principle of direct appropriations by the state for the support of the University was acknowledged a few years later in an appropriation for the building of "Ladies Hall" and an increase of the annual tax for the University to \$10,000. Since this the state has given generous support to the University.

The University had been criticised because of its preparatory department, and because of the alleged narrowness of the curriculum. It was demanded that "a more distinct bias should be given to its instructions in the direction of the several arts and avocations as they exist among men." In 1858, as the outcome of these demands, the preparatory department was restricted in its scope, and the University was reorganized into a department of science, literature, and the arts, consisting of six schools; philosophy, philology, natural science, civil and mechanical engineering, agriculture, and polity.

Chancellor Lathrop was succeeded in 1859 by Henry Barnard, a graduate of Yale, prominent in the reorganization of the schools of Connecticut and Rhode Island, founder of the *American Journal of Education*, and (1867) first national Com-

missioner of Education. His policy centered in elevating the public school system of the state as a basis for university growth, but ill health caused his resignation in 1860.

Under the *ad interim* direction of Professor Sterling, the University remained without a chancellor until 1867. The Civil War took a large proportion of the students into the field, and no commencement was held in 1864, all but one of the senior class having joined the army.

The close of the war brought a new inspiration and growth to the University. The returning soldiers took up their studies, and by 1870 the University had nearly 500 students. A reorganization was effected in 1866, and Dr. Paul A. Chadbourne, a graduate of Williams College, was called to the presidency. Among the important developments of this period was the founding of the College of Law, the maturing of plans providing for co-education, and the institution of the agricultural department as an integral part of the University. This constituted a radical departure from the policy of the other states of the middle west. In many instances agricultural and engineering colleges have been founded apart from the state university. The rapid growth of the University of Wisconsin and its hold upon the people have been in a considerable measure due to the fact that it contains within its organization the colleges which appeal to the farmer and the artisan as well as to the business and professional classes of the state.

It was through the efforts of President Chadbourne that an appropriation of \$50,000 was secured from the legislature of 1870 for the erection of a separate building for the women students of the University. This building, now known as Chadbourne Hall, was constructed during the following year, when Professor Sterling as Vice-President administered the University, and was first occupied in the fall of 1871.

President Twombly came to the University at the beginning of the academic year 1871-72. He was a graduate of Wesleyan University of Middletown, Connecticut, one of the overseers of Harvard College, and a founder of Boston University.

The reorganization of 1866 had provided for co-education, but for some years the work of the women was kept separate from that of the men. It was significant, however, of an increasing recognition of the importance of the education of women that

the first building appropriation the legislature made to the University was for the women's building, and only a few years elapsed when complete co-education was adopted. Perhaps the most important development of the period of Dr. Twombly's presidency was the provision made by the legislature for a state tax of \$10,000 a year to form a part of the University income. In thus adopting the policy of a special annual tax for the support of the University, the legislature made the formal explanation in the preamble to the law, that the policy of disposing of the land grants by congress at a low price, in order to attract actual settlers, had prevented the increase of the productive funds, and that it was the duty of the State to see to it that the University should not suffer. A system of free tuition to the graduates of the high schools of the State who passed the University entrance requirements, was also adopted at this time. This step was the beginning of the elimination of the preparatory department of the University. By resting its growth upon the high schools of the State, and receiving an annual income from the taxpayers, the University merged itself completely with the educational life of the State, and, in the long run, felt the benefits of this change.

With the coming of President Bascom from Williams College, in 1874, the University entered upon a new life. The finances of the institution were put on a better basis by the legislative grant of a tenth of a mill tax, which afforded increasing revenue as the wealth of the State increased. Large specific grants for new buildings, including Assembly Hall, Science Hall, the Chemical Building, and the Machine Shop, were made in the same period. The Farmers' Institutes and the Short Course in Agriculture brought the University into closer touch with the farmers of the State. Under Dr. Bascom's presidency the preparatory department was abolished, and the University found all the students it could care for among the graduates of the high schools. At the beginning of his presidency the attendance, excluding the preparatory department, was about 300. At its close, thirteen years later, it was but 500; but the University had thoroughly gained the respect of the State.

President Bascom was succeeded by President Chamberlin of the United States Geological Survey, a graduate of Beloit College. He gave the University a strong impulse toward graduate study

by the emphasis which he laid on research. Courses of study were increased, the standards of admission raised, and fellowships provided for graduate study. When he resigned, after five years of service, in 1892, the University had doubled its numbers, rising from 500 to 1,000. During his presidency, a new science building was completed, and buildings were erected for the Dairy School and the Law School. In addition, a university boat house was built, and the contracts let for the Armory and Gymnasium, now such a prominent feature of the Lower Campus.

President Adams came to Wisconsin from Cornell, the presidency of which university he had just resigned. Under his administration the University rose from 1,000 students in 1892 to 2,600 in 1901. The beautiful building for the library of the State Historical Society and the University, costing nearly three quarters of a million of dollars, and housing treasures of inestimable value, is the most impressive monument of his presidency. The University developed into a larger life in all directions during these ten years. The increase in the number of graduate students was large and the emphasis upon graduate teaching was distinct. At the close of his presidency there were over one hundred graduate students, while ten years before there were only twenty-two. Athletics had reached their largest development in the same period, and Camp Randall, an athletic field of forty-two acres, was purchased for the University. The University began its summer sessions in 1899, a development which has been very important in increasing the influence of the University.

During the absence of Dr. Adams, caused by illness, and after his resignation, Professor Birge, Dean of the College of Letters and Science, served as Acting President during the three academic years, 1900-1903.

President Charles R. Van Hise, the first alumnus of the University to hold the presidency, was elected in the spring of 1903, and assumed the active duties of the position at the beginning of the succeeding academic year.

THE SUPPORT OF THE UNIVERSITY

The University is supported partly by the income of federal grants, partly by taxation of the people of the State, partly by student fees and to a slight extent by private gifts. There have been seven federal grants, namely: the Two-Township Grant of

1848; the Supplementary Two-Township Grant of 1854; the Morrill Grant of 1862 for the support of studies pertaining to agricultural and mechanic arts; the Hatch Grant of 1887 for the support of agricultural experiment stations, the Supplementary Morrill Grant of 1890, the Adams Act Grant of 1906 and the Nelson Grant of 1907.

Besides numerous and large appropriations for buildings and other specific purposes, the State of Wisconsin has made a number of continuing grants, namely; the one-tenth mill tax of 1876, increased to one-eighth mill in 1883; the additional one-tenth mill tax of 1891; the appropriation for the support of the Observatory in 1887; the appropriation for the support of Farmers' Institutes in 1885, increased in 1887; the appropriation for the College of Engineering, in 1889, of one per cent. of the railroad license tax; and the additional one-fifth mill grant of 1897. The legislature of 1899 consolidated the various mill taxes, specified above, and the grant of one per cent. of the railroad licenses into a specific continuous annual grant of an amount equal to the annual revenue from these various grants. This appropriation was increased by the legislature of 1901 and again by the legislature of 1903.

In 1905 the laws making specific annual appropriations for the support of the University were repealed, and a two-sevenths of a mill tax was imposed for current expenses. This change resulted in a considerable increase in the income of the University. Moreover, an appropriation was made, extending through three years, for permanent improvements, including buildings for educational purposes, repairs and improvements, apparatus and books. The legislature of 1907 continued this appropriation. The legislature made an appropriation of \$200,000 for two years for permanent improvements, from which have been built a women's building and a live stock pavilion. The authority to establish a medical school was granted, and a continuing appropriation was made to establish a university extension division. The legislature of 1909 increased the appropriation for support by \$100,000 per annum for the biennial period, increased the appropriation for university extension and made an appropriation for agricultural extension, and continued the appropriation for permanent improvements so as to provide for a biology building, a horticulture building, a women's dormitory,

a wing to the engineering building, a wing to the dairy building, and the completion of the central heating plant. In addition to this \$50,000 was appropriated for books, apparatus, furniture, and equipment.

Of the gifts that have come to the University from individuals before the present year, that of Dane County for the purchase of lands for the University farm, that of the late Governor C. C. Washburn for the founding of the Washburn Observatory, that of the late Judge Mortimer M. Jackson for the establishment of the Mortimer M. Jackson Professorship of Law, that of the late Dr. C. K. Adams and Mrs. Adams for the foundation of fellowships, and that of Mrs. Fannie P. Lewis for the foundation of scholarships for women, have been the most considerable and important.

On August 27, 1908, Colonel William F. Vilas, who for fifty years had been deeply interested in the University as student, as regent and as citizen, died. His entire estate was bequeathed to the University, the income, however, in part or in whole if need be to go to his wife and daughter during their lives. Half of the income of the estate is to be used for the support of research professorships, fellowships, and scholarships and the remainder to increase the principal. While it will be many years before the University gains financial assistance from this bequest, its influence for the development of the University along the highest lines cannot but be felt at once.

THE UNIVERSITY AND THE STATE

The University of Wisconsin is the culmination of the free educational system of the State. In the educational policy of the State, the University sustains a similar relation to the high schools that the high schools sustain to the primary and grammar schools. As those who have passed through the grammar grades may freely avail themselves of the high schools, so those who have completed with credit a high school course may advance to the opportunities offered by the University. It is not expected that all pupils who complete the grammar grades will advance to the high school; nor is it expected that all who complete a high school course shall go forward to the University. But the school system of the State has been so arranged as to make the passage from one grade to another as easy and natural as pos-

sible, in order to afford every encouragement to higher education. The State through the University undertakes to furnish instruction in the various branches requisite for a liberal education, in the technical branches of engineering, law, agriculture, medicine, pharmacy, chemistry, commerce, home economics, and music. It also aims to encourage research work in all departments, to produce creative scholars, and so do its part in the enlargement of the domain of knowledge. Finally the University through an extension division organized upon the broadest basis is widely assisting the people of the State in the assimilation of the extraordinary advance in knowledge which has been characteristic of the past two score years. Thus it is the general policy of the institution to foster the educational interests of the State, broadly and generously interpreted at the University. By prescribing a large number of studies during the first two years of undergraduate work, and by leaving all, or a large part, of the work of the last two years to the free selection of the student, under a definite system, the University endeavors to give a wise measure of direction, leaving at the same time sufficient room for choice to encourage individual adaptation and special development. The graduate work is, of course, wholly elective.

GOVERNMENT

The government of the institution rests upon the inherent obligations of students to the University and to the State. The University is maintained at the public expense for the public good. Those who participate in its benefits are expected, as a matter of honor, not only to fulfill the obligations of loyal members of the institution, of the community, and of the commonwealth, but actively to aid in promoting intellectual and moral interests. Every student owes to the public, in the form of superior usefulness to it, both while in the institution and afterwards, a full equivalent for its expenditure in his behalf.

The University avoids all that is sectarian or partisan; but it endeavors to extend its sympathy and influence to whatever contributes to good citizenship and high character.

ORGANIZATION

The University embraces—

- THE COLLEGE OF LETTERS AND SCIENCE.
- THE COLLEGE OF ENGINEERING.
- THE LAW SCHOOL.
- THE COLLEGE OF AGRICULTURE.
- THE MEDICAL SCHOOL.
- THE GRADUATE SCHOOL.
- THE EXTENSION DIVISION.

The College of Letters and Science embraces--

- GENERAL COURSES IN LIBERAL ARTS.
- SPECIAL COURSES, which include:

- CHEMISTRY.
- COMMERCE.
- JOURNALISM.
- MUSIC.
- PHARMACY.
- TRAINING OF TEACHERS.

The College of Engineering embraces—

- THE CIVIL ENGINEERING COURSE.
- THE MECHANICAL ENGINEERING COURSE.
- THE ELECTRICAL ENGINEERING COURSE.
- THE CHEMICAL ENGINEERING COURSE.
- THE MINING ENGINEERING COURSE.

The College of Agriculture embraces—

- THE EXPERIMENT STATION.
- THE LONG COURSE IN AGRICULTURE.
- THE MIDDLE COURSE IN AGRICULTURE.
- THE SHORT COURSE IN AGRICULTURE.
- THE DAIRY COURSE.
- THE FARMERS' INSTITUTES.
- HOME ECONOMICS.

The College of Law embraces—

A THREE YEARS' COURSE.

The College of Medicine embraces—

THE FIRST TWO YEARS OF A MEDICAL COURSE.

The Extension Division embraces—

THE DEPARTMENT OF INSTRUCTION BY LECTURES.

THE DEPARTMENT OF CORRESPONDENCE-STUDY.

THE DEPARTMENT OF GENERAL INFORMATION AND WELFARE.

THE DEPARTMENT OF DEBATING AND PUBLIC DISCUSSION.

EQUIPMENT

GROUNDS AND BUILDINGS

The University of Wisconsin is picturesquely situated at Madison, the capital of the State. The University grounds comprise 600 acres, and extend for more than a mile along the south shore of Lake Mendota, a sheet of water about four miles in width and six miles in length. In the eastern part of the grounds the land rises abruptly from the lake into two summits, of which the eastern and higher, University Hill, reaches a height of about one hundred feet above the lake. The larger number of the college buildings are placed on the summit and eastern slope of this hill. The western part of the grounds is lower and more nearly level, and is occupied by the Experimental Farm, belonging to the College of Agriculture. East of the University Hill is the lower campus, on the west end of which stands the State Historical Society Library building for the libraries of the State Historical Society and the University. (For an account of this building, see Index, under Libraries.) The rest of the lower campus is used for athletic sports and as the drill ground for the military department. At the session of 1893 the legislature provided for the purchase of Camp Randall for an athletic field. This is a tract of ground comprising forty-two acres, adjoining the University grounds to the southwest. In 1898 one hundred and sixty acres were purchased for a special experimental farm for the College of Agriculture, to which 130 acres have since been added.

The buildings of the University that are used for instructional purposes are nineteen in number. The oldest three—North Hall, South Hall, and University Hall—stand on and near the eastern summit of University Hill. North Hall was erected in 1850-51, and was opened for instructional purposes on September 17, 1851. It is now occupied by the departments of German and Commerce. South Hall was erected in 1855. It contains the office of the Dean of the College of Letters and Science; offices, lecture rooms, and laboratories for the departments of Bacteriology, Pathology, He-

brew and Hellenistic Greek, Political Economy, and the offices of the Wisconsin Geological and Natural History Survey. University Hall, the construction of which was authorized by the legislature in 1857, was completed in 1859; it has since been materially changed; a new portico, a new dome, and a large south wing were added in 1897-99; a corresponding north wing was added in 1905-06, thus completing the building and making it worthy of its site on the crest of University Hill. This building contains the lecture and recitation rooms for most of the departments of Language and Literature, Mathematics, History, and Philosophy. On the first floor of the south wing are the offices of the President and the Registrar. These buildings as originally erected were paid for out of the money derived from the sale of lands granted by the national government.

Across the east front of the campus, at the foot of University Hill, is a row of buildings, erected at the expense of the State of Wisconsin. At the south is Chadbourne Hall, the dormitory for young women; it was built in 1870 and remodeled and enlarged in 1896 (see Index).

Directly west of Chadbourne Hall, facing University avenue, is Lathrop Hall, the new building for the use of the women of the University which has just been completed. This building combines all the features of a union and a gymnasium. It is a four story structure 65 by 240 feet. The union comprises a reception room, rooms for social events and literary societies, a dining room, and a cafeteria. The gymnasium occupies the entire second floor and a part of the third and fourth floors. The main gymnasium room is 60 by 118 feet, and to the east of this is a smaller room, 42 by 72 feet. In the basement is the swimming pool, 30 by 58 feet, and the bowling alleys. There is ample space for lockers and showers. The equipment of the gymnasium is complete in every respect and will afford all the women students ample facilities for physical training. In addition to the above, this building provides for offices for the Adviser of Women and for the instructors in physical training. Also the department of home economics is temporarily located in this building.

North of Chadbourne Hall stands Assembly Hall, completed in 1879. The rear part, occupied by the University Library until the summer of 1900, has been remodeled for the School of Music. Still farther north is Science Hall, the largest and most costly of

the University buildings, completed in 1887, containing the lecture rooms, laboratories, and museums of the departments of Physics, Geology, and Biology (including Anatomy). Next to Lake Mendota is the old Chemical Laboratory, built in 1885, and now occupied by the departments of Chemical Engineering, Physiology and Pharmacology. To the rear of this are the Machine Shop, Carpenter Shop and the old Central Heating Plant, both built in 1885. The old heating plant is being remodeled into a laboratory for the use of the Department of Mining Engineering. It will be used for the work in metallurgy, assaying, etc. To the north of the Machine Shop, and abutting the lake, is the new Hydraulic Laboratory Building, completed in 1905. To the west of Science Hall, on the north side of the campus, is the Engineering Building, erected in 1900. There is in process of construction a four story addition to the Engineering Building. This addition is 70 by 45 feet in size and will add greatly to the facilities of the Engineering College in every way. It will be ready for use by the opening of the year 1910-11. Opposite this, on the south side of the campus, is the Law Building, erected in 1893, which contains the library, lecture rooms, and offices of the Law School.

In 1906 the property on the corner of State and Park streets was purchased by the University, and during the summer of the same year the building was remodeled, and is now occupied by the officers of the Regents. In 1908 the adjoining property, running down to Sterling Court, was purchased and the house on this property has been made into an office for the Professor of Clinical Medicine and Medical Adviser for the students.

Southwest of University Hall, on the level tract of land fronting on University avenue, stands the Chemical Building.

One block west of the Chemistry Building is the new University heating plant which was used for the first time this year. This plant cost in the neighborhood of \$165,000 and is considered a model in heating plant construction. In addition to furnishing steam for the entire University the new plant will be used as a laboratory for the work in steam and mechanical engineering by students of the College of Engineering.

Directly west of University Hill is Observatory Hill, upon which stands Washburn Observatory, erected in 1878 through the munificence of the late Gov. C. C. Washburn. Near it are the

Students' Observatory and the residence of the director. On the western slope of Observatory Hill are the Hiram Smith Hall (the Dairy department), constructed in 1891, the Horticulture-Soils Building, begun in 1893 and completed in 1896, and the new central Agricultural College Building, first occupied in 1904, which are described in that part of this catalogue devoted to the College of Agriculture. On the east side of Hiram Smith Hall is being constructed a \$25,000 addition which is 40 by 80 feet in size. South of Agricultural Hall are the Farm Engineering Building and the Agronomy Building, which were occupied for the first time in the autumn of 1907. Further west are located the Live Stock Pavilion containing an amphitheatre capable of seating 2,000, the barns of the Experimental Farm and the residence for the Dean of the College of Agriculture.

Between the lower campus and the lake stands the Armory and Gymnasium, authorized by the legislature of 1891, and between this and the lake is the University boat house.

The new Forest Products Laboratory for the use of the United States Forest Service, which has just been completed, is on the northeast corner of Camp Randall. The building has been erected by the University regents at a cost of about \$175,000 and will be equipped and maintained by the government. The government has concentrated all forestry work carried on east of the Rocky Mountains at the new Madison station. The experimental work will include the testing of various woods for pulp making, for use as building material and other purposes. Wood distillation will also be conducted on a large scale.

Arrangements have been made whereby advanced students of the University will be able to do work in the new laboratory and it is proposed to establish a course for forest rangers as soon as the funds become available.

LABORATORIES

THE AGRICULTURAL LABORATORIES.—The eight buildings of the College of Agriculture, devoted primarily to instruction and research purposes, include thoroughly equipped laboratories for all subjects included in the agricultural courses. Most of these laboratories are used for instruction in the College of Agriculture as well for the research work of the Agricultural Experiment Station. Special opportunities are thus afforded for those pursuing

advanced work to become acquainted with the practical application of the principles in which they are instructed. Detailed description of these laboratories will be found in the College of Agriculture announcement in this catalogue. The University farms are equipped with modern buildings, which furnish a complete working farm equipment for instructional and research purposes. On these farms extensive herds and flocks of selected animals are maintained representing a variety of breeds and types. The crop and animal production on these farms is conducted along approved scientific lines and students have ample opportunity to observe and occasionally to assist in farm work.

ANATOMICAL LABORATORIES.—There are laboratories devoted to human anatomy, vertebrate anatomy, histology, and embryology. These laboratories are thoroughly equipped with apparatus, models, and materials for advanced as well as elementary work.

BACTERIOLOGICAL LABORATORIES.—The laboratories for the College of Letters and Science are located on the third and fourth floors of South Hall; those for the College of Agriculture on the first and second floors of the Agricultural Building. The laboratories in South Hall consist of a suite of twelve rooms, including a large general laboratory and an advanced laboratory with special rooms for individual research.

BIOLOGICAL LABORATORIES.—The elementary laboratory for the departments of botany and zoology is provided with compound microscopes, dissecting microscopes, and other apparatus necessary to an elementary course in botany and zoology.

BOTANICAL LABORATORIES.—The laboratories for advanced work in botany are fitted up with the apparatus and reagents necessary for advanced courses in vegetable morphology, histology, physiology and cytology. A greenhouse and a laboratory, also under a glass roof, occupy the fourth floor of the south wing of Science Hall, and have been especially equipped for work on the development and physiology of the lower plants. A considerable amount of apparatus for work on the special physiology of the flowering plants is also provided. A special laboratory is devoted to work in general physiology, and all necessary reagents, ovens, paraffin baths and microtomes are provided for histological and cytological work on cell structure and the phenomena of cell division, fertilization, chromosome reduction, etc. Provision is

also made for work on the metabolism of cells and their reactions to physical stimuli. The equipment includes apparatus for the study of the effects of various thermal, light and gravitational stimuli on protoplasmic activities, a photometer, and a set of electrical measuring instruments, such as delicate d'Arsonval galvanometer, millimeter, resistance measuring instruments, etc., for the study of electro-physiological problems.

CHEMICAL LABORATORIES.—The chemical laboratories are located in the new chemical building, a large structure devoted exclusively to chemistry and pharmacy. On the first floor are the beginners' laboratories; these are also used for qualitative analysis. On the second floor are the laboratories of quantitative analysis, the food laboratory, and the laboratory of practical pharmacy. On the third floor are the laboratories of physical chemistry, the laboratory of electrochemistry, the laboratories of organic chemistry and the laboratory of pharmaceutical chemistry. The building also contains a large auditorium and three additional lecture rooms, one on each floor. On the second floor, there is a seminary room and on the third floor a library and reading room. Besides the rooms mentioned, the building is well supplied with offices, private laboratories, smaller laboratories for special work, dark rooms, balance rooms and store-rooms. All the laboratories are well lighted and well equipped for the work for which they have been designed. The supply of chemicals and apparatus is unusually good, and the chemical library contains complete files of all the important chemical journals, and is well supplied with reference books and other works on chemistry and allied subjects. The chemical department is therefore able to offer exceptionally good facilities, not only for the pursuit of the usual courses in chemistry, but for original investigation as well. Research is especially encouraged, and such additional facilities as may be required for any special piece of work are furnished by the department when needed.

GEOGRAPHICAL LABORATORIES.—The laboratories for instruction in physical geography or physiography and in regional geography, now located in the Geological Museum in Science Hall, accommodate sixty students at a time. They are equipped with several thousand topographic, geological, geographical, climatic, and political maps, both of United States and of foreign countries, with 21 large and 17 small models of land forms, and with

a growing collection of photographs. An outdoor experimental laboratory is being equipped.

GEOLOGICAL SEMINARY.—This room is fitted out as a department library with a full equipment of reference books, maps, charts, etc.

MINERALOGICAL LABORATORY.—The laboratory of mineralogy is located on the second floor of Science Hall, where desks, apparatus and chemical reagents for courses in blow-pipe analysis and determinative mineralogy are provided for a class of thirty-four students. In the mineralogical lecture room are the necessary models of crystals in glass and wood, and working collections of crystals and minerals.

PATHOLOGICAL AND MEDICAL BACTERIOLOGICAL LABORATORIES.—These are at present located in South Hall. They are equipped both for elementary and advanced work.

PETROGRAPHICAL LABORATORY.—This laboratory is supplied with polarizing microscopes, other necessary apparatus, and a very complete set of rocks and of rock and mineral sections, for courses in optical mineralogy and petrology. The general and special collections mentioned under the caption of Museums are available for all advanced students of petrology.

PHYSICAL LABORATORIES.—The instruction in the department of physics is designed to meet the needs of all classes of students, from those just entering, with no knowledge of the subject, to those who have been well trained, and who are prepared to continue in the more advanced courses or take up a line of original investigation.

The physical laboratories are located on the first floor and in the basement of Science Hall, and are commodious and well equipped. Besides the lecture room and the large apparatus room the first floor contains the general physical laboratory, which is new and complete in its appointments in every respect. The lecture room has a seating capacity for 200 students, and is provided with all the appliances to facilitate a complete course of experimental lectures. In the basement are three large general laboratories for undergraduate work and a number of laboratories for special investigation. A well-equipped workshop under the direction of a skilled mechanic is an important feature of the department. Besides current supplied from the numerous dynamos in the University shops, the various rooms of the physical laboratory are connected with the electric light and power circuits of the city.

The physical apparatus includes, in addition to the equipment for demonstration purposes, an excellent collection of instruments adapted to measurement and investigation. The laboratory offers special facilities for carrying out graduate study and research.

PHYSIOLOGICAL AND PHYSIOLOGICAL CHEMISTRY LABORATORIES.—These laboratories occupy two floors in the south wing of the Chemical Engineering Building. They contain a thorough equipment for elementary and advanced work in experimental physiology and in physiological chemistry.

THE STATE HYGIENIC LABORATORY is located on the second floor of Agricultural Hall and the abundant material here furnished for diagnostic purposes is also utilized for class room and research work.

ZOOLOGICAL LABORATORIES.—For advanced work in zoology new laboratories have been equipped with all necessary apparatus for regular classes, or for any special work that the student may elect. In connection with much of the work done in zoology, use is made of the museum, which contains, besides the regular exhibit collection, special sets which have been purchased especially for use in the lecture room and laboratory. These include cases illustrating protective coloration, mimicry, sexual dimorphism, etc. There is a nearly complete set of Zeigler models, besides a large number of Blaschka models, especially rich in protozoa and coelenterata.

LIBRARIES

The libraries at Madison, all of which are at the service of members of the University, are five in number, viz., the Library of the University of Wisconsin, the Library of the State Historical Society of Wisconsin, the Library of the Wisconsin Academy of Sciences, Arts, and Letters, the State Law Library, and the Madison Free Library. These libraries duplicate books only to supply exceptional demands, and have an effective strength approximately equal to the total number of volumes possessed by them. The total number of bound volumes in all the libraries is about 404,000 and the number of pamphlets exceeds 202,000.

The first three libraries above named are all housed in the library building of the State Historical Society on the lower campus of the University. This building, erected by the state of Wisconsin at a cost of \$610,000, affords most convenient accom-

modations for students. In the planning of the building, the special needs of the University were consulted.

In the south half of the first floor are located four department libraries of the Historical Society, viz., documents, newspaper files, patents, and maps and manuscripts. In the north end of this floor is a series of six seminary rooms, allotted to American history, European history, political economy, political science, and mathematics. The greater part of the second or main floor is occupied by the general reading room and the periodical room, which are used in common by the two libraries. In these two reading rooms 275 readers may find ample accommodation at one time. In open cases in the reading room are shelved several thousand reference and "reserved" books. To these, as well as to the large collection of general and engineering periodicals in the adjoining periodical room, all readers have direct access. The main portion of both libraries is stored in the stack wing adjoining the delivery room on the west. Officers of the University have direct access to the shelves in all parts of the library, and students engaged in advanced work, upon recommendation of their instructors, are allowed access to those parts of the collection dealing with their special subjects.

The administrative rooms of the Historical Society and of the University library are situated at the south and north ends of the second floor respectively. The north end of the third floor is occupied by six seminary rooms, for the departments of German, Latin, Greek, Romance languages, English, and philosophy and education. The south end of the third floor contains a small lecture hall, a room for the Wisconsin Academy of Sciences, Arts, and Letters, and two small administrative rooms. The museum and gallery of the Historical Society occupy the fourth floor. The library is open fourteen and one-quarter hours daily, during the academic year, except on Sundays and legal holidays.

The Library of the University of Wisconsin, including its branches, contains about 163,000 volumes and 40,000 pamphlets. The catalogue is the usual dictionary card catalogue of authors, subjects, and titles in one alphabetical arrangement. Subject to certain restrictions, books may be drawn by all members of the University. Students are required to make a guarantee deposit of \$2.00 with the bursar of the Regents before borrowing books from the library. This amount is refunded on presenting to the bursar the library deposit card properly endorsed by the librarian

In general, the library aims to be uniformly developed in all fields, but appropriations and gifts in recent years have rendered it specially strong in the lines of political economy, political science, European history, and Germanic and classical philology.

The Law School has a special library of 17,000 volumes; and the Washburn Observatory is provided with the Woodman Astronomical Library, now containing 2,600 books and 2,700 pamphlets. The Agricultural Library of about 10,500 volumes is located on the first floor of the new Agricultural Hall. In the reading room of the Engineering Building are kept the current files of the most important engineering and technical periodicals, together with a collection of engineering reference books.

The Library of the State Historical Society contains over 164,000 volumes and 162,000 pamphlets. While strong in all fields of American history and allied subjects, it is especially rich in manuscript and other material for the study of the history of the Mississippi valley. Its collections in English history are among the most extensive in this country.

The Library of the Wisconsin Academy of Sciences, Arts, and Letters is a valuable collection of reports and transactions of learned societies, comprising about 5,000 volumes. It is located in the library building, and constitutes a useful supplement to the other libraries in this special field.

MUSEUMS

OFFICERS

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
ROBERT A. HARPER, Ph. D., Professor of Botany, Curator for Botany.

WILLIAM S. MARSHALL, Ph. D., Associate Professor of Entomology, Curator for Zoology.

WILLIAM S. MILLER, M. D., Associate Professor of Vertebrate Anatomy, Curator for Vertebrate Anatomy.

C. K. LEITH, Ph. D., Professor of Economic and Structural Geology, Curator for Economic and Structural Geology.

ROLLIN H. DENNISTON, Ph. D., Curator for Pharmaceutical Collections.

The University museums comprise the Anatomical Museum, the Geological and Mineralogical Museum, the Biological Museum,

the Herbarium, and the Drug Cabinet, which occupy respectively rooms on the second, third and fourth floors of Science Hall. The collections in the College of Engineering and the College of Agriculture are described in later pages.

When the museums are not open to the public, access may be gained by visitors at all reasonable hours by calling upon the janitor of the building.

THE ANATOMICAL MUSEUM is at present located on the fourth floor of Science Hall. It is primarily designed as an aid in teaching and investigation, and includes specimens and models illustrative of human and comparative vertebrate anatomy.

THE CHEMICAL COLLECTION.—The collection here described is located in the new Chemistry Building. Through the liberality of the United Alkali Company of England, some fifty specimens of their products in various stages of manufacture were obtained. Dr. William Simon, of Baltimore, has contributed a series of specimens illustrating the manufacture of bichromate and ferrocyanide of potassium. Fries Bros. of New York have donated a number of synthetics used in perfumery. A similar collection has recently been received from the Herben Chemical Co. of New York. A cabinet for volatile oils contains fine collections from Schimmel & Co., of Leipzig, Germany; Roure Bertrand Fils, of Grasse, France; Dodge & Olcott, New York; Lautier Fils of Grasse, France; H. Haensel of Pirna, Germany, and others. A cabinet for dye-stuffs contains about 1000 samples of artificial dye-stuffs from the Farbenfabriken of Eberfeld & Co. of New York, Farbwerke vorm. Meister Lucius and Bruening of Hoechst; Casella Color Company, New York; Badische Company, New York; Barret Mfg. Co., Philadelphia. These collections are supplemented by numerous volumes of richly illustrated descriptive matter, to which additions are being constantly received. Large and valuable collections of modern synthetic new remedies have been received from Schering and Glatz, from the Farbenfabriken of the Eberfeld Company, Merck & Co., Boehringer & Soehne, Bischoff & Co., and from Heyden Chemical Works, all of New York; also from Parke, Davis & Co., Detroit; Actiengesellschaft fuer Anilin Fabrikation, Berlin, and others.

THE DRUG COLLECTION.—At present this collection contains about 4,500 sample specimens of drugs for purely illustrative purposes. Each year additions come to it as contributions from va-

rious sources. Among the larger contributors are Schimmel & Co., of Leipzig, Germany; Lehn & Fink, Parke, Davis & Co., and Gilpin, Langdon & Co. The collection is well supplied with drugs of Asiatic origin. Notable among them are a collection of fifty Ceylon drugs and medicines and a collection of more than one hundred Malay medicines.

THE GEOLOGICAL MUSEUM has been built up for the most part with special reference to instructional work. It is divided into four parts, one devoted to systematic paleontology, one to systematic collections of minerals and rocks, one to a systematic collection of ores, and another to relief models illustrating topographic and geological features. The paleontologic section includes the Powers collection of Wisconsin fossils and also the Wisconsin Academy of Sciences, Arts, and Letters collection containing the type fossils described in the volumes of the first Geological Survey of Wisconsin.

A large amount of the general illustrative material, not coming directly under the above heads, is exhibited in cases in the halls of the geological department.

A number of additional collections are at present stored in the lecture rooms, laboratories and offices, and are accessible to students interested. These include a collection of 40,000 specimens and 20,000 thin sections, belonging to the Pre-Cambrian and Metamorphic Division of the United States Geological Survey, one of the largest of its kind in the world; a large collection of New England rocks belonging to the same survey; the collections of the old Wisconsin Geological Survey; and the Hobbs collection, mainly of European rocks, supplied with over 1,000 thin sections.

THE HERBARIUM of the University (rooms 41 and 51, Science Hall) includes the Lapham collection, chiefly of flowering plants, purchased by the State from the estate of I. A. Lapham, of Milwaukee. This collection, which contains about 8,000 species, has been mounted and arranged and is accessible for study. The Wisconsin plants have been separated from the rest and it is the intention to make them the nucleus of a complete representation of the Wisconsin flora. Large additions have been made to this herbarium by Professors L. S. Cheney and H. L. Russell. Mr. Lapham's collection also included a considerable number of algae, lichens, and mosses. The collection of mosses has been very greatly extended by gifts, purchases, exchanges, and collections

acquired, so that it includes almost all of the species known to North America, besides a large number of those from other countries. Many valuable types and sets of exsiccata are included. The collection of algæ and parasitic fungi contains the principal North American exsiccata as well as large local collections. There is also a large and rapidly growing collection of alcoholic and dried specimens of the fleshy fungi of the State.

The biological seminary room contains a department library with the main reference books and periodicals in zoology and botany, and card catalogues of biological literature.

The Pathological Museum is at present located in Room 44, South Hall. It comprises 300 specimens illustrative of gross morbid anatomy and is intended primarily as a teaching museum but is also open to the members of the medical profession.

THE ZOOLOGICAL AND BOTANICAL MUSEUM is in the central room of the fourth story of Science Hall. Among the specimens at present placed in the cases may be named a good collection of vertebrate skeletons; a complete set of Ziegler models illustrating various stages in the development of vertebrates and invertebrates; models of the brain and sense organs; a large number of Blaschka glass models of invertebrates; an alcoholic collection of invertebrates from the Naples Zoological Station; representative collections of echinoderms, corals, and mollusks. The botanical cases contain a collection of Auzoux models of flowers, a collection of specimens of wood and of the fleshy woody fungi of the state. The Owen collection of Lepidoptera, comprising 5,000 species, and over 20,000 specimens, is deposited in Science Hall.

LOCAL OFFICE, U. S. WEATHER BUREAU

As a result of the policy of the University of Wisconsin to cooperate with the scientific branches of the National Government, the local office of the U. S. Weather Bureau is located at the University and the official in charge lectures in the University on meteorology and climatology. (These courses are described on later pages, see Index under Meteorology.)

The functions of the local office of the Weather Bureau are (1) to observe the meteorological elements twice daily and to exchange the results by telegraph with other stations for use in forecasting the weather; (2) to prepare and distribute to the public the daily weather map, and forecasts, and other weather in-

formation; and (3) to maintain in operation a set of automatically recording instruments and to tabulate therefrom data for use in climatology.

The equipment of the station includes eye-reading instruments for measuring the barometric pressure, temperature, humidity, rainfall, and direction and velocity of the wind, and automatic registers for making continuous records of the barometric pressure, temperature, humidity, rainfall, direction and velocity of the wind, and of the duration of sunshine.

The exposed apparatus is mounted upon the roof of North Hall. The office where the registers are in operation, is in Room 84 in the same building. It is open to the public from 9 a. m. to 4 p. m. daily, except Sundays and holidays. Visitors are especially welcome during the afternoon hours. The forecasts and information relative to weather or climate may be obtained by telephone at any time.

The student's meteorological observatory is also located on the roof of North Hall. Its equipment consists of a complete set of direct reading apparatus, of the same type as that used by the Weather Bureau, and the following additional instruments, viz.: a nephoscope for observing the direction, and velocity of clouds, an evaporimeter, and a set of solar and terrestrial radiation thermometers. The equipment of the department includes a large number of meteorological and climatological charts, and a full series of lantern slides illustrating meteorological phenomena.

GENERAL INFORMATION

UNIVERSITY REGULATIONS

THE UNIVERSITY YEAR

The regular University year opens on the last Wednesday in September. There are two semesters in each year. The first semester ends on the Friday at the middle of the University year, not including recesses. The second semester begins on the succeeding Monday, and ends with the annual Commencement, on the thirty-ninth Wednesday of the University year.

The Christmas vacation ordinarily begins at the end of the second day before Christmas, and closes at the beginning of the second day after New Year's. When, however, Christmas falls on Monday or Tuesday, the vacation begins at the end of the Friday preceding, and when New Year's falls on Thursday, or later in the week, the vacation closes at the beginning of the following Tuesday. The Easter recess begins on Thursday morning before Easter Sunday, and closes on the morning of the following Tuesday.

STUDENT ADVISERS

In the College of Letters and Science, the College of Engineering, and the College of Agriculture, each student is placed under the immediate charge of a member of the faculty, who acts as his adviser in matters pertaining to University work. The student must consult his adviser in choosing studies, and obtain his approval before classes can be entered.

The system of student advisers varies somewhat in the colleges mentioned above, and does not obtain in the Law School and the School of Music.

INFORMATION FOR WOMEN STUDENTS

The Adviser of Women gives general and individual attention to the academic and social welfare of women students.

For the benefit of those who are not accommodated in Chadbourne Hall (see Index) she has prepared a list of addresses

where rooms for young women may be obtained. Each house on the list has been inspected by her, and while responsibility for them cannot be assumed by the University, they are believed to be suitable homes for women students.

By a resolution of the Self Government Association women students will occupy rooms only in such lodging houses as accommodate women exclusively, and in which a parlor is provided for the reception of visitors. Exceptions to this rule will be only by permission of the Adviser of Women. The houses on the prepared list meet these requirements, and the list may be had upon application. All arrangements must be made directly with the persons mentioned in the list, and should be made early, by those who desire a wide choice of rooms. All women students are required to report to the Adviser of Women to register their addresses, and to be directed if rooms have not been secured. All changes of address are expected to be reported promptly.

Lathrop Hall, a commodious new building, was opened the second semester of this year, for the use of the women of the University. It provides, in addition to a finely equipped gymnasium, restaurant and rest room, a meeting place for student organizations, and a center for the social life of the University.

Mrs. Cora Stranahan Woodward, the Adviser of Women, invites correspondence with parents and guardians, and gladly cooperates with them regarding the welfare of students.

CARE OF STUDENT HEALTH

The Medical Adviser, Dr. Joseph S. Evans, whose office is at 821 State Street, Telephone 240, has general supervision of the care of students needing medical attention. His regular office hours are, daily from 2 to 4 P. M., Sundays, 12 to 1 P. M. Consultations at other times may be arranged by special appointment. Students confined to their rooms by illness should send word to Dr. Evans, who will then visit them for consultation at the house. The Medical Adviser has a clinical laboratory equipped with the best modern scientific apparatus for the diagnosis of disease, and in charge of an expert technician. He will make a careful study of the physical condition of those who consult him, so that treatment may be based, so far as possible, on a correct diagnosis. He will refer to specialists students who

need care along special lines (diseases of the eye and ear, major surgery, etc.). He will be glad to make at least one call on students confined to the house by illness in order to insure their receiving proper attention and care. He is not, however, to be expected to undertake personal care of such students, but may recommend that a local physician be secured, except in cases where the students cannot afford to pay for medical attendance. At all times, however, the facilities of the clinical laboratory are at the service of any physician attending a student. It is earnestly desired that all cases of student illness be promptly reported to Dr. Evans, and that students should feel at liberty to consult him freely about the care of their health.

A physical examination is required each semester of all Freshmen. This includes an examination of the heart, lungs, and other vital organs; tests for vision and hearing and special tests for curvatures of the spine and other physical inequalities. There is a medical examiner attached to each department of physical training who makes these examinations under the general supervision of the Medical Adviser and recommends appropriate curative exercises.

A trained nurse resides at Chadbourne Hall and her services are free to resident and to other women students who notify the Medical Adviser.

Arrangements for students needing hospital care have been made with the Madison General Hospital Association.

The University Committee on Hygiene has general supervision of the hygienic aspects of the university buildings and other conditions affecting the health of the student-body. Under its auspices a series of lectures on public and personal hygiene by eminent authorities is offered each year.

HONORS

Honors are given at graduation for special work of high order of excellence done in any department. Such honors will be voted by the faculty to those students whose graduation theses show exceptional excellence, and who have completed with unusual success a long course of study in the department in which the thesis is presented. The thesis must show work additional to all requirements for graduation equal to two hours a week for one year. Students desiring to become candidates for spe-

cial honors in any department must make application to the faculty, at the opening of the second semester, through the professor in whose department the honors are sought.

UNDERGRADUATE SCHOLARSHIPS AND FUNDS

SCHOLARSHIPS FOR UNDERGRADUATES

The Amelia H. Doyon Scholarships

By the will of Mrs. Amelia H. Doyon, late of Madison, the University has received a gift of \$5,000 to be known as the Amelia H. Doyon Fund. The income from this fund is to be divided into two equal parts, to be designated as the Amelia H. Doyon Scholarships, which are to be given to young women in attendance at the University, to be selected by the faculty. In making this selection the faculty is to take into consideration the scholarship or standing of the persons selected and their need of financial help. Neither of these scholarships is to be bestowed on any young woman who has not been in attendance as a student at the University of Wisconsin for at least one year.

The Fannie P. Lewis Scholarship Fund

By the will of the late Fannie P. Lewis, of Watertown, Wisconsin, the sum of \$10,000 was left to be held in trust by the University Regents. The annual income from this money is to be equally divided between two women students of the University who shall be selected by the Regents, on the recommendation of the faculty. In making these recommendations both scholarship and need of financial assistance are to be considered by the faculty.

The Christian R. Stein Scholarship

By the will of the late Christian R. Stein, of Madison, a bequest of \$1,000 was made to the University, the interest of which maintains a scholarship to be given by the faculty to a student of the University who has been in attendance at least one year.

The Henry Gund Scholarship in German

Mr. Henry Gund, of La Crosse, has generously established a fund of \$5,000 to maintain a scholarship in German literature.

LOAN FUNDS AND STUDENT AIDS**The John A. Johnson Fund**

The University is indebted to the liberality of the Hon. John A. Johnson, late of Madison, for a fund of \$5,000 the interest of which is loaned to students. The sum obtained by one student in one year shall not exceed \$50, and the total amount shall not exceed \$200. At present the benefits of the fund are limited to Scandinavian students. The income of this fund is loaned by the Faculty Committee on Loan Funds.

The Alexander H. Rogers Loan Fund

Through the generosity of the sons of the late Alexander H. Rogers, of Chicago, the sum of \$1,000 from the estate of Mr. Rogers has been turned over to the University to be used as a loan fund for the assistance of needy students. By the terms of the gift no one student may secure more than \$250 from this fund.

The Graduating Class Fund

The class of 1900 gave to the University several hundred dollars, the profits of the Senior Class Play, as the nucleus of a loan fund for the aid of needy students, to which the succeeding classes have made substantial additions. The money hitherto received has been loaned to students on promissory notes. This fund is under the charge of the Faculty Committee on Loan Funds, consisting of the President of the University, Professor Olson, Chairman, and Professors Gay, R. B. Scott and Mrs. Woodward.

The Secretary's Fund

The Secretary of the Regents in 1900 established a fund of \$500 for the aid of meritorious students. Additions to the fund have been made by others. No loan shall exceed \$50 in a single year, and the aggregate loans to any person shall not exceed \$200.

The Geneva Loan Fund

This fund of \$450 was provided in December, 1903, by Mrs. E. P. Allis and Mr. Louis Allis, of Milwaukee, and by Mr. Frank W. Allis (member of the Short Course class of 1897), proprietor of Monona Farm, Madison. In February, 1905, F. W. Allis gave

\$150 additional, and in October of the same year Louis Allis contributed another \$150 so that the fund amounts to \$750. It is available to needy members of the Short Course classes of the College of Agriculture only, in small amounts. Loans from this fund may be made through the Dean of the College of Agriculture.

Employment Bureau

The Young Men's Christian Association of the University conducts an employment bureau for the benefit of those students who find it necessary to contribute to their own support. Students who are willing to do good work can, in most cases, be supplied with remunerative employment. The positions that are most frequently supplied are: waiting on table, tending furnace, assisting in the house, caring for lawns, and serving as stenographer, typewriter, or clerk. The general secretary of the Young Men's Christian Association has direction of the employment bureau, having his office at Association Hall. Students who must earn part of their expenses should communicate with the secretary before they come to the University.

SOCIETIES AND PUBLICATIONS

LITERARY AND SCIENTIFIC SOCIETIES

The literary and debating societies of the University have played so important a part that they may almost be said to constitute a department by themselves. The Athenæan and the Hesperian societies are nearly as old as the University itself, Athena having been organized in 1850, and Hesperia in 1854. Philomathia was organized in 1886, and Olympia in 1902. The societies are sustained with great enthusiasm, and are an important means of intellectual training. Athena, Hesperia, and Philomathia form what is known as the Joint Debate League, which arranges annually a public debate between two of these three societies. This joint debate has been a feature of the University for nearly forty years. These four above-mentioned are men's societies in the College of Letters and Science. The debating society of the Law School is Forum-Columbia. The

young women maintain two literary societies, Castalia, established in the early years of the University, and Pythia, in 1902. These seven societies form the Oratorical Association, which has charge of inter-collegiate debating and oratory. This association is a member of a pentangular debating league, composed of the universities of Illinois, Iowa, Minnesota, Nebraska, and Wisconsin. Each university meets two of the others each year in debate in rotation, so that in the complete round each of the universities meets each of the others twice. A series of preliminary contests, held at the middle of each year, is made up of a sophomore contest, a junior contest, a junior-ex contest, (between representatives of each of the literary societies chosen from the junior class), and a senior contest. The winner in this series is chosen as the representative of Wisconsin in the Northern Oratorical Contest, in which he meets representatives from the universities of Chicago, Iowa, Michigan, Minnesota, Northwestern, and Oberlin. Another contest is held in the autumn of each year to select a representative to compete with representatives of the other universities for the prize offered by the Hamilton Club of Chicago, nine universities being represented.

The most important scientific organization in the University is the Science Club, which includes both officers of instruction and advanced students, and seeks to promote an interest in scientific study and research. It conducts public meetings for the discussion of scientific topics of current interest. A bronze medal executed by T. Moring, London, is annually awarded by the Club for the best baccalaureate thesis on a scientific subject. The Historical and Political Science Association and the Language and Literature Club are new societies organized by instructors and graduate students for the purpose of fostering advanced work. In various departments of the University there are journal clubs or societies for furthering the special work of the departments. Among these are the *Germanistische Gesellschaft*; a Scandinavian society, the *Nora Samlag*; the Romance Language Club; the Pharmaceutical Society; the Classical Club; the Physics Journal Club; the Biological Club, and the Chemical Club. In other departments, where no such organization has been affected, similar results are reached by means of the various seminars. The graduate students of the University maintain a Graduate Club. The University Press Club, the Women's Press

Club and the Hoard Press Club are composed of students preparing for journalism. A Music Students' Club has been organized to encourage among the students a more serious study of the great composers and their works. The Haresfoot Club is maintained by university dramatic talent, and presents a play annually; the Red Domino Club is a similar organization maintained by young women; and the Edwin Booth Club aims to promote dramatic interest and train dramatic talent. Phi Alpha Tau is a semi-honorary fraternity devoted to the interests of oratory and public speaking. Admission is determined by the members, largely on the basis of native ability and proven success along these lines.

SOCIAL AND RELIGIOUS ORGANIZATIONS

The women have organized a Woman's Self Government Association, which seeks to further in every way the unity of spirit of women in the University, to increase their sense of responsibility toward each other, and to be a medium by which the social standard of the University can be made and kept high. The religious organizations of the University include the Young Men's Christian Association, and the Young Women's Christian Association. Honorary fraternities are represented by Phi Beta Kappa, established in 1898, Tau Beta Pi, the honorary engineering fraternity, established in 1899, Alpha Zeta, the honorary agricultural fraternity, established in 1906, the Phi Lambda Upsilon, the honorary chemical fraternity, established in 1906, and Sigma Xi, the honorary scientific fraternity, established in 1907. The Iron Cross, the honorary senior society, is composed of students who have distinguished themselves in the various lines of student activity.

PUBLICATIONS OF THE UNIVERSITY

The Bulletin of the University of Wisconsin is published bi-monthly at Madison. The Economics and Political Science series, the History series, the Philology and Literature series, the Science series, the Engineering series, and the University Extension series contain original papers by persons connected with the University. A check list showing the issues to date in the above-named series and giving more detailed information regarding other publications of the University may be obtained on application to the University Editor.

The general series of the Bulletin includes the annual catalogue, special announcements of the various schools and colleges, etc. A directory of officers and students of the University is issued in the early part of each academic year, and a general catalogue of officers and graduates of the University is published once in five years, the last having been issued in 1907.

The High School series comprises a number of manuals designed to assist secondary school teachers in the subjects included in the high school curriculum.

From Washburn Observatory are issued the Publications of Washburn Observatory; from the Agricultural Experiment Station, bulletins and annual reports; and from the office of the Farmers' Institute, the Wisconsin Farmers' Institute Bulletin.

STUDENT AND ALUMNI PUBLICATIONS

The publications issued by the students include the Daily Cardinal; the Sphinx, a bi-weekly illustrated, humorous publication; The Wisconsin Literary Magazine, a monthly; the Badger, the junior class annual; the Wisconsin Engineer, a quarterly publication of the engineering students; and the Student Farmer, a monthly publication issued by agricultural students. The Wisconsin Alumni Magazine, a monthly journal, is the official organ of the alumni.

ADMISSION TO THE UNIVERSITY

METHODS OF ADMISSION

Students are admitted either upon examination at the University, or upon certificates from accredited schools, except that students and graduates of the Normal schools of this State, students from other colleges and universities, and adult special students, are admitted in accordance with the provisions stated below.

For the examinations at the University, see page 92.

TIME OF ENTRANCE

New students ordinarily enter the University at the opening of the first semester; but there are advantages in beginning work in the Summer Session, not only to the student who needs to strengthen his preparation, but also to the strong student, who through the advantages offered by the Summer Session may complete his university course *in three years*. For the courses, see Index under Summer Session.

In a general way it is, moreover, advantageous to any student to begin work in the Summer Session, for the following reasons: He becomes familiar with university methods of instruction before the heavier work of the year begins; he receives more individual attention, as the classes in summer are smaller; his experience and the advice of his instructor will enable him more wisely to shape his course.

New students may enter at the beginning of the second semester, but they should be on hand the week preceding, in order to make the necessary arrangements as the regular work of the semester begins promptly on Monday morning.

ENTRANCE REQUIREMENTS

The requirements for admission are stated in terms of units. The term *unit* means the equivalent of five recitations a week for one year in one branch of study. In closely allied branches not usually taught in periods of one year each, such as physiology

and zoology, units may be constructed by adding the respective time values of such studies. In any subject three recitations a week for one year and a half may be counted as one unit.

Fourteen units are required for admission, of which six are required of all, and eight are elective. For a description of the amount of work expected in each of the subjects named in the entrance requirements, see page 84, under Preparatory Work.

I. The following six units are required of all:

ENGLISH	2 units
MATHEMATICS	2 units
LATIN, GERMAN, OR FRENCH	2 units

II. In addition to the requirements under I, eight units must be offered from the following elective subjects:—

ENGLISH	1 or 2 units
MATHEMATICS	$\frac{1}{2}$, 1, $1\frac{1}{2}$, or 2 units

FOREIGN LANGUAGES:

Greek	1 or 2 units
Latin	1, 2, 3, or 4 units
German	1, 2, 3, or 4 units
French	1, 2, 3, or 4 units
Spanish	1 or 2 units

HISTORY	1, 2, 3, or 4 units
Ancient History	1 unit
Medieval and Modern History	1 unit
Medieval and English History	1 unit
English History	1 unit
United States History	1 unit

CIVICS	$\frac{1}{2}$ or 1 unit
Commercial Law may be offered under Civics.....	$\frac{1}{2}$ unit

ECONOMICS AND COMMERCIAL GEOGRAPHY, combined, 1 unit; separately, $\frac{1}{2}$ unit each.

SCIENCE	1, 2, 3, or 4 units
Botany	1 or 2 units
Chemistry	1 or 2 units
Physics	1 or 2 units
Physical Geography and Geology	1 or 2 units
Physiology	$\frac{1}{2}$ unit
Zoology	1 or 2 units

MANUAL TRAINING, OR OPTIONAL SUBJECT (See below)....1 unit

LIMITATIONS.—Not more than four of the required fourteen units will be accepted in any one subject. No foreign language course of less than two units will be accepted from students presenting only one foreign language. Students who present not less than three units of one foreign language may receive credit for one unit of a second foreign language.

OPTIONAL SUBJECT.—An optional subject is any subject of the student's high school course not specified in the list of elective subjects. When manual training is not offered, one optional subject of one unit, or two of one-half unit each, may be offered. No optional subject may be offered with manual training.

ADMISSION WITHOUT FOREIGN LANGUAGE.—Students may be admitted without foreign language under the following conditions: (1) They must offer fourteen units subject to all the limitations stated above, except that one optional unit may be offered with manual training, or two optional units without manual training. (2) The language requirements must be met before graduation. This will ordinarily require extra work to the extent of four hours a week for one year, which will not be credited as part of the number of unit-hours required for graduation in the several colleges and courses. Opportunity for making up the deficiency in language will be offered by the University.

ADVISED GROUPING OF PREPARATORY SUBJECTS.—Students are advised to adapt their preparatory work to the course that they expect to pursue in the University. Attention is called to the requirements for admission to the several colleges and courses, and to the statements of the several departments concerning the preparation best adapted to the work of each.

REQUIREMENTS FOR ADMISSION TO THE SEVERAL COLLEGES AND COURSES

COLLEGE OF LETTERS AND SCIENCE.—The studies under I, and electives under II, to make fourteen units.

Students entering this college are advised to present Latin and a second foreign language, to the amount of at least six units. The requirements in foreign language for the degree of Bachelor of Arts are as follows: 16 unit-hours for those who offer four years or more of language at entrance; 24 unit-hours for those who offer less than four years of language at entrance. (See Index under Requirements for Degrees.)

COLLEGE OF ENGINEERING.—The following units are required of all:—

ENGLISH	2 units
ALGEBRA	1½ units
GEOMETRY, Plane and Solid, combination course extending over 1 year, as described on page 87.....	1 unit
or Plane 1 year and Solid ½ year	1½ units
The longer course covering 1½ units is recommended.	
GERMAN OR FRENCH	2 units
OR LATIN	4 units
PHYSICS	1 unit

The remainder of the required fourteen units must be made up from elections under II. Students are advised to present chemistry, advanced mathematics, and additional work in German or French. Students who enter without foreign language will find it difficult to complete any of the courses in engineering in four years.

Students deficient in advanced algebra or solid geometry, but who meet present requirements for entrance to the College of Letters and Science will be admitted to the College of Engineering, but will be required to make up the deficiency during the first semester. Special classes will be provided for this purpose.

For the requirements for admission to the advanced engineering courses leading to a professional degree, see Index under Advanced Engineering Courses.

COLLEGE OF AGRICULTURE.—The studies under I, and electives under II, to make fourteen units.

COLLEGE OF LAW.—(1) Candidates for a degree: Credits equivalent to the work of the Freshman and Sophomore years in the College of Letters and Science. (2) Not candidates for a degree: The studies under I, and the electives under II, to make fourteen units.

COURSE IN COMMERCE.—The studies under I, and electives under II, to make fourteen units.

PRE-MEDICAL COURSE.—The studies under I, and electives under II, to make fourteen units. Students entering this course are advised to present two units of Latin, inasmuch as the medical schools require this amount of Latin for entrance. The University offers a beginner's course in Latin, without credit toward

a degree. Students are also advised to present four units of German.

COURSE IN CHEMISTRY.—The studies under I, and electives under II, to make fourteen units.

COURSE IN PHARMACY.—Four Year Course: The studies under I, and electives under II, to make fourteen units. No practical experience in pharmacy is required. Two Year and Three Year Course: (1) Graduates from high schools are admitted without examination and without practical experience in a drug store. (2) Non-graduates are admitted if they comply with the following requirements:

1. They must be at least eighteen years of age.
2. They must present satisfactory certificates of at least one year's attendance from some standard high school, or its equivalent from a similar institution.
3. The time intervening between the secondary education and the college course should have been spent in a drug store, where physicians' prescriptions are regularly compounded.

SCOPE OF THE PREPARATORY WORK

The following description serves to indicate the extent of the preparation expected in each of the several subjects named in the preceding requirements for admission:—

English

ENGLISH. 2, 3, or 4 units. All applicants for admission must present two units in English, one of which must consist of composition, and one of the reading and study of English classics. The two units required in English correspond in amount and character to the work of the first two years of the standard high school course, in which one-half of the time is devoted to theme-writing and instruction in the principles of composition, and one-half to the careful study of a number of English classics. It is recommended that applicants present at least three units in English, the third unit to consist of additional work in composition, and either (1) an outline history of English and American literature with the reading and study of representative selections of each period, or (2) the intensive study of a few typical examples of the novel, the drama, the lyric, and the essay. Four units of English should include composition, and both (1) and (2) given above, in addition to the two required units. A com-

plete statement of the work for each unit of preparation is given in No. 1 of the High School Series of the Bulletin of the University of Wisconsin, entitled *The High School Course in English*.

COMPOSITION AND RHETORIC. Systematic practice in theme-writing with instruction in the principles of composition and the forms of discourse must form an important part of each unit of English presented for entrance. Every student entering the University is examined as to his ability to express himself in clear, correct, idiomatic English. The test consists in requiring the student to write an essay on a familiar subject, in which he plans his work by paragraphs, and constructs both paragraphs and sentences in accordance with the simpler principles of composition. No student will be passed in this test and permitted to pursue the course in Freshman English whose work shows serious weakness in spelling, punctuation, grammar, sentence construction, or division into paragraphs. Facility of expression will not be sufficient to offset marked deficiency in spelling, punctuation, grammar, or sentence structure. Students whose preparation in English composition is found to be deficient must make up such deficiency in one year under penalty of being dropped from the University. The University provides a course of instruction for such students. See English A., p. 140.

READING AND STUDY OF ENGLISH CLASSICS. 2 units. The two units in English required of all applicants for admission must include the thorough study of at least ten of the English classics on the list of uniform college entrance requirements in English, or their equivalents. The first aim in the reading and study of these selections should always be to understand fully the thought expressed. It is necessary to understand each idea as expressed in the word, the allusion, or the figure of speech; to combine the ideas to get the thought of the sentence; and to follow the development of the thought from sentence to sentence in order to grasp the meaning of the paragraph, essay, story, or poem as a whole. The study of the form, the structure, the style, and the purpose of the selection; a knowledge of the author's life; the consideration of the relation of the selection to the age in which it was written; and a comparison of it with other works of the same type, all give a better understanding of the classic. Particular attention should be given to words and idioms in the reading with a view to increasing the student's command of language.

HISTORY OF ENGLISH AND AMERICAN LITERATURE. 1 unit. In addition to the two required units in English, applicants for admission may present one unit in the history of English literature, or in the history of English and American literature. In designating this unit as a study of English and American literature, it is intended that the greater part of the time should be devoted to the reading of selections from representative authors of each period; and that in the study of the history of literature which should not occupy more than one-quarter of the time, emphasis should be placed on general movements and tendencies in literature as shown in the selections studied. In the history of English literature characteristic selections from most of the following authors should be read: Chaucer, Shakspeare, Bacon, Milton, Pope, Addison, Goldsmith, Gray, Burns, Scott, Wordsworth, Coleridge, Keats, Shelley, Tennyson, Browning, Lamb, George Eliot, Dickens, and Thackeray. In connection with the history of American literature the student should be familiar with representative works of Longfellow, Whittier, Bryant, Holmes, Irving, Hawthorne, Cooper, Poe, Lowell, and Emerson. A study of the principles of composition and the application of them in theme-writing must be included in this unit.

ADVANCED STUDY OF CLASSICS. 1 unit. Besides the two units of required work in the reading and study of English classics, students may offer one unit representing advanced work in the study of literature corresponding to the fourth year of the standard high school course in English. This should consist of a thorough and intensive study of the form, the structure, and the style of typical examples of the novel, the drama, the lyric, and the essay. At least one work from each of the following four groups should be included for this unit: (1) Thackeray's *Henry Esmond*; Hawthorne's *The House of Seven Gables*; Dicken's *A Tale of Two Cities*; George Eliot's *Silas Marner*; (2) Shakspeare's *Macbeth*, *Hamlet*, *King Lear*; (3) Palgrave's *Golden Treasury* (First Series), Books II and III, or Book IV; Milton's *Lycidas*, *L'Allegro*, and *Il Penseroso*; (4) Burke's *Speech on Conciliation*; Webster's *First Bunker Hill Oration*, and Washington's *Farewell Address*; Macaulay's *Life of Johnson*, *Essay on Milton*; Carlyle's *Essay on Burns*. A study of the principles of rhetoric, with frequent and systematic theme-writing, must form a part of this unit.

Mathematics

ALGEBRA. 1 or $1\frac{1}{2}$ units. The unit is required of all students and should include the following subjects: Addition, subtraction, multiplication, division, equations of the first degree with one unknown number, simultaneous equations of the first degree, factors, highest common factor, lowest common multiple, quadratic equations, simultaneous equations above the first degree, elementary theory of indices, and radicals.

An additional half year of algebra is strongly recommended for all students and is required of engineering students. The work should cover the following subjects: Simultaneous quadratic equations; ratio, proportion and variation; graphical representation of simple relations between two variables; binomial theorem for positive integral exponents; logarithms, including use of tables in simple numerical work.

GEOMETRY.—At least one unit is required of all students.

1 unit, *combination course of a single year in plane and solid geometry*. This should consist of about 180 propositions of which 45 must be in solid and spherical geometry. It is preferred for the College of Letters and Science.

1 unit, *plane geometry*. A unit credit will be given for a more extensive and intensive course of a year in plane geometry.

$\frac{1}{2}$ unit, *solid geometry*. A half year of solid geometry following a year of plane geometry will be credited $\frac{1}{2}$ unit.

For admission to the College of Engineering either the combination course or $1\frac{1}{2}$ units of plane and solid geometry is required.

TRIGONOMETRY. $\frac{1}{2}$ unit. The important properties of the trigonometric functions, the addition theorem and the more important formulas which follow from it, and the solution of the various cases of right and oblique plane triangles. The student should become familiar with the use of logarithmic and trigonometric tables.

GEOMETRY AND MECHANICAL DRAWING. $\frac{1}{2}$ unit. Students who have taken work in geometry in addition to the unit required of all and have had an approved course in mechanical drawing may receive $\frac{1}{2}$ unit credit therefor.

An additional credit of $\frac{1}{2}$ to 1 unit may be given to students who have had further work in algebra, trigonometry and survey-

ing, or other mathematics, but the total credit shall not exceed 4 units.

History, Civics, and Economics

HISTORY. 1, 2, 3, or 4 units. History may be offered in the following "blocks":

Ancient History to the year 800 A. D., 1 unit.

Medieval and Modern History, 1 unit.

Medieval and English History, 1 unit.

English History, 1 unit.

United States History, 1 unit.

One, two, three, or four blocks may be presented. A real equivalent may be presented in place of a block recommended above, but one year's course in general history will not be accepted.

CIVICS. $\frac{1}{2}$ or 1 unit. A knowledge of the relationships existing between subordinate and higher political units together with a description of the chief functions performed by the institutions of the various political units.

Civics may be combined with history or economics in the construction of an elective unit.

Commercial Law, $\frac{1}{2}$ unit, may be offered under Civics.

ECONOMICS. $\frac{1}{2}$ unit. A knowledge of the fundamental principles of economic science as presented in a good elementary treatise on the subject.

Commercial Geography, $\frac{1}{2}$ unit, may be offered under Economics.

Science

BOTANY. 1 unit. The course in botany should cover a study of the life histories of types from the main groups of plants, and should include also a series of simple physiological experiments. At least two-thirds of the course should consist of laboratory work. For further details see the report of the committee of the Wisconsin State Teachers' Association for 1902 on a high school course in botany.

Where it is not possible to give a full year's work to the subject, botany may be combined with physical geography and physiology in the construction of units.

CHEMISTRY. 1 unit. A year's course in chemistry, consisting of a study of the more common elements and their compounds.

The course should consist of both laboratory and recitation work. About three-fifths of the time should be spent in the laboratory. Two laboratory periods are considered as equivalent to one class exercise. A record of all of the work done in the laboratory should be kept in a note-book.

PHYSICS. 1 unit. A year's course in physics which must include both class-room work with a text-book and laboratory practice. The class-room work should be given not less than three periods a week, while the laboratory practice should require at least four actual hours of work a week in the laboratory, and a record of all work done should be kept in a carefully prepared note-book. Any one of the standard books, such as Carhart and Chute, Milliken and Gale, or Gage, may be used as a text.

PHYSICAL GEOGRAPHY. 1 unit. The physical geography should include: (1) The principles as presented in the best recent text-books, which give adequate treatment of the atmosphere and ocean and emphasize the development and influence of topographic forms. (2) Field study. The nature of this must be controlled by the locality; but every candidate offering physical geography will be expected to submit a statement of the field trips required in his course. (3) The interpretation and habitual use of topographic maps, weather maps, charts, and pictures in the laboratory.

Where it is not possible to give a full year's work to the subject, physical geography may be combined with botany and physiology in the construction of units.

PHYSIOLOGY. $\frac{1}{2}$ unit. In this subject instruction must be given in anatomy, histology, and physiology of the human body, and the essentials of hygiene. The amount expected is indicated by that given in Martin's *The Human Body, Briefer Course*. The text-book work must be illustrated by charts and models, and anatomical demonstrations and chemical experiments should also be made.

ZOOLOGY. 1 unit. Instruction in this subject should include as much as four periods of laboratory work per week. The student should study at least eight to ten types of animals and make careful descriptions and drawings of this work. Knowledge of life histories and habits and relation of environment is desirable.

The laboratory work should be accompanied with class exercises, so that the student may gain an intelligent appreciation of the meaning of his observations and of the bearing on zoological science of the facts observed by him. The nature and scope of work expected may be indicated by the text-books of Needham, Colton, Jordan, and Kellogg, or Linville and Kelly.

Language

GREEK. 2 units. Grammar; Xenophon's *Anabasis*, four books; Homer's *Illiad*, three books, or an equivalent amount of the *Odyssey*; Greek composition.

LATIN. 4 units. Grammar and elementary book; *Caesar*, four books, or an equivalent amount of *Nepos*, *Caesar* (at least two books) and selection; *Cicero*, six orations (selections from the letters may be substituted for two orations); *Virgil*, six books; composition; preferably in connection with *Caesar* and *Cicero*.

These requirements are planned with special reference to the needs of those candidates who purpose to continue in the University the study of ancient and modern languages and of history.

LATIN. 2 units. Grammar and elementary book; *Caesar*, four books or an equivalent amount of *Nepos*, *Caesar* (at least two books) and selections; composition. Students who so present two units and others whose preparation in Latin is, for any reason, deficient may continue the study in the University with course A, which may be credited towards the bachelor's degree. No such credit, however, will be given for third and fourth year high school Latin.

GERMAN. 2, 3, or 4 units. German may be offered for entrance as a subject of two, three, or four units, requiring respectively two, three, or four years of high school study and approximately corresponding to the "elementary," "intermediate," and "advanced" courses outlined in the "Report of the Committee of Twelve." This report can be procured, at the price of sixteen cents, from D. C. Heath & Co., Boston. A detailed statement of the work of each unit may also be found in "The High School Course in German," No. 2 of the High School Series of the Bulletin of the University of Wisconsin.

A. *Elementary German*. 2 units. Applicants should be able to pronounce and to translate at sight (into good idiomatic English) simple German prose, help being given upon unusual words

and constructions, to put easy English sentences into German, and to carry on a very simple conversation based upon the texts set for translation. The required amount of grammar is contained in the current "brief" grammars, or in the "first parts" of larger grammars like Joynes-Meissner or Thomas. Of the strong verbs only the more usual are required. Applicants should have read not less than 200 pages of easy German, chiefly modern narrative prose, but including some simple poems and one or two short plays.

B. Intermediate German. In addition to the work outlined under A, applicants should have read from 300 to 400 pages of moderately difficult prose and poetry, with constant practice, both oral and written, upon portions of the texts read. The work in grammar, accompanied by exercises in composition, should be continued.

C. Advanced German. Besides the work outlined under A and B, applicants should have read from 400 to 500 pages of standard literature in prose and poetry, with reference reading in the history of modern German literature. They should be able to translate at sight any ordinary modern German text that is free from unusual difficulties, to write a brief German essay on a simple topic relating to the texts read, and to follow a recitation conducted in German.

Students without preparation in German enter course 1. Those who have had two years of high school German will begin their work in the University with one of the courses 2, 2L, 2S, 2C, or 2E. Those who have had three years of German enter course 2A. Students who have studied German for four years in the high school regularly enter course 3A.

FRENCH. 2, 3, or 4 units. French may be offered for entrance as a subject of two, three, or four units, requiring respectively two, three, or four years of high school study, and approximately corresponding in difficulty to the "elementary," "intermediate," and "advanced" courses outlined in the "Report of the Committee of Twelve," pp. 75-83.

A. Elementary French. 2 units. The applicant should have a thorough knowledge of the grammatical forms of the language, and possess a sufficient vocabulary to read simple texts with ease.

Fraser and Squair's grammar is being used at present in the University, emphasis being placed upon oral and written drill

outlined in the first 161 pages. Not less than 600 pages of simple French should have been read with careful attention paid to pronunciation during the entire period. A list of suitable texts will be found on page 76 of the "Report of the Committee of Twelve.

B. Intermediate French. In addition to course *A*, the applicant should have read at least 600 pages of French chosen from nineteenth century classics, and done work in oral and written composition equivalent to that given in Fraser and Squair's *Complete French Grammar*.

C. Advanced French. One year's high school work in addition to *Intermediate French*. The applicant should be able to write a short composition in French and show his understanding of a simple lecture in French by answering questions upon it in French. He should also be familiar with the outline of French history and literature.

SPANISH. 2 units. Spanish may be offered for entrance as a subject of two units, corresponding to the amount of work done in the elementary courses of the University. The student should have acquired a fair pronunciation, considerable facility in the translation of easier Spanish texts and a fairly accurate knowledge of grammatical principles and of regular and irregular verbs. The work in grammar should in scope be approximately the same as that contained in Parts I and II of Giese's *First Spanish Book and Reader*. About four hundred standard pages should have been translated, the following texts being regarded as especially suitable:—Ramsey's *Elementary Spanish Reader*, *Gil Blas*, *El Capitán Veneno*, Alarcón's *Novelas Cortas*, *El Pájaro Verde*, and at the end of the course, *Dona Perfecta* or *José*. The student should be taught the Castilian pronunciation.

MANUAL TRAINING

1 unit. In order to present manual training for entrance, the applicant must have taken an approved course in which not less than the equivalent of 240 hours has been devoted to wood work and 120 hours to drawing.

EXAMINATIONS AT THE UNIVERSITY

The regular examinations of the University are two in number, one in June and one in September. The earlier one is intended

for those who wish to be examined while fresh from their preparatory studies, and for those who wish to test their qualifications at an early date in order that they may have time to make up deficiencies if necessary. The September examination immediately precedes the opening of the first semester.

For the current year the earlier examinations will be held on Thursday and Friday, June 17 and 18, beginning at 9 o'clock A. M. The later examinations will be held on Tuesday and Wednesday, September 28 and 29, beginning at 9 o'clock A. M. Students who are in any doubt as to their qualifications are urged to present themselves in June. All candidates are required to be present at 9 o'clock on the first day of the examinations.

Candidates for admission to the University may divide the subjects and take the examinations in two trials; but a failure to pass all of the subjects in the two trials will necessitate a complete re-examination.

The character of the entrance examinations is indicated by the extent of the preparation expected in each of the several branches, as described above, under the heading Scope of the Preparatory Work.

ADMISSION UPON CERTIFICATE

ACCREDITED SCHOOLS.—Any high school or academy whose course of instruction covers the branches requisite for admission to the University may be admitted to its accredited list of preparatory schools after a satisfactory examination by a committee of the faculty. Application for such an examination may be made by an officer of the school to the Secretary of the Committee on Accredited Schools, on the basis of which a committee of the faculty will examine the course of study and the methods of instruction in the school, and on their favorable recommendation and the concurrence of the faculty it will be entered upon the accredited list of the University. No school will be placed upon the list whose course of study is not fully equal to the four-year course of high schools recommended by the State Superintendent. The graduates of such an approved school will be received by the University without examination, on the presentation of a certificate showing the satisfactory completion of the 14 required units, and containing the recommendation of the principal. Forms for such certificates, pre-

pared by the University, must be used, and may be obtained from the Registrar. *These certificates should be sent to the University before August 1st.*

Any high school or academy with a complete four-year course whose course of instruction does not include foreign language may be admitted to the accredited list under the conditions stated above, provided that its course of instruction covers thirteen units in the subjects accepted for admission to the University. Graduates of such a high school or academy will be admitted upon certificate, under the conditions for admission without foreign language. (See Index under Admission.)

Principals of accredited schools are requested to note the statement regarding the examination of freshmen in English, as stated under the heading Scope of the Preparatory Work (see Index), and also the statement regarding the additional requirement and examination in algebra for admission to the College of Engineering, as stated under Requirements for Admission (see Index).

The University desires to keep itself fully informed regarding the work of its accredited schools by means of annual reports and frequent inspections. Every accredited school is required to report each year concerning its teachers, course of study, methods of instruction, and material equipment. Blank forms are furnished by the University for this purpose. The University sends out inspectors at its own expense and at the convenience of the members of the staff. Especial attention is called to the necessity of promptly notifying the Secretary of the Committee on Accredited Schools of changes in the dates of examinations and vacations. The list of accredited schools will be published near the end of the academic year; it will be sent to all accredited schools and to all high schools in the State of Wisconsin. Copies of the list may be had upon application to the Registrar.

GRADUATES OF NORMAL SCHOOLS

The certified standing of any student in the regular courses of the normal schools of this state will be accepted for entrance to the University in place of an examination in the subjects covered by the certificate.

Graduates of the Wisconsin state normal schools who desire to become candidates for degrees will be given credits as follows, in accordance with the resolutions adopted by the conference of Normal School and University representatives, March 12, 1909:

A. Bachelor of Arts: Graduates of the present German and Latin courses of the state normal schools will be granted sixty credits toward the Bachelor of Arts degree, under the following conditions: (a) All such students must absolve all the University requirements for this degree (see Index, Requirements for Degrees); (b) Before entering the course of the normal school, the full equivalent of a four year standard high school course, as given in a high school on the accredited list of this University should be completed; (c) In the selection of elective work in the normal school, courses of University grade should be selected, preferably in science and mathematics; (d) Those students taking elementary foreign language in the normal school must comply with the same language requirements as students entering the University with no foreign language. This will ordinarily require extra work to the extent of eight credits, which may not be included in the one hundred and twenty credits required for graduation.

Application for admission and credit must be accompanied by a full statement of the work accomplished at the normal school, which will be examined and rated by the Committee on Advanced Standing. The studies presented for credit must be fully equivalent to the corresponding courses in the University. Application for laboratory credit in science must be accompanied by laboratory or field books. No credit will be given for any work in a normal school done in a quarter when more than twenty hours per week were taken, except on special recommendation of the president of the school.

(B) Bachelor of Philosophy: The course leading to the degree of Bachelor of Philosophy is designed especially for normal school graduates, requires sixty credits of advanced instruction in education and philosophy, and in history, languages, and science, both required and elective. To this course graduates of the advanced courses of the Wisconsin state normal schools will be admitted, with the rank of junior, on the presentation of a certificate of graduation and a certified statement of their normal school standings.

Graduates of the normal schools of other states are admitted to the University under the same general conditions as obtained for graduates of the Wisconsin normal schools except that no credit will be given greater in amount than that granted by the State University of that state to the school in question.

STUDENTS FROM OTHER COLLEGES AND UNIVERSITIES

Students from other institutions, who have pursued standard college courses equivalent to those of the University, will be admitted, and will receive credit for such courses upon the presentation of proper certificates of creditable standing and honorable dismissal.

By arrangement with Beloit College, Lawrence College, Ripon College, Carroll College, Milwaukee Downer College, the Milwaukee German-American Seminary, (provided the candidate majors in German) and Marquette University, students of these institutions who have satisfactorily completed the work of the sophomore year will be admitted to junior rank in the College of Letters and Science. In case of migration at an earlier period than the end of the sophomore year, proportional credit will be given. Students who complete two years of work at Beloit, Lawrence, Ripon, Carroll and Marquette will be admitted to the College of Engineering of the University of Wisconsin on the same conditions as students who transfer to that college from the College of Letters and Science of the University of Wisconsin. Students of senior rank from Beloit, Lawrence and Ripon who enter the Law School will receive credit for their law studies toward graduation in the institution from which they come, to amounts to be determined by those institutions.

Students of other colleges of good standing who have not taken standard courses, but who have studied at least one year in the college proper, may be admitted to the University provisionally. In such cases the amount of credit will be determined by the Committee on Advanced Standing. The University reserves the right to test by examination the records presented.

No person will be admitted to the University later than November 1st of the year in which he expects to graduate.

ADMISSION OF ADULT SPECIAL STUDENTS

Persons twenty-one years of age who do not possess all the requirements for admission, and are not candidates for a degree, but wish to take special studies in the College of Letters and Science and the College of Agriculture, are permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies advantageously. This privilege is granted in the College of Engineering only to such students as are able to meet all of the entrance requirements in mathematics. The privilege is not granted in the Law School.

Adult special students who desire subsequently to become candidates for a degree must satisfy the regular entrance requirements.

FEES AND EXPENSES

GENERAL REQUIREMENTS

All fees must be paid at the beginning of each semester. Until this has been done, cards entitling the student to admission to classes will not be issued.

Graduate students pay the same fees as undergraduate students of the College of Letters and Science, but all fellows and graduate scholars are exempt from the non-resident tuition fee, and honorary fellows and honorary scholars are exempt from both the non-resident, and incidental fees. Graduate students *in absentia* pay the same fees as graduate students in attendance at the University, provided that after such students have paid fees to the amount they would naturally pay, if in attendance, for the degree for which they are candidates, no further fees will be required. Members of the instructional force who are candidates for higher degrees, pay the same fees as graduate students; but the total fees required are limited to the aggregate sum which is required of students giving their entire time during the period ordinarily required to obtain the degree sought. For the purposes of this section the *period ordinarily required to obtain a master's degree or corresponding professional degree*, shall be construed as *two semesters*, and for the *doctor's degree* as *seven semesters*, or *six semesters and one summer session*.

Tuition is free for all students from the State of Wisconsin. The liability of students to pay tuition charges, as distinguished from incidental fees, shall be determined by the Registrar.

An additional fee of one dollar per semester must be paid by students who pay their fees after the prescribed registration days. (See Calendar.)

From students entering after one-half of a semester or term shall have elapsed, only one-half of the prescribed tuition and fees shall be collected.

Upon the recommendation of the Commandant of the Depart-

ment of Military Science, the Secretary of the Regents is authorized to remit fees to the extent of \$10 per semester to company officers of the battalion having the rank of captain or above, and to award a prize of \$50 at the end of each year of service of the field officers, colonel, lieutenant colonel, and adjutant.

TUITION AND FEES

College of Letters and Science

Resident tuition	FREE
Non-resident tuition, per semester.....	\$25 00
Incidental fee for all students, per semester.....	12 00
Additional fee for students, electing studies in the Law School, per semester hour.....	3 00

Medical School

Resident tuition	FREE
Non-resident tuition, per semester.....	\$25 00
Incidental fee for all students, per semester.....	17 00

College of Engineering

Resident tuition	FREE
Non-resident tuition, per semester.....	\$25 00
Incidental fee for all students, per semester.....	17 00
Summer vacation work.....	7 00

College of Agriculture

Resident tuition	FREE
Long Course, non-resident tuition, per semester.....	\$25 00
Incidental fee for all long course students, per semester	12 00
Incidental fee for all short and dairy course students, per term	6 50
Tuition fee for non-resident short and dairy course students, per term.....	15 00
Lecture fee for non-resident short and dairy course students, per term.....	10 00
Farmers' Course, resident tuition.....	FREE
Farmers' Course, non-resident tuition.....	\$5 00
Farmers' Course, non-resident incidental fee.....	5 00

Law School

Resident tuition	FREE
Non-resident tuition, per semester.....	\$25 00
Incidental fee for all students, per semester.....	12 00

The fee for students in other colleges of the University who elect law studies is \$3 per semester hour, provided such extra charge shall not exceed \$25 per annum.

Summer Session

Graduate School	\$15 00
College of Letters and Science (Six weeks).....	15 00
College of Engineering (Six weeks).....	15 00
College of Law (Ten weeks).....	25 00

School of Music

Persons who are members of other colleges of the University may take the general courses in music without charge. Members of the School of Music and other departments, who take special lessons, will pay fees as stated in the announcement of the school on a subsequent page of this catalogue.

REGULATIONS FOR DOCTOR'S THESIS

Each candidate for the degree of Doctor of Philosophy must deposit in the University library one hundred printed copies of his thesis. If the thesis is printed in a journal or as a bulletin of the University, reprints therefrom will be accepted by the library, but these must be provided with a special cover in proper thesis form. The candidate may receive his diploma before the thesis is printed, provided a written or typewritten copy of the thesis is deposited with the Librarian, and the sum of \$50 with the Secretary of the Regents. The money will be returned on presentation to the library of the required number of printed copies of the thesis within two years.

LABORATORY FEES

BIOLOGICAL LABORATORIES.—The laboratory fee for the elementary course in biology and for the other five unit-hour courses is \$8 per year, or \$4 per semester. The fee for comparative anatomy is \$5 a semester; for histology and embryology \$10 a se-

mester. The fees for human anatomy are: osteology, \$2; dissection, \$10 per part dissected. There is also a breakage fee of \$2.50 a semester. The laboratory fee for physiology course 1b is \$5.00 of which \$3.00 is returnable, for course 5, \$15.00 of which \$4.00 is returnable, and for physiological chemistry \$15.00 of which \$5.00 is returnable. The fee for bacteriology is \$2.00 for each unit-hour of credit with an additional fee for breakage of \$2.00. The fee for pharmacology and toxicology is \$10.00, of which \$5.00 is returnable.

CHEMICAL LABORATORIES.—In these laboratories the deposit is from \$15 to \$25, depending upon the amount of work taken. The amount refunded will depend on the chemicals used and the care exercised by the student.

GEOLOGICAL LABORATORIES.—The laboratory fees in the courses in geology, physiography and mineralogy are from \$1 to \$6 per semester, depending upon the course elected.

PHYSICAL LABORATORIES.—The laboratory fee in the physical laboratories is \$2 for each unit-hour (two hours per week of actual work) per semester.

PSYCHOLOGICAL LABORATORY.—The laboratory fee for the course in experimental psychology is \$3; for other experimental work \$3 per semester, or \$5 per year.

COLLEGE OF MECHANICS AND ENGINEERING.—The charge for laboratory work is \$2 per unit-hour (two hours per week of actual work) per semester. There is also a charge of \$1 per year for periodicals, supplied to the engineering reading room.

COURSE IN PHARMACY.—See chemical and biological laboratories.

COLLEGE OF AGRICULTURE.—The charge for each unit-hour of laboratory work in the various departments is \$1.00 per semester. A breakage deposit of \$3.00, of which the unused balance is refunded at the end of the semester, must be made for each course in which laboratory work is done. The total fees for laboratory work during the first two years of the four year course are approximately as follows: Freshman year, first semester, less the refund, \$18, second semester, \$12; sophomore year, first semester, \$18, second semester, \$5. The cost during the remainder of the course and for graduate work depends upon the nature of the work elected. Laboratory fees must be paid before the student can enter classes. Resident short course stu-

dents pay a laboratory fee of \$2, non-resident, \$12. All students in the winter dairy course pay a laboratory fee of \$10, and in the summer course, \$5. Non-residents in the winter dairy course pay a laboratory fee of \$20, and in the summer course, \$15. All dairy course students pay a refundable key and breakage deposit of \$2.

GYMNASIUM PRACTICE AND MILITARY DRILL

Young men of the College of Letters and Science, College of Mechanics and Engineering, and the four-year courses in agriculture and pharmacy, are required to take gymnastic exercises during the first two years of their course, and are also required to take military drill. Students required to drill must provide themselves with a uniform, of color and pattern required by the Regents, the cost of which is about \$15.

Locker fee, including laundry, per semester..... \$1 25

Young women are required to take gymnastic exercises during the first two years of their course. They must also provide themselves with a uniform costume, directions for which will be found on a subsequent page under the head of Physical Training, women. (See Index.)

Locker fee, including laundry, per semester..... \$1 25

CHADBOURNE HALL

The price of rooms in Chadbourne Hall varies from \$60 to \$170 a year according to location. A circular giving detailed information may be obtained by addressing the Secretary of the Regents.

Applications for rooms in the Hall may be made at any time to the Bursar of the Regents, and must always be accompanied by a deposit of \$10. The fifteen sophomores and ten juniors resident in Chadbourne Hall first applying for rooms in the Hall on or after January 1, will be accepted, and will be given their choice of rooms until February 1. With these exceptions, applications will be received only from freshmen and sophomores until August 1, after which applications from juniors and seniors will be received up to the capacity of the Hall.

Rooms are assigned August 1 by the Mistress of the Hall in the order of application. The deposit of \$10 required from all students when making application will be credited on the rent of

the room for the second semester if taken; but if not taken, it will be forfeited, unless notification is received by the Mistress prior to August 15. The balance due for rent must be paid to the Bursar not later than the second week after the beginning of each semester. Applicants must accept the rooms assigned to them either in writing or in person before the opening day of the school year or they will forfeit the room.

If for any reason one of the occupants of a suite shall be obliged to give up her place in the suite, the remaining person may be required to take a single room if one is vacant, or pay the price of the full suite during the time it is occupied by her alone. All applicants are supposed to retain their rooms for the entire year, or forfeit the \$10 deposit.

A person entering the Hall for the second semester only shall pay the price of the room charged for the second semester, with the additional sum of \$10.

The rooms of Chadbourne Hall are provided with rugs and furnished, but occupants are expected to provide washstand furniture, towels, napkin rings, sheets, pillow cases, counterpanes and blankets. The present cost of board in Chadbourne Hall is \$3.75 per week.

Chadbourne Hall has accommodations for one hundred fifteen women students. Applications will be received in excess of one hundred and fifteen, and vacancies during the year will be filled in regular order from the waiting list. The Hall is lighted by electricity, and the heating apparatus is connected with the central heating plant, so that the danger from fire is minimized. Elevators operated by electricity connect the several floors.

The young women who occupy this building are under the immediate charge of the Mistress; they must board in the Hall, and are expected cheerfully to conform with requirements necessary for a family of students.

ROOMS AND BOARD

Rooms, furnished and unfurnished, can be obtained in the city at prices per week ranging from \$2 to \$5 a person. The cost of board in clubs is from \$3 to \$4 a week; in private families and boarding houses from \$3.50 to \$4.50 a week. Many students obtain rooms or board in families or clubs by rendering service; but

these places are eagerly sought for, and cannot always be obtained at once. Those dependent upon themselves for support should not come to the University unless they have a reasonable fund.

DEGREES

FIRST DEGREES

The following baccalaureate degrees are conferred upon those who have successfully completed the prescribed courses of study, and who have complied with all other requirements of the University:—

Academic

BACHELOR OF ARTS, upon the graduates in the College of Letters and Science, except those from the course for normal school graduates, and from the course in Pharmacy.

BACHELOR OF PHILOSOPHY, upon the graduates from the course for normal school graduates.

Professional and Technical

BACHELOR OF LAWS.

BACHELOR OF SCIENCE, AGRICULTURAL COURSE.

BACHELOR OF SCIENCE, CIVIL ENGINEERING COURSE.

BACHELOR OF SCIENCE, MECHANICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, MINING ENGINEERING COURSE.

BACHELOR OF SCIENCE, ELECTRICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, CHEMICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, PHARMACY COURSE, upon graduates from the four-year course in Pharmacy.

BACHELOR OF SCIENCE, MEDICAL SCIENCE COURSE.

GRADUATE IN PHARMACY, upon graduates from the two-year course in Pharmacy.

GRADUATE IN MUSIC, upon graduates from the four-year course in Music.

A graduate of any of the courses may receive the baccalaureate degree of any other course by completing the additional studies required in that course. But two baccalaureate degrees cannot be taken in one year, and for a second bachelor's degree in the College of Letters and Science there are required one year's additional study and a special thesis.

The conditions on which the bachelor's degrees are given will be found stated under the appropriate colleges and courses on subsequent pages.

HIGHER DEGREES

The highest degree that the University confers in course is that of *Doctor of Philosophy*. The degree of *Master of Arts* is conferred as a second degree upon candidates who have received the degree of *Bachelor of Arts* or an equivalent, and the degree of *Master of Science* or *Master of Philosophy* upon candidates who have received the corresponding baccalaureate degrees. Candidates who have taken the degree of *Bachelor of Science* in one of the engineering courses may receive the degree of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer* or *Chemical Engineer*. The degree of *Master of Pharmacy* is conferred as a second degree upon *Graduates in Pharmacy*.

The condition on which these higher degrees are granted will be found stated under the Graduate School, and also under the various colleges.

THE COLLEGE OF LETTERS AND SCIENCE

EDWARD A. BIRGE, Dean.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. General Conditions

The credit is the standard for computing the amount of work required for graduation. This is equal to one hour of recitation or lecture per week for one semester. Two hours of laboratory work or two hours regularly prescribed military drill or physical exercise in the gymnasium are credited as one unit-hour. Students are expected to secure 15 credits per semester in recitations, lectures, and laboratory work, making 30 credits per year, and 120 for the course. In addition men are required to take two hours per week of gymnastics during the first two years, making a total of four credits. They are also required to drill two hours per week during the first two years, giving 4 credits. Women are required to take four hours of gymnastics per week during the first two years, giving 4 credits. The total requirements for class room work, military drill, and the gymnasium are, therefore, 128 credits.

Students excused from drill or gymnastics are required either to make up the work before graduation, or if the excuse is based on permanent incapacity, to make good the requirement by work in other departments. Women excused from gymnastics are required either to make up the work before graduation, or if the excuse is based on permanent incapacity, to make up one year's work by a course in hygiene and a course in theory of physical training.

No student will be permitted to receive more than 18 credits toward graduation in one semester in regular studies except by permission of the faculty, obtained in advance.

Students transferring from the Course in Commerce, or from another college of the University, can receive no more than 15 credits per semester toward graduation for work already done, except in semesters where all standings are 85 or above.

2. Required Studies

a. English, 6 credits (3 credits per semester for two semesters); to be taken in the first year of residence.*

b. Language: 16 credits for those who offer four units or more of foreign language at entrance; 24 credits for those who offer less than four units of language at entrance. The work shall be in year courses in two languages. Ordinarily the two must be chosen from the following groups: Greek (classical), Latin, French, German; but advanced work in another foreign language, to an amount not exceeding eight credits, may be substituted in part fulfillment of this requirement, on the following conditions:

(1) The student must study the language more than one year.
(2) Only the work beyond the first year ("advanced work"), can be substituted. The first year's work will be accepted toward the required credits for graduation, though not as part of the required credits of language.

c. Two of the following: Natural Science, 10 credits; Mathematics, 6 credits; History, 6 credits.

Under natural science are included biology, chemistry, physics, and geology. All are five credit courses with laboratory work, or field work in geology.

3. Major Study and Thesis

Major Study.—At the beginning of the sophomore or the junior year, every candidate for the degree of Bachelor of Arts shall select as his major subject the work of some one department in the College of Letters and Science. This department will determine the manner in which the work of the major shall be completed; the work required in the major (including thesis and required work) shall not be less than 20 credits, nor more than 40 credits; the thesis receiving 4 credits.

Thesis.—All candidates for a baccalaureate degree are required to present a graduating thesis, the subject of which shall be approved by the student adviser and filed with the chairman of the department in which the candidate is taking his major.

* On the completion of course 1, a provisional pass mark is given; if at any time later in his course a student is reported as deficient or careless in English composition he may be required to take additional work in that subject.

The thesis shall represent some phase of the student's work in the major study and shall be of a scholarly character. It shall be typewritten and bound according to specifications furnished by the Librarian of the University; and before it is accepted, it shall be approved by the instructor under whom the work has been done. It shall be deposited in the University Library by the Thursday before Commencement.

One of the following substitutes for the thesis may be allowed when, in the judgment of the department, it is advisable:

1. A course restricted to seniors and graduates, in groups of not more than ten, with written reports of independent work done in connection with the course under the supervision of the instructor.

2. An individual reading or research course, with frequent conferences between student and instructor and with written reports of independent work.

These substitutes shall involve work equivalent to at least four credits, and shall be so certified by the instructor on the report card of each student taking either substitute. The several papers of each student shall deal with correlated subjects, and shall be prepared with due attention to expression and to logical form. Before any student's papers shall be finally accepted as a whole, they shall be typewritten and bound together according to specification obtaining in the case of the thesis. They shall be deposited in the University Library by the Thursday before Commencement.

4. Electives

All work not included in 2 and 3 is elective, but there shall not be taken in any one department more than 40 credits, including required work in excess of 6 credits, major, and electives. High school work for which university credit is given shall not count as a part of these 40 credits.

5. Studies of the Freshman Year

In this year one study only is absolutely required: English 1, three times per week. All the other studies of the year must be chosen from the following groups:

GROUP I. At least one subject must be taken from this group

and not more than 10 credits may be chosen from any one subject.

Greek: 5 or 3 hours per week.

Latin: 5 or 3 hours per week.

German: 4 hours per week.

French: 4 hours per week.

Spanish: 4 hours per week (in the Course in Commerce).

GROUP II. At least one subject must be chosen from this group. Not more than 10 credits can be taken in any one subject.

Mathematics:

Algebra: 3 hours, one semester.

Trigonometry: 3 hours, one semester.

These courses in mathematics are repeated each semester.

Science:

Biology: 5 credits; 2 lectures, 4 laboratory periods, 1 recitation.

Chemistry: 5 credits; 2 semesters; 3 lectures, 3 laboratory periods, 1 recitation.

Physics: 5 credits; 2 semesters; 4 lectures, 2 laboratory periods, 1 recitation.

Geology: 5 credits; 2 semesters.

Astronomy: 3 credits, one semester.

History:

Ancient History: 2 credits; 2 semesters.

English History: 3 credits; 2 semesters.

Medieval History: 3 credits; 2 semesters.

The student may take 14, 15 or 16 credits from these studies. The combination may be made by adding to English (3 credits) two foreign languages from Group 1 (6 to 10 credits), with one subject from Group II (3 to 5 credits); or by taking but one foreign language (3 to 5 credits) with two subjects from Group II (6 to 10 credits). Students are advised to carry on the language, or languages, which they have had in preparatory schools. Those who come with a language preparation consisting only of two years of German will be expected to continue that subject during the freshman year.

The following courses which are open to freshmen will be found described under Departments of Instruction on the following pages. The figures following the name of the department

refer to the number of the course as given under the proper heading under Departments of Instruction.

English 1, Greek A, Greek 1, Latin A, Latin 1 and 2, French 1, 4, and 10, German 1, 2, 2A, Mathematics 1 and 2, History 1, 5, and 10, Biology 1, Chemistry 1, Physics 1, Geology 3, 4, Astronomy 1. The last named course cannot constitute a part of the required science.

ELECTION OF STUDIES IN OTHER COLLEGES

Candidates for the degree of Bachelor of Arts are allowed to elect in the College of Mechanics and Engineering, the Law School, the College of Agriculture, the Course in Pharmacy, the Course in Commerce, the School of Music, the Course in Home Economics, or the State Library School, certain studies enumerated below to an amount not to exceed the equivalent of 20 credits. This privilege will not be extended to normal graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of seniors. All candidates for the State Library School are required to pass a special entrance examination, held on the second Friday in June of each year.

When approved by the Dean of the College of Engineering, an additional election of six credits is permitted in the case of students who propose to proceed to the degree of Bachelor of Science, Civil Engineering.

In the application of the twenty-credits rule, above set forth, candidates for the degree of Bachelor of Arts, with the exception of seniors taking law studies, are not allowed to elect more than five of the twenty credits in any one semester. Studies in the Law School may be elected only by seniors.

Students who take the combined law and arts course in six years are not permitted to count toward their A. B. degree studies which are parallel to studies at present required in the Law School. Such studies are the course in Commercial Law, in the Course in Commerce (course 9, in the Department of Political Economy), and course 13, Constitutional Law, in the Department of Political Science.

Students who have graduated from the College of Letters and Science will be admitted to second year standing in the Law School, provided that while seniors in the College of Letters and

Science they completed fourteen credits in the prescribed work of the first year of the Law School, and in addition thereto have completed six credits of work in the College of Letters and Science from a group of studies to be designated by the faculty of the Law School. The studies designated for 1909-10 are as follows: Political Science 2, (Elementary Law), Political Science 9, (Roman Law), Political Science 18, (American Constitutional Law), Political Science 18, (International Law), Political Science 27 (Comparative Legislation).

The following studies may be elected:

In the College of Engineering:

- Mechanical Drawing, courses 1, 2, and 3.
- Applied Mechanics, 1, 2, 3, 4, 5, and 6.
- The Materials of Construction, 1, 2, and 3.
- Topographic and Geodetic Engineering, 1, 2, 3, 4, 5, and 6; also 9 and 10.
- Railway Engineering, 5.
- Hydraulic Engineering, 1 and 2.
- Structural and Sanitary Engineering, 1, 2, 3, 10, and 11.
- Hydraulic and Sanitary Engineering, 1, 2, and 4.
- Steam Engineering, 3, 4, and 5.
- Mechanical Laboratory, 1 and 2.
- Machine Design, 1, 3, and 4.
- Applied Electromagnetism and the Construction of Dynamos, 1 and 2.
- Alternating Currents and Alternating-current Machinery, 1, 2, 3, 4, 5, and 6.
- Applied Electrochemistry and Electrometallurgy, 1, 2, 3, and 5.
- Electric Installations, 4 and 10.

In the Law School:

- Administrative Law, 1, 2, 3, 4.
- Contracts.
- Commercial Paper.
- Real Property.
- Torts.
- Private Corporations.
- Constitutional Law.
- Wills.
- Domestic Relations.

Common Law Pleading.

Equity.

Evidence.

Agency.

Public Service Companies.

The law courses in italics may be taken only after suitable preliminary studies. Applications for these advanced studies must be made to the committee in charge, consisting of the Dean of the Law School and Professor Reinsch.

In the College of Agriculture:

Agricultural Chemistry, 1, 2, and 4.

Soils, 1 and 2.

Animal Husbandry, 24.

Veterinary Science, 25.

Horticulture, 6, 7, and 8.

Bacteriology, 20.

Agricultural Engineering, 2.

For students presenting a minor in Agriculture for the University Teacher's Certificate, the following courses may be elected.

Agricultural Chemistry, 1, 2, and 4.

Agricultural Economics, 1, and 26.

Agricultural Engineering, 1, 2, and 4.

Agronomy, 1, 2, and 20.

Animal Husbandry, 1, 2, 20, and 21.

Bacteriology, 1, 20, and 22.

Dairy Husbandry, 1, and 2.

Horticulture, 1, 2, 6, 7, 8 (8 for women).

Soils, 1, 2, and 20.

In the Course in Commerce:

All courses except 8a and 8d in Business Administration, which can only be taken in addition to the required 120 units, by students of suitable preparation.

In the Course in Home Economics:

General Survey 1.

Art and Design 2.

Course 3. Selection and Preparation of Food. Prerequisite, High school Chemistry or Physics; or, First Semester Chemistry 1.

Courses 4 to 10, inclusive, provided necessary prerequisites are met. For details see Home Economics.

In the Course in Pharmacy:

All courses except Pharmacognosy under Botany and the courses in the Department of Pharmacy.

In the Course in Music:

Courses 2 to 15, inclusive.

The courses which may be elected in the State Library School include those on Reference, Loan, Classification, Library Economy, Public Documents, Subject Bibliography, Cataloguing, Book Selection, and such other courses as may be agreed upon by the Director of the Library School and the Dean of the College of Letters and Science, or some member of the faculty appointed by him. They may be elected only by qualified candidates in the junior and senior years, to an amount not exceeding ten credits in each year.

REQUIREMENTS FOR A DEGREE IN THE COURSE IN COMMERCE

Students who have completed the regular four years' course of the Course in Commerce will receive the degree of *Bachelor of Arts*. (See Index.)

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

Students who have completed the regular four years' course of the Course in Pharmacy will receive the degree of *Bachelor of Science, Pharmacy Course*. (See Index.)

REQUIREMENTS FOR A DEGREE IN THE COURSE IN MEDICAL SCIENCE

Students who have fulfilled the necessary requirements will receive the degree of *Bachelor of Science, Medical Science Course*. (See Index, under Medical School.)

The departments which constitute the Medical School are at present also constituent departments of the College of Letters and Science. The courses offered in these departments are open for election to any students in the College of Letters and Science who are prepared to take them. Candidates for the degree of *Bachelor of Arts* are not permitted to matriculate in the College of Medicine for more than one year. Candidates for the degree of *Bachelor of Science (Medical Science Course)* may be registered two years in the Medical School. They may, with

the consent of their advisers, elect up to eighteen credits per semester, and may confine their work to the science and language groups of studies. The language requirements are those required for admission to the Medical School (see Index).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF PHILOSOPHY

Course for Normal School Graduates

Graduates of the advanced courses of the normal schools of the state are admitted to advanced standing in the College of Letters and Science on conditions given under the heading Admission (see Index). The following special course for normal school graduates has been arranged, leading in two years to the degree of *Bachelor of Philosophy*. The course contains a minimum required amount of advanced studies in philosophy and education, with opportunity for further elections in those subjects. It requires also a continuous study of foreign language during the two years of the course. In other directions the student may elect his studies. It is expected that the normal school graduate will give especial attention to fitting himself for teaching in one or two of the main lines of instruction, and the requirements and electives have been so arranged as to permit him to attain this end. He may devote himself especially to science, to literature, to history, or to any combination of these studies. He will be required, however, to make one of these lines of study his major work, and will not be permitted to elect a large number of short, scattered courses of instruction, since it is the especial design of this course to enlarge and complete his knowledge in certain definite directions.

The attention of the student is called to the necessity of planning his course from the beginning so as to satisfy the requirements for a major and thesis.

Junior Year: Latin, French, or German 4; philosophy 3; advanced education 3; language history, English, advanced mathematics, or science 5; electives 3.

Senior Year: Continuation of Latin, French, or German 4; electives 9; thesis 2.

Any member of the course who offers work in foreign language equal in amount to that required of candidates for the degree of *Bachelor of Arts* will not be required to pursue courses in for-

eign language in the University; and no student in this course will be required to do more work in foreign language than is demanded for the degree of *Bachelor of Arts*.

Military drill and gymnastic exercises are not required of normal school graduates, no matter what course they may enter.

GRADUATION IN LESS THAN FOUR YEARS

The attention of students is called to the announcement of the Summer Session of the University, as given on subsequent pages of the catalogue. Work in the Summer Session will be credited in the same way as work in the regular session of the University, and by attendance at one session a total amount of credit may be acquired not exceeding six credits.

Candidates for the degree of *Bachelor of Arts* who desire to graduate in three years may do so by obtaining 18 credits per semester and by attending three summer sessions. Permission to take work to this amount will be given only to students whose standing in their studies is wholly satisfactory. No credit will be given for repetition in the Summer Session of studies taken in the regular session of the University, or for repeating in the University work done in the summer. Students will need to select carefully their work for the summer with reference to the required and elective studies of the course in which they intend to graduate. The Summer Session offers exceptional opportunities for the preparation of a senior thesis. Any student who expects to shorten his course by means of the Summer Session should consult his adviser in selecting his studies.

STUDENT ADVISERS

Upon entrance, each student in the College of Letters and Science is assigned to a member of the faculty who acts as his adviser during the freshman and sophomore years. At the beginning of the junior year, at which time, if not before, the student selects his major study, a member of the department in which his major is chosen becomes his adviser. Each semester, the student is required to consult his adviser concerning the choice of studies, and the adviser must give his approval before the student is permitted to enter classes.

THE UNIVERSITY TEACHERS' CERTIFICATE

In accordance with the laws enacted by the legislature of 1907, section 458b-2, certificates are issued to all graduates of a regular collegiate course who complete the course in pedagogical instruction prescribed by the University of Wisconsin. This certificate, when presented to the State Superintendent, entitles the holder to receive a license to teach in any public school in Wisconsin for one year. Graduates who have received this certificate and present satisfactory evidence of good moral character and one year of successful teaching after graduation, are entitled to receive from the State Superintendent an unlimited state certificate.

For requirements for teachers' certificate, see Index.

DEPARTMENTS OF INSTRUCTION

ANATOMY

PROFESSOR BARDEEN; ASSOCIATE PROFESSOR MILLER; ASSISTANT PROFESSOR ALLEN; MR. WAHL.

For a fuller description of the courses offered in this department, see announcements under Medical School.

For Undergraduates and Graduates

5. Comparative Anatomy of Vertebrates. *M., W., F., 2 to 4. Three credits.* Mr. ALLEN.
6. Medical Zoology. *First semester; Tu., Th., 2 to 4. Two credits.* Mr. ALLEN.
10. Histology and Organology. *M., W., F., 9 to 12. Four credits.* Dr. MILLER.
15. Vertebrate Embryology. *Second semester; Tu., Th., 2 to 5. Three credits.* Dr. BARDEEN and Mr. ALLEN.
16. Embryology of the turtle and chick. *Second semester; Tu., Th., 10 to 12. Two credits.* Mr. ALLEN.
21. Human Anatomy. *Throughout the year; daily 8 to 5. Six credits per semester.* Dr. BARDEEN, Dr. MILLER and Mr. WAHL.
22. Topographical Anatomy. *First semester; Tu., Th., 2 to 5. Three credits.* Dr. MILLER.
23. Special Human Anatomy.
26. Neurology. *Second semester; M., W., 9 to 12. Three credits.* Dr. MILLER.
30. Advanced Work in Anatomy.
31. Historical Seminary. Dr. MILLER.

Primarily for Graduates

35. Investigation under Direction.
36. Journal Club.
40. Independent Investigation.

ASTRONOMY

PROFESSOR COMSTOCK.

For Undergraduates

1. General Astronomy. A rapid survey of the fundamental concepts of astronomy, supplemented by a direct study of the sky. *First semester; M., W., F., 12.*

For Undergraduates and Graduates

13. Spherical Astronomy. Apparent motion of the celestial sphere. Astronomical coordinates and their transformation. Parallax. Refraction. Time. Use of the ephemeris. *First semester; M., W., 10.*
14. Practical Astronomy. Theory and use of the sextant, theodolite, transit, and equatorial. *Second semester; M., Tu., W., Th., 2 to 4.*
16. Orbital Motion. The differential equations of undisturbed motion and their integrals. Computation of ephemerides. Orbits of double stars and comets. *Throughout the year; conference M., at 11, with two or four hours of laboratory work a week.*

For Graduates

20. Perturbations. The general equations of disturbed motion. Special perturbations. Mechanical quadratures, with numerical applications. A continuation of course 16, and open only to students who have completed that course or its equivalent.
22. The Method of Least Squares. The theory with application to numerical computations. *Throughout the year; conference F., at 11, with two or four hours' laboratory work a week.*
25. Research Courses. Graduate students and others desiring to pursue advanced astronomical studies will be received in the Washburn Observatory as assistants, and will take part in the regular series of observations with the equatorial telescopes or with the meridian instruments, at the same time continuing their theoretical studies. Facilities for independent original work will be afforded to such stu-

dents, and their work, if of sufficient value, will be printed in the *Publications of the Washburn Observatory*.

For other courses of instruction consult the title Astronomy in the announcement of the College of Engineering.

BACTERIOLOGY AND HYGIENE

PROFESSOR RAVENEL; ASSOCIATE PROFESSORS FROST, HASTINGS; DR. FULLER, MR. NELSON, MR. WRIGHT, DR. BROWN, MR. ELDRIDGE, MISS ARMSTRONG, MR. NEUMANN.

For students desiring a general laboratory course in Bacteriology, course 1 should be taken. Chemistry and General Biology should precede this work. On the basis of this general course, the student is then able to take up special work in General and Sanitary (course 4), Dairy (course 21), Agricultural (course 20), Home Economics (course 9), Bacteriology. Course 1 followed by courses 2, 9, 20, 21 or 23, are prerequisites for major work in bacteriology. Special courses are offered for medical students (course 2), and engineers (course 8). Elementary courses, without laboratory work, are open to all (7) and (6).

Primarily for Undergraduates

1. General Bacteriology. A course designed to give an understanding of the morphology and physiology of bacteria, and laboratory training in cultural and microscopical technique. *Repeated each semester; three credits.* Given in the College of Letters and Science. *Lectures; Tu., Th., 11; two laboratory periods of two hours each per week.* Mr. FROST, Mr. FULLER, Mr. NELSON, Miss ARMSTRONG and Mr. NEUMANN.
3. Thesis Work in Bacteriology. Students who desire to select their theses in this department must take course 1 in their junior year or before, and if the subject is selected in any other than general biological lines, the special work in medical, sanitary, or agricultural bacteriology, respectively, should be taken in the second semester of the junior year. The subject should be selected before the close of the junior year. Mr. RAVENEL, Mr. FROST and Mr. HASTINGS.
6. Communicable Diseases: Lectures and assigned reading dealing with the causes and means of preventing Communicable Diseases. It is desirable that this course be preceded by Course 7.

7. General Hygiene: Lectures and assigned reading dealing with the subjects of personal and public hygiene. The subject is considered from a general rather than a technical standpoint and is open to all students in the University. A number of outside experts in hygiene, as well as professors in other departments, will lecture to the class. *First semester; one credit.* Mr. RAVENEL and Mr. FROST.

For Undergraduates and Graduates

2. Medical Bacteriology. A consideration of the relation of bacteria to disease processes in man and animals. A course designed to give students who intend to study human or veterinary medicine, a survey of the subject of pathogenic bacteria. This course should be taken by students intending to devote themselves to general bacteriology. *First semester; lectures and laboratory; five credits.* Mr. RAVENEL, Mr. BROWN.
4. Advanced Work in Bacteriology. Students who have had sufficient preliminary work (course 1 and courses 2, 9, 20, and 21, or their equivalent) will be assigned special problems for study. *Laboratory work and conferences.* Mr. RAVENEL, Mr. FROST, Mr. FULLER.
When the number of students warrants it this course will be extended to include work in practical hygiene.
8. Biology and Chemistry of Water Supplies. This course considers the technique of water examination, the hygiene of water-borne diseases, the examination of filters, the disposal of sewage, and the interpretation of analyses, bacteriological and chemical. *Lectures and laboratory work; three credits.* Mr. RAVENEL, Mr. FULLER.
9. Industrial Bacteriology. This course includes a study of the micro-organisms and processes concerned in the more common fermentations. It is intended especially for students in home economics and for chemical students who do not have the time for the more extended courses in medical or agricultural bacteriology. Prerequisite, course 1. *Three or five credits.* Mr. FROST, Miss ARMSTRONG, Mr. NEUMANN.
11. Immunity. Includes a study of the phenomena and theories of immunity in general as well as the various infectious diseases. Lectures and reports. Open only to advanced students. Mr. RAVENEL.

- 11a. Laboratory Course in Immunity. This is an experimental course and includes a study of cytotoxins, agglutinins, precipitins, toxins, antitoxins, opsonins, etc. *First semester; two credits or more.* Mr. FROST.
12. Pathogenic Protozoa. This includes a study of the most important of the protozoa known to cause human and animal diseases. Open only to advanced students. Lectures, demonstrations and reports. *Second semester; one credit.* Mr. FROST.
20. Agricultural Bacteriology. A consideration of the relation of bacteria to agricultural processes. Prerequisite, course 1. *Four credits. Second semester, lectures, Tu., Th., 9; two laboratory periods.* Mr. RAVENEL, Mr. HASTINGS and Mr. WRIGHT.
21. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter and cheese. Prerequisite, courses 1, 20. *Three credits. First semester, lecture, W., 11; two laboratory periods.* Mr. HASTINGS and Mr. WRIGHT.
22. Transmissible Diseases of Animals. A study of relation of bacteria to disease processes in animals. Prerequisite, courses 1, 20. *Three credits. Second semester; lectures, Tu., Th., Sat., 11.* Mr. RAVENEL.
23. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, courses 1, 20. *Three credits. First semester; lecture, W., 10; two laboratory periods.* Mr. HASTINGS and Mr. WRIGHT.
40. Journal Club. A club consisting of instructors and advanced students in the department meets every second week throughout the year. Advanced students are required to report on the progress in science along lines assigned to them by the program committee. This necessitates the reading of current scientific journals furnished by the department.

Primarily for Graduates

5. Research Work in Bacteriology. Opportunity is offered for work in original investigation, which may be arranged for on consultation. A reading knowledge of French and German is necessary. Mr. RAVENEL, Mr. FROST, Mr. HASTINGS.

BIOLOGY

Study in the biological sciences is conducted in the independent, though coordinated departments of Zoology, Botany, Anatomy, Physiology, Pathology, Pharmacology and Toxicology, and Bacteriology and Hygiene. The purpose of these departments is to offer the fullest possible facilities for the study of biological problems.

The Madison lakes give this university peculiar advantages for biological work. Science Hall is located only a few hundred feet from Lake Mendota, and abundant apparatus is available for the collection and study of the lake fauna and flora. The facilities of the Wisconsin Geological and Natural History Survey are also available at all times. The libraries of the University and the Wisconsin Academy of Sciences, Arts and Letters afford exceptional advantages in the way of literature.

1. General Biology. Introductory to botany, zoology, anatomy, physiology and bacteriology, and required as a preliminary to all advanced work in these departments. The first semester is devoted to a study of the general principles of biology as illustrated by plants; the second to zoology. Students can enter the course in either semester. *Five credits per semester. Lectures, M., W., 3. Mr. HARPER, Mr. HOLMES. Eight hours of laboratory work and one quiz per week. Miss ALLEN, Mr. ALLEN, Miss BACHMAN, Mr. GEE, Mr. GESELL, Mr. GLOYER, Miss JOLIVETTE, Mr. JUDAY, Mr. McALLISTER, Mr. MELHUS, Miss MERRILL, Mr. OVERTON, Mr. PRITCHARD, Mr. B. G. SMITH, Mr. G. M. SMITH, Mr. STOUT, Mr. WAGNER.*

BOTANY

PROFESSORS HARPER, ALLEN; ASSISTANT PROFESSORS DENNISTON, MARQUETTE, OVERTON; MR. STOUT; DR. ALLEN, MISS BACHMAN, MR. GLOYER, MISS JOLIVETTE, MR. McALLISTER, MR. MELHUS, MR. PRITCHARD, MR. RUSSELL, MR. SMITH.

For Undergraduates and Graduates

1. General Botany. The first semester of Biology 1, for which see index. *Five credits.*

2. Morphology. Course 1 is a prerequisite.

(a) Algae. An outline of the development of the different series and their relationships, and discussion of problems of research in connection with the various groups. *First semester; M., Tu., 2 to 4. Two credits.* Mr. HARPER, Mr. OVERTON, Miss ALLEN.

(b) Fungi. Parallel to course 2a, and taking up the morphology of the various groups of fungi with especial emphasis upon those of economic importance. *First semester; W., Th., F., 2 to 4. Three credits.* Mr. HARPER, Mr. OVERTON, Miss ALLEN.

(c) Bryophytes and Pteridophytes. A study of types of liverworts, mosses, ferns, equisetum, and lycopods. *Second semester; Tu., Th., 2 to 4; lecture Tu., 3. Three credits.* Mr. ALLEN, Miss ALLEN.

(d) Seed Plants. A study of the life histories of a few types of gymnosperms and angiosperms. *Second semester; M., W., F., 2 to 4; lecture F., 3. Three credits.* Mr. ALLEN, Miss ALLEN.

5. Vegetable Histology. A systematic study of the tissues of seed plants and ferns. Use of reagents and stains, section cutting and mounting. Required of all students in pharmacy. *First semester; M., W., F., 11 to 1. Three credits.* Mr. DENNISTON, Mr. RUSSELL.
6. Physiology of the Seed Plants. Lectures and laboratory work on the special physiology of the vascular plants. *Second semester; lectures, Tu., Th., 11; laboratory hours to be arranged. Four credits.* Mr. HARPER, Mr. OVERTON, Mr. STOUT.
7. Cytology. General physiology of organisms. Lectures and experimental work on the reproduction, irritability and nutrition of the cell. Prerequisite, courses 2 and 3, and an ability to read German is desired. *Daily; hours on consultation.* Mr. HARPER, Mr. OVERTON, Miss ALLEN.
8. Mycology. Special work on the morphology and classification of the fungi is offered to advanced or graduate students. *Hours on consultation.* Mr. HARPER.
11. Bryology. Special work on the morphology and classification of the bryophytes is offered to advanced or graduate students. Prerequisite, courses 1 to 4, or their equivalent. *Hours on consultation.* Mr. ALLEN.

9. Elementary Morphology and Physiology. A combined course for those who are taking a teacher's minor in botany. Prerequisite, Botany 1. *Second semester. Five units.* Mr. OVERTON.
12. Dendrology. A study of the structure and characteristics of forest trees. Lectures, laboratory, and field work. Prerequisite, course 1 or its equivalent. *Second semester; two credits.* Mr. DENNISTON.
13. Botanical Methods. Practice will be given in the preparation of laboratory outlines and in methods of growing various algae and fungi for use in the class room. Prerequisite, courses 1 to 4. *Second semester; two credits.* Mr. HARPER, Miss BACHMAN.
14. Hybridization, Parthenogenesis, and special problems in the fertilization of the angiosperms. A discussion of some of the more fundamental principles of plant breeding. Prerequisite, course 1 or its equivalent. *First semester; two credits.* Mr. OVERTON.
15. Botanical Seminary. For the study of special subjects in general physiology, and for the presentation of the results of investigation. Mr. HARPER.
16. Research. Students whose preparation is adequate may on consultation be assigned special subjects of investigation. *Daily.* Mr. HARPER, Mr. ALLEN, Mr. DENNISTON.
17. Facts and Theories of Heredity. A discussion of theories of heredity in the light of the results of recent experimental and cytological investigations. Prerequisite, course 1 or its equivalent. *Second semester; two lectures a week and assigned readings. Two credits.* Mr. ALLEN.
18. Phycology. Special work on the morphology and classification of fresh-water and marine algae is offered to advanced or graduate students. Prerequisite, courses 1 to 4, or their equivalent. *Hours on consultation.* Mr. ALLEN.
19. Plant Reactions. A course of lectures on the responses of plants to external stimuli, with descriptions of the more modern apparatus for research on the physiology of the cell, and occasional demonstrations. *Second semester; two credits.* Mr. MARQUETTE.

20. Description and Classification of Cultivated Plants. A brief systematic course for agricultural students dealing with the structure and relationships of the common crop plants and weeds. *First semester; two credits.* Mr. HARPER, Mr. STOUT.
21. Colloquium. Reports and discussions of the literature bearing on problems under investigation in the laboratory. Mr. ALLEN.
30. Morphology and Classification of the Seed Plants. An elementary course designed primarily for students of pharmacy and agriculture, but open to others who desire to begin the study of botany. The life histories and ecology of seed plants, with a special study of types of economic importance, such as drug and cultivated plants. Field work will be an important feature. *M., Tu., W., Th., F., 8 to 10. Second semester. Excursions on Saturdays. Five credits.* Mr. DENNISTON, Mr. MELHUS.
31. Microscopical Examination of Drugs and Food Products. The object of this course is to study and illustrate the methods of identifying powdered drugs and food products, and of detecting adulterations. *Second semester; M., W., F., 11 to 1; three credits.* Mr. DENNISTON.
32. Pharmacognosy. This course presents to the student the main facts of the natural history of drugs, and the plants producing them. Required of all students in pharmacy. *Throughout the senior year; two credits.* Mr. DENNISTON.
33. Pharmacognosy. For three-year or four-year pharmacy students. The course consists in a study of the microscopic structure and characteristics of further types of drugs. Required of all seniors. *First semester of the senior year; three credits.* Mr. DENNISTON.
34. Pharmacognosy. An abridgment of the work given to pharmacy students is offered for those intending to study medicine. As far as may be, the methods used are those detailed for the foregoing courses. *First semester; three credits.* Mr. DENNISTON.
35. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. *First semester of the junior year; one credit.* Mr. DENNISTON.

CHEMISTRY

PROFESSORS FISCHER, KAHLENBERG, KREMERS, LENHER; ASSISTANT PROFESSORS KOELKER, WALTON; MR. CURRIE, MR. HILL, MR. KLEIN, DR. KRAUSKOPF, DR. MATHEWS, DR. WILCOX; MR. AUGSPURGER; MR. BARNES, MR. DEMING, MR. DU MEZ, MR. ELLINGSON, MR. GERMANN, MR. HAMMOND, MR. HUBBARD, MR. KOENIG, MR. MANN, MR. NEBEL, MR. SHAW, MISS WAKEMAN.

Primarily for Undergraduates

1. General Chemistry. A general introductory course. In the first semester the work consists of the chemistry of the non-metals, while the second semester is devoted to the metals and qualitative analysis. *Lectures M., W., F., 10.* Mr. KAHLENBERG; Mr. WALTON, and assistants.
2. General Chemistry for Freshmen in the College of Engineering. Two experimental lectures and two two-hour laboratory periods per week. *Lectures Tu., Th., 10.* Mr. KAHLENBERG; Mr. WALTON, and assistants.
3. General Chemistry for Students in Pharmacy. The first semester is devoted to the chemistry of the non-metals and to inorganic preparations, while in the second semester the work consists of qualitative analysis. *Lectures M., W., F., 10.* Mr. KAHLENBERG; Mr. WALTON and Mr. DuMez.
4. Thesis. Work for the baccalaureate thesis may be elected in any branch of chemistry in which the student has sufficient preparation. Not later than the beginning of the senior year the work should be arranged with the professor under whom it has been elected. *Two credits per semester.*
5. The Teaching of Chemistry. A course considering both the matter to be presented and the methods of teaching to be adopted in a high school course of chemistry. The prerequisites for the course are course 1, the first semester of course 20, and five unit-hours work in course 11; the latter may be taken during the same semester as this course. Two credits toward the University Teachers' Certificate will be allowed students who have completed this course. *Two lectures or recitations per week during the second semester.* Mr. WALTON.

6. Advanced Inorganic Chemistry. Required of students in Pharmacy. Course 3 is a prerequisite. *First semester; five credits. Lectures and recitations, Tu., Th., F., 10.* Mr. KREMERS, Mr. MANN.
11. Quantitative Analysis. Introductory laboratory course accompanied by weekly lectures. Mr. LENHER; Mr. WILCOX, Mr. BARNES, Mr. AUGSPURGER.
- 11a. Quantitative Analysis. For agricultural students and for students specializing in sanitary, food or physiological chemistry. Introductory laboratory course with lectures and recitations. Mr. FISCHER; Mr. WILCOX, Mr. BARNES, Mr. AUGSPURGER.
18. Alkaloid Assay. One hour required of students in the pharmacy course during second semester. Additional work may be elected upon consultation. Mr. FISCHER.
20. Organic Chemistry. Lectures and Laboratory work. In the first semester the work will be chiefly on the aliphatic, and in the second semester on the aromatic compounds. *Lectures Tu., Th., 8, and six hours laboratory work per week.* Mr. KOELKER, Mr. CURRIE.
- 20b. Organic Chemistry. For students in Pharmacy. Two-hour course. Recitations and laboratory work consisting largely in the preparation of the simpler organic chemicals used in medicine. Mr. KOELKER, Mr. DUMEZ.
27. Advanced Organic Chemistry. Required of students in Pharmacy. *Second semester. Tu., Th., F., 10, and laboratory work. Five credits.* Mr. KREMERS and Mr. MANN.
40. Plant Chemistry. A three hour study supplementary to Pharmacognosy (Botany 22). *Lecture or Recitation, M., 10.* Mr. KREMERS and Miss WAKEMAN.

For Undergraduates and Graduates

7. History of Chemistry. A general survey of the history of the development of modern chemistry. *One lecture per week with topics during the first semester. Two credits.* Mr. KREMERS.
12. Quantitative Analysis. An advanced laboratory course, being a continuation of course 11 which must precede it. Mr. LENHER.
13. Gas Analysis. A laboratory course with lectures. *First semester.* Mr. FISCHER.

14. Water Analysis. A laboratory course with lectures. *First semester.* Mr. FISCHER.
16. Industrial Analysis. A laboratory course in the analysis of commercial products. *Second semester.* Mr. FISCHER.
17. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. *At least two periods a week.* Mr. LENHER.
19. Proximate Organic Analysis. A course in the proximate analysis of organic products. *First semester; three credits.* Mr. FISCHER.
21. Preparation of Organic Compounds. This course may be taken as a continuation of course 20. The work will consist of the preparation of typical compounds of a more advanced nature. Mr. KOELKER, Mr. CURRIE.
23. Seminary in Organic Chemistry. Advanced students meet weekly to report on assigned topics relating to researches in organic chemistry. Mr. KOELKER.
24. Advanced Organic Chemistry. Two lectures a week on selected topics. Mr. KOELKER.
28. Chemistry of Alkaloids. General survey course of the chemistry of alkaloids. *One lecture a week; second semester.* Mr. FISCHER.
29. Chemistry of the Volatile Oils, including their botanical relation and assay. *Work arranged upon consultation with the instructor.* Mr. KREMERS.
30. Physical Chemistry. Lectures and recitations supplemented by laboratory exercises in physico-chemical measurements. Must be preceded by chemistry 1. *Lectures and recitations. M., W., 8; and laboratory work. Five credits.* Mr. KAHL-ENBERG, Mr. MATHEWS.
31. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electrochemical measurements supplements the lectures. *First semester; lectures: Tu., F., 8. Five credits.* Mr. MATHEWS.
32. Thermal Chemistry. Lectures and assigned readings dealing with the thermal phenomena accompanying chemical and physical change. *Second semester; lectures: Tu., at 8; and one three-hour laboratory period a week.* Mr. MATHEWS.

41. Plant Chemistry. Supplementary to plant physiology. *Three to five credits either semester, or throughout the year.* Mr. KREMERS.
46. Chemistry of Foods and their Adulterations. Prerequisites are General Chemistry 1, and one semester's work each in quantitative analysis, and organic chemistry. *Second semester. Five credits.* Mr. FISCHER.

Primarily for Graduates

22. Research Work in Organic Chemistry. Students desiring to become acquainted with the methods of research in organic chemistry may take work leading to theses for higher degrees. Mr. KOELKER.
34. Chemical Equilibrium. The subject treated during the first semester is the Phase Rule. The second semester will be devoted to the study of Chemical Dynamics. *One lecture or recitation a week.* Mr. WALTON.
35. Advanced Physical Chemistry. Lectures on selected topics. *Second semester; F., 8.* Mr. MATHEWS.
36. Advanced Electrochemistry. A course in the preparation of chemical compounds by means of electrolysis. *Hours to be arranged.* Mr. KAHLBERG, Mr. MATHEWS.
37. Research Work in General or Physical Chemistry. Students having sufficient training may take up research work in general or physical chemistry, for which every facility is furnished. This course is especially designed for graduates seeking higher degrees. *Hours to be arranged.* Mr. KAHLBERG.
38. Seminary in General and Physical Chemistry. Original articles of importance will be studied in detail, with a view to broaden and deepen the understanding and to act as a stimulus to further research. W., 4. Mr. KAHLBERG and Mr. WALTON.
42. Research work on alkaloids and the chemistry of foods. *Hours to be arranged.* Mr. FISCHER.
43. Research work on volatile oils or other subjects of organic chemistry, with special reference to plant chemistry. *Hours to be arranged.* Mr. KREMERS.
44. Seminary in Plant Chemistry. Discussion of topics of organic chemistry, with special reference to plant chemistry. *Every other Wed., 4.* Mr. KREMERS.

51. Advanced Inorganic Chemistry. In 1911-12, a course of lectures will be given in which special attention will be directed to the discussion of modern theories of chemistry. *Tu., Th., 11.* Mr. LENHER.
52. Inorganic Preparations. This course is preliminary for those intending to pursue research work in inorganic chemistry. *Laboratory work with one lecture or conference a week.* Mr. LENHER.
53. Research Work in Inorganic Chemistry. Full facilities are offered to those desiring to study systematically some of the more important problems in inorganic chemistry. Mr. LENHER.
54. Seminary in Inorganic Chemistry. Special topics in inorganic chemistry will be studied, reference being constantly made to the original published matter. Mr. LENHER.
55. Mineral Analysis. In 1910-11, a course of two lectures per week will be given on the methods used in the analysis of minerals. Mr. LENHER.

COMPARATIVE LITERATURE

COMMITTEE IN CHARGE: PROFESSOR OLSON; ASSOCIATE PROFESSORS GIESE, SHOWERMAN; ASSISTANT PROFESSORS DODGE, (Chairman) AND KIND.

The following scheme of courses in Comparative Literature was drawn up by conference of the various language departments as one means of correlating their work. It is designed to meet two main needs. (1) That of undergraduates who have not the command of foreign languages necessary to the fundamental study of international types and movements in literature, but who may wish to secure a general understanding of some of the more important of these. It is for this class of students that courses 1-5 were devised, the work of which, in so far as foreign literatures are concerned, will be conducted by means of translations. (2) That of graduate students, properly equipped with foreign languages, who may wish to supplement their work in particular literatures with detailed study of special interrelations. Courses of this compara-

tive character have not infrequently been offered, and are being offered, by the different departments. The present scheme incorporates all such as are now in existence and provides others, some of which lie entirely outside the scope of any one department.

For Undergraduates

Comparative Literature 1. Ancient Classical Epic. Its origin and development. Homer's *Iliad* and *Odyssey*; Virgil's *Aeneid*. The reading is in translations. *First semester*; *Tu., Th., at 12.* (Omitted in 1910-11.) Mr. C. F. SMITH.

Comparative Literature 2. Renaissance Epic: the *Divine Comedy*, the *Orlando Furioso*, the *Jerusalem Delivered*, the *Faery Queen*, and *Paradise Lost*. The first three are read in translations. *Second semester*; *Tu., Th., at 9.* (Omitted in 1910-11.) Mr. DODGE.

Comparative Literature 3. Ancient Classical Drama. The reading will be in translations. *First semester*; *two hours a week.* (Omitted in 1910-11.)

Comparative Literature 4. Modern Classical Drama. The reading of foreign drama will be in translations. *Second semester*; *two hours a week.* (Omitted in 1910-11.)

Greek 13. Greek literature in English translations: the drama. *First semester*; *two hours a week.* Mr. SMITH. (Given in 1910-11.)

Comparative Literature 5. Latin and Renaissance Drama. A survey of the drama of Rome with special emphasis on Plautus, Terence and Seneca: the revival of classical drama in Italy, France, and England during the fourteenth, fifteenth and sixteenth centuries. Plays not English will be read in translation. Open to graduates. *Second semester*; *two hours a week.* (Given in 1910-11.) Mr. SHOWERMAN and Mr. CUNLIFFE.

For Graduates

Comparative Literature 15. Introduction to Medieval Drama. The liturgical system of the medieval church and each manifestation of liturgical drama within this system will be studied in detail. *First semester*; *M., at 2.* (Omitted in 1910-11.) Mr. YOUNG.

German 46. Medieval Drama in Germany. The development of the drama up to the Renaissance, including the *Fastnachtspiele*. *First semester; Th., 4 to 6.* (Omitted in 1910-11.) Mr. EVANS.

French 52. Medieval French Drama. *Second semester; F., 2 to 4.* Mr. H. A. SMITH.

English 49. English Religious and Didactic Drama. From the beginnings to the entrance of the Renaissance. *Second semester; M., F., at 2.* (Omitted in 1910-11.) Mr. YOUNG.

Latin 18. Roman Satire from Ennius to Juvenal. The origin and development of formal literary satire among the Romans, with special reference to the works of Lucilius, Horace, Persius, and Juvenal. *First semester; Th., 4 to 6.* Mr. FISKE.

Comparative Literature 16. Modern Classical Satire in Italian, French and English. From the beginnings in the sixteenth century to the close of the eighteenth. *Second semester; F., 4 to 6.* (Omitted in 1910-11.) Mr. DODGE.

Comparative Literature 17. French and Italian influences in English poetry in the second half of the sixteenth century. Careful study of types, pastoral, lyric, epic, etc., and in particular of the literary relations of Spenser. *Throughout the year; two hours a week.* (Given in 1910-11.) Mr. DODGE.

For description of the courses which follow, the student is referred to the various departmental announcements.

French 26. The Novel in Romance Countries. Mr. CERF.

French 43. The Cycle of the Crusades. Mr. SMITH.

French 48. The Beginnings of Medieval Literature. Mr. REED.

French 50. The Arthurian Epic. Mr. SMITH.

German 38. Shakspeare in Germany. Mr. KIND.

German 42. The Literary Relations of England and Germany in the Eighteenth Century. Mr. KIND.

German 43. German Literature in America. Mr. GOODNIGHT.

English 46a. The Ballad. Mr. BEATTY.

EDUCATION

PROFESSORS ELLIOTT, O'SHEA; ASSOCIATE PROFESSOR HENMAN; ASSISTANT PROFESSOR TRESSLER; MR. SEARS, DR. STARCH; MR. SIMMERS, MR. WEBER.

The chief aim of the work in this department is to treat education in its history, foundations, and practice in the spirit of contemporary thought. To this end, groups of courses are offered in each of the following: (1) The historical evolution of educational ideals, institutions, and practices, as a basis for the intelligent interpretation of modern American education; (2) The more important educational movements of the present day; (3) The principles of mental development in the child and the race, with particular reference to educational aims and processes; (4) Educational psychology as a basis for the principles of teaching, and of educational methods and practice; (5) Principles of education viewed in the light of contemporary biological, sociological, and psychological thought; (6) The organization, administration, and methods of supervision of public education; (7) Seminary and research courses in each of the main divisions of education, the purpose of which is to investigate and discuss in a critical manner unsolved problems in the several fields covered; (8) The observation of teaching under expert supervision.

Courses 1, 6, 11, 13, and 41 are regarded as introductory, and are the only courses which may be elected in fulfillment of the requirements for the University Teachers' Certificate, except in the case of graduates of Normal Schools, who are not permitted to elect any of these courses in fulfillment of requirements either for a degree, or for the University Teachers' Certificate. Students below the junior class are not admitted to any course in education except permission be obtained from the instructor in charge.

Major in Education

Undergraduate students selecting education as a major subject will be required to obtain credit in approved courses amounting to twenty-two hours, inclusive of credit for thesis. Graduate students selecting education as a major will be expected to show familiarity with the elementary subjects in each of the divisions

of education before they will be admitted to candidacy for either a master's or a doctor's degree.

Note: Students who are interested in the courses described below, but who cannot devote more than six or eight hours to the work are advised that it would be best to elect two courses for two hours each in the junior year, and complete the work in the senior year.

Primarily for Undergraduates

1. History of Modern Education. A study of the development of educational standards and institutions in Europe and America during the past century. *Two or three credits.* Lectures, discussions, and papers. *First semester; M., W., F., 11. Repeated second semester at same hour.* Mr. SEARS.
6. Public Education. An introductory survey of the American system of public education as an expression of the ideals of democracy: organization, characteristic features and contemporary tendencies. For elementary students in Education. *First semester. Tu., Th., 9.* Mr. ELLIOTT.
11. Mental Development. A study of (1) the general characteristics of development; (2) the theory of recapitulation in development; (3) motor development; (4) intellectual development; (5) social development; (6) mental economy and hygiene in development. *Two or three credits. First semester; M., W., F., 10. Repeated the second semester, M., W., F., 9.* Mr. O'SHEA.
13. Principles of Education. The foundations of educational theory viewed in the light of contemporary thought. Also practical problems of the curriculum and methods of teaching, accompanied by observation of work in the schools of Madison. *Two or three credits. First semester; M., W., F., 9. Repeated the second semester, M., W., F., 10.* Mr. O'SHEA.
41. Educational Psychology. (a) Lectures and demonstrations. *Tu., Th., 11.* (b) Laboratory practice parallel with lectures. *One laboratory period of two hours a week at hours to be arranged.* An introductory course in psychology is prerequisite for this course. *First semester; and repeated in the second semester. Two or three credits.* Mr. HEN-MAN.

For Undergraduates and Graduates

2. History of Education. A general survey of ancient and medieval educational theories and institutions, with special attention to their bearing upon present-day educational problems. Lectures, discussions, and assigned readings. *Two or three credits*. Not offered during 1910-11. *First semester*; M., W., F., 8. Prerequisite, course 1. Mr. SEARS.
- 4a. State School Systems. A study of the principles of organization, and of the typical agencies for the administrative control of state educational systems. Prerequisites, course 1, or 6, or 13. Open to graduates of normal schools. *Two or three credits*. *First semester*. Tu., Th., 10. Mr. ELLIOTT.
- 4b. Municipal School Systems. A study of the organization, administration and supervision of public education in American cities. Special attention to contemporary problems and to the development of supplementary agencies in public education. Prerequisite, course 1, or 4a, or 6, or 13. Open to graduates of normal schools. *Second semester*. Tu., Th., 9. Mr. ELLIOTT.
5. Comparative Educational Administration. A comparative study of the educational systems of Germany, France, and England, with special emphasis upon those features possessing significance for American education. Lectures, class discussions and special reports. *Two credits*. *Second semester*; S., 9 to 11. Mr. ELLIOTT. (Omitted 1910-11.)
12. Social Education. The social nature of pupils at different periods of development, together with a study of methods of managing individuals and groups in the school room, on the playground, etc., so as to make them socially efficient. Prerequisite: Course 11 or 13. Open to graduates of normal schools. *First semester*, W., F., 3. Mr. O'SHEA.
15. Contemporary Educational Movements. Contemporary movements affecting courses of study, the general character and method of teaching, and school organization and management. Prerequisite, course 1 or 13. *First semester*; M., W., 12. Mr. SEARS.

16. Educational Classics. With reference particularly to present problems respecting the nature and training of childhood and youth. Readings in Plato, Aristotle, Plutarch, Quintillian, Montaigne, Locke, Rousseau, Mill, and Spencer. Prerequisite, course 1 or 13 or 11. *Second semester; M. W., 12.* Mr. SEARS.
32. Seminary in Administration and Supervision of Education. Special subject for 1910-1911, Educational Finance. Study of the cost of public education in rural and urban communities. Prerequisite, course 4a or 4b. *One or two credits. Tuesdays, 7:30-9:30.* Mr. ELLIOTT.
33. Supervision of Instruction. The principles, methods, and problems of the supervision of instruction, with special reference to elementary and secondary schools of smaller cities. Special reports on basis of observation and study of instruction in typical elementary and secondary schools. Prerequisite, course 4b, or 6, or 13. Open to graduates of normal schools. *Two or three credits. Second semester. Tu., Th., 10.* Mr. ELLIOTT.
42. Research in Education. Students who wish to prepare theses on subjects dealing with educational psychology are expected to register for this course during the last semester of the junior year, or the first semester of the senior year. Prerequisite, course 11, 14, or 41. *Throughout the year.*
43. Seminary in Educational Psychology. Assigned topics and reports on recent experimental studies and researches in educational psychology. *Throughout the year; on alternate Wednesdays, 4 to 6.* Mr. HENMAN.

Primarily for Graduates

14. Genetic Psychology. The psychology of development in respect to some of the principal types of educational work. Prerequisite, course 11, 13, 17 or 41. Open to graduates of normal schools. May be elected successively, for the subject matter of the course is changed annually. Given alternately with course 17. Not offered 1910-11. *W., 7 to 9.* Mr. O'SHEA.
17. Educational Values. A detailed inquiry concerning the values of studies and methods in present-day American education. Given in alternate years with Course 14. Prerequisite,

site, course 11, 13, 14, or 41. Open to graduates of normal schools. W., 7-9 p. m. Mr. O'SHEA.

20. Seminary in Education. The investigation and discussion of current educational problems. Each member is required to undertake a piece of research, and report upon it during the year. Prerequisite, course 11, 12, 13, or 14. Open to graduates of Normal Schools. Th., 7 to 9. Mr. O'SHEA.
44. Advanced Educational Psychology. One lecture or laboratory hour a week with assigned readings on selected topics. *Throughout the year; may be elected by semesters. credits.* Mr. HENMAN.
46. Experimental Education. A course of experiments in the laboratory and in the public schools designed to acquaint the student with experimental methods, and the results of recent investigation of school problems. Prerequisite, course 41. *First semester; hours to be arranged. Two credits.* Mr. HENMON.

University Teachers' Certificate

For the courses in education which may be taken in fulfillment of the requirements for the University Teachers' Certificate, see Index under Teachers' Certificate.

ENGLISH

PROFESSORS CUNLIFF, FREEMAN, HUBBARD; ASSOCIATE PROFESSORS DICKINSON, LATHROP, PYRE; ASSISTANT PROFESSORS BEATTY, CAIRNS, DODGE, LEONARD, ROE, WOOLLEY, YOUNG; MISS ASHMUN, MISS BERKELEY, DR. ELLIOTT, MR. GARDNER, MR. LOMER, MR. MANCHESTER, MR. NEIDIG, MR. NEILSON, DR. PERROW, DR. WATT; MR. OWEN, MISS STREET, MISS WALES.

The courses of the department are intended to serve five main purposes: (1) to train students in the use of English as a means of expression and communication for the ordinary demands of social, commercial and professional life; (2) to continue that training to suit the special needs of those who intend to take up journalistic or literary work; (3) to develop the literary sym-

pathy and appreciation and to extend the knowledge of those who find in English and American literature the readiest means of obtaining the advantages of a liberal education; (4) to prepare teachers of English for school and college work; (5) to fit students for and assist them in scholarly investigation. Most of the courses will be found to meet all these needs, directly or indirectly, but some are especially directed to one or two in particular. Every student will be encouraged to select the courses most suited to his or her own needs, but certain courses are prescribed as necessary for due equipment in particular lines of work.

Undergraduate Courses

All students in the colleges of Letters and Science, Engineering, and Agriculture are required to take Freshman English.

The General Survey is regarded as a necessary preliminary to the other literature courses, and should therefore be taken in the sophomore year by those who think of making English their major study in the junior or senior years; this course (30) is also recommended for those who desire a general knowledge of English literature, but are unable to carry their study of the subject further.

Students taking English as an elective outside of the major study are advised to select courses mainly from the undergraduate group. Those who make English their major study, after providing for the required courses, may choose at will from this or the following group (for undergraduates and graduates); and duly qualified seniors are admitted to the courses primarily for graduates at the discretion of the professor in charge of each course.

English as a Major Study

Students intending to choose English as their major study are strongly recommended to take General Survey (30) in their sophomore year.

At the beginning of their junior year, they should consult the head of the department, who will assign them to an adviser for help in the choice of courses and general direction of their studies. They are required to take, in addition to the thesis, twenty-four credits as a minimum, exclusive of course 1 (required of all students). Course 30 must be included. A total of thirty-six credits, in addition to the thesis and course 1, may

be taken. No courses in public speaking except 5 and 11 may be taken as part of the major work in English.

Students who are not candidates for the teacher's certificate are free to choose any courses they wish after satisfying the requirements of Freshman English and General Survey.

For Teachers

Candidates for the teacher's certificate choosing English as their major are required to take, in addition to the thesis, twenty-four credits as a minimum, exclusive of course 1 (required of all students). Courses 30, 20a and 50 (*a* and *b*) must be included. A total of thirty-six credits, in addition to the thesis and course 1, may be taken. Students who have had an adequate training in Latin or Greek may substitute some other English course for 20a; and any student may substitute courses 23 and 25 for 20a with the approval of his adviser.

Those choosing English as their minor are required to take, in addition to course 1 (required of all students), course 30; 50a, or 2, or 6 (first semester); and one of the following groups: (a) 34 and 35; (b) 36 or 37; (c) 40.

Major of Candidates for Ph. B.

Candidates for the degree of Ph. B. choosing English as their major subject are required to take twenty credits, including the thesis, provided that they have taken courses equivalent to 1 and 30. If such equivalent courses have not been taken, 1 and 30 must be taken in addition to the twenty credits.

Library Work

English literature is an important part of the sound general education which forms the best foundation for success in library work, and its relation to the more specific needs of the profession is obvious. Students who take the joint course arranged at the University and the State Library School may therefore find it to their advantage to choose English as their major study. Of the twenty hours of library work for which credit is given by the University four may be counted towards an English major, if the candidate so desires, reducing the minimum departmental requirement to thirty credits. In addition to courses 1 and 30, which are required of all, library students are recommended to select courses of a more general character from the group pri-

marily for undergraduates, especially 34, 35, 36 or 37, 39, 52, 40, 46b, and 47. For detailed information in regard to preparation for library work, see Index under Library Training and a special bulletin entitled Courses in Library Training.

Preparation for Journalism

As the study of English is an important part of training for journalism, students preparing themselves for this profession may find it to their advantage to take English as their major. For students taking English as a major in preparation for journalism the only required courses are 1 and 30; a maximum of ten units for professional courses in journalism may be credited towards the major. Other English courses considered advantageous for journalistic work are those in composition (1, 2, 3, 6); American literature (40, 47), Nineteenth Century literature (34, 35), English drama (36, 37, 52), and the novel (39). The technical instruction given in the courses in journalism includes (a) theory and practice of journalistic methods, (b) history and development of the American press, and (c) organization and management of a modern newspaper; together with a series of special lectures on various phases of journalistic work, given by newspaper men in active service. The students in the classes in journalism edit the Daily Cardinal as a part of their practical work. For detailed information as to the courses in preparation for journalism see Index under Journalism and a special bulletin for 1910-11 entitled "The Course in Journalism."

RHETORIC AND COMPOSITION

For Undergraduates

- A. English Composition for students who have failed to pass the test prescribed on page 78. *Two hours a week.* Mr. WOOLLEY, Miss WALES.
- 1.* Freshman English. English prose style. Composition. The elements of effective writing in prose, based upon direct study of selected authors, with training in composition. *Throughout the year; three credits. Thirty-five sections. For hours and rooms see time table of required*

* On the completion of course 1, a provisional pass mark is given; if at any time, later in his course, a student is reported deficient or careless in English composition, he may be required to take additional work in that subject.

- studies.* Required of all freshmen in the colleges of Letters and Science, Agriculture, and Engineering. Mr. HUBBARD, Mr. LATHROP, Mr. BEATTY, Mr. CAIRNS, Mr. DODGE, Mr. LEONARD, Mr. ROE, Mr. WOOLLEY, Mr. YOUNG, Miss ASHMUN, Miss BERKELEY, Mr. ELLIOTT, Mr. GARDNER, Mr. LOMER, Mr. MANCHESTER, Mr. NEIDIG, Mr. NEILSON, Mr. PERROW, Mr. WATT, Mr. OWEN, Miss STREET, Miss WALES.
2. Sophomore Composition. Elective for students who have finished the required English for the freshman year. *Throughout the year; Tu., Th., 8, 9, and 11.* Four sections. Mr. DICKINSON, Mr. YOUNG, Mr. PERROW, and Miss BERKELEY.
 3. Technical Writing. This course is designed to meet the requirements of those students who, while specializing in technical or scientific studies, desire training in composition to aid in the writing of theses and special reports. *Throughout the year; Tu., Th., 12.* Mr. DICKINSON.
 4. Commercial Correspondence. Its varieties and principles. Taken for credit only as part of a technical course. *Second semester; Tu., Th., 10.* Mr. GARDNER.
 6. Advanced Composition. Elective for juniors and seniors, and for sophomores who have done very good work in course 1. *Throughout the year; Tu., Th., 11.* Three credits. Mr. DODGE.

For Argumentation see Public Speaking, Course 11a.

ENGLISH LANGUAGE

Primarily for Undergraduates

25. The English Language. An elementary study of the development of the English language, with special reference to matters significant for the interpretation of literature. Open to sophomores, juniors, and seniors. *First semester; M., W., F., 9.* Mr. HUBBARD.

For Undergraduates and Graduates

- 20a. Anglo-Saxon. This course is designed to furnish a basis for the more advanced study of English philology, and to give an introduction to the history of the English language. *First semester; M., W., F., 9.* Mr. HUBBARD and Mr. BEATTY. In 1910-11 20a will be repeated the second semester.

- 20b. Middle English. A continuation of course 20a. The historical development of English is traced, and the general principles of linguistic science are illustrated. *Second semester; M., W., F., 9.* Mr. BEATTY.
23. Modern English Grammar. The facts of modern English grammar are considered in the light of the historical development of the language, the general principles of linguistic science, and the psychology of speech. *Second semester; M., W., 9.* Mr. HUBBARD.

Primarily for Graduates

22. Beowulf. The whole poem is read critically; its relation to the literature of other Germanic languages is considered. As far as possible, the course is made to serve as an introduction to the study of old Germanic life. Open to seniors. *First semester; M., W., F., 8.* Mr. HUBBARD.
21. Anglo-Saxon Poetry. A continuation of course 22. Especial attention is given to the lyric and epic poems that are least affected by christianity. *Second semester; M., W., F., 8.* Mr. HUBBARD.
24. English Philology Seminary. Critical study of texts; historical grammar; dialects. The work is varied from year to year. The subject for 1910-11 will be Middle English of the Fourteenth Century. *Throughout the year; Tu., Th., 10.* Mr. HUBBARD.

ENGLISH LITERATURE

Primarily for Undergraduates

30. General Survey of English Literature. This course consists of two parts: (1) lectures on the history of English literature from the earliest times to the middle of the nineteenth century; and (2) a careful study in small tutorial groups of the works of representative authors of each period. As an introduction to the study of English literature, this course is prerequisite to all other courses in English. It is required of sophomores taking English as their major, and is recommended to students desiring a single course in English literature.
- Section 1, M., W., F., 8.* Mr. DICKINSON.

Section 2, M., W., F., 9. Mr. PYRE.

Section 3, M., W., F., 10. Mr. YOUNG.

The tutorial groups meet every Monday and Wednesday at the regular class hour. There will be five tutorial groups for each section.

Particulars will be found in the Outlines for English 30, a copy of which must be purchased at the office of the Regents by every student taking the class.

34. The Romantic Movement. Lectures and collateral reading upon the earlier phases of the movement from Thomson to Blake are followed by particular study of representative poetical works of Coleridge, Wordsworth, Byron, Shelley, and Keats. *First semester; M., W., F., 10.* Mr. PYRE.
35. The Victorian Era. This course is a continuation of 34, and is similar in method, with a somewhat larger share of attention to the prose of the period. The works for particular study are those of Carlyle, Ruskin, Newman, Tennyson, Browning, Rossetti, Arnold, and Morris. *Second semester; M., W., F., 10.* Mr. PYRE.
36. Elizabethan Drama. A study of English dramatic literature from the beginning to the year 1642. Lectures and assigned reading. *Throughout the year; M., W., F., 11.* (Given 1910-11.) Mr. YOUNG.
36. The Drama. Shakspeare. A part of the first semester is devoted to the history of the development of the drama, the remainder of the year to Shakspeare. *Throughout the year; M., W., F., 11.* (Omitted 1910-11.) Mr. FREEMAN.
37. Shakspeare. A short review of the political, social, and literary conditions of the Elizabethan age is followed by a careful study of selected plays. Recommended to students who intend to teach Shakspeare in high school. *Throughout the year; M., W., F., 11.* Mr. CUNLIFFE and Mr. ELIOTT.
52. Modern Drama. A survey of English dramatic literature from the Restoration to the present time. Lectures, collateral reading, and analysis of plays. *Throughout the year; Tu., Th., 11.* Mr. PYRE.
39. The Novel. (1) Introduction: the principles of prose fiction. (2) the English novel from Defoe to George Eliot. *Throughout the year; Tu., Th., 10.* Mr. LATHROP.

40. American Literature. A general survey of literary writings in America. One hour a week will be devoted to lectures; during the second hour the class will meet in smaller groups for the study of selections from the works of representative authors. The course should be preceded or accompanied by course 30. *Throughout the year; Tu., Th., 9 and 10.* Mr. CAIRNS.
48. The Literary Aspects of the English Bible. This course includes a general view of the influence of the translations of the Bible on the language and literature of England, and a study of representative portions of the Old Testament prose narrative and lyric poetry. *First semester; M., W., F., 11.* Mr. LATHROP.
- 50a. The Teaching of English. This course presents the aims, methods and organization of the English work for the first two years in high school, with special emphasis on the teaching of composition; it includes practice work in the correction of themes. Two sections. *First semester; Tu., Th., 12, and M., W., 12.* Mr. BASSETT.
- 50b. The Teaching of English (Continuation of 50a). This course deals with the work of the third and fourth years, with special emphasis on the teaching of literature; it includes a study of the classics used in high school reading. *Second semester; Tu., Th., 12.* Mr. BASSETT.

Observation of teaching in the high school is required in each course. 50a and 50b are required of all candidates for the teacher's certificate (English major); 50a or an advanced composition course is required of all candidates for the minor teacher's certificate in English. Students who intend to teach English literature are advised to take both 50a and 50b.

54. Modern English Prose. A study of representative modern prose writers, with special reference to the characteristics of style. *First semester; Tu., Th., 11.* Mr. DICKINSON.

In accordance with the regulations as to the provision of substitutes for the senior thesis (see p. 108) the department will offer courses (restricted to seniors who have elected English as their major study), in which students will meet one hour a week in groups of not more than ten for intensive study of particular authors or subjects, written reports being handed in from time to time on topics assigned by the instructor in charge. A

list of the instructors giving such courses and of the subjects may be found in the circular of the Modern Language departments.

For Undergraduates and Graduates

31. Chaucer. After an introductory study of Chaucer's language and grammar, as many of the *Canterbury Tales* are read as time allows. The *Parliament of Foules* and the Prologue to the *Legend of Good Women* are also read. *Second semester; M., W., F., 12.* Mr. HUBBARD.
42. Versification. The student is presented with a working theory, after which the course proceeds with the history of English verse forms and the analysis of particular compositions. *Second semester; Th., 2 to 4.* (Omitted 1910-11.) Mr. PYRE.
45. Browning. This course aims at explaining Browning's relation to the poetic development of the nineteenth century, his characteristic methods, his outlook on the life and thought of his time, and his view of the art of poetry. *First semester; Tu., Th., 11.* (Omitted 1910-11.) Mr. CUNLIFFE.
- 46a. The Ballad. A study of the English and Scottish popular ballads in connection with their European and other analogues in popular ballad and tale. The results obtained will be applied to the problem of the origins of poetry. *First semester; Tu., Th., 9.* Mr. BEATTY.
- 46b. Literary Criticism. In 1909-10 the subject will be English literary criticism of the nineteenth century, its origins and development. Coleridge, Hazlitt and Arnold will be centres of study. *Second semester; Tu., Th., 9.* Mr. BEATTY.
47. Significant Movements in American Literature. Different aspects of the development of American literature are taken up for detailed consideration; in 1910-11. Literature in New England 1833-83, as affected by political and philosophical movements: first semester, the anti-slavery writers and their related contemporaries; second semester, the transcendentalist writers and their related contemporaries. Open to graduates, and to undergraduates who have completed course 40 or its equivalent. *Throughout the year; W., 2 to 4.* Mr. CAIRNS.

Primarily for Graduates

19. Critical Bibliography of English Literature. Required of all graduates making English their major study. *First semester; Th., 4.*
49. English Religious and Didactic Drama. A detailed study, in lectures and assigned reading, of English mystery plays, moralities, and "interludes," with a consideration of their relations to preceding liturgical drama and to continental literatures. *Second semester; M., F., 2; Th., 2 to 4.* (Omitted 1910-11.) Mr. YOUNG.
51. Predecessors of Shakspeare. History of the development of the English drama up to Shakspeare, with special consideration of the work of Greene, Kyd, Lyly, and Marlowe. *Second semester; Tu., Th., 9.* (Omitted 1910-11.) Mr. DICKINSON.
53. Shakspearean Criticism. History of Shakspearean criticism, textual and aesthetic, from its beginnings to the present time. Students will be directed to make themselves acquainted with the methods and results of modern scholarship. *First semester; Tu., Th., 9.* (Omitted 1910-11.) Mr. CUNLIFFE.
55. Shakspeare's Later Contemporaries. The English Drama from Ben Jonson to The Closing of the Theatres. The dramatic history of this period will be studied, mainly through the examination of typical plays with reference to their source and aim, and to social and theatrical conditions. *Throughout the year; Tu., Th., 12.* (Omitted 1910-11.) Mr. PYRE.
56. Sixteenth Century Prose. A survey of the chief prose writers of the period and their chief works, with some attention to intellectual and social conditions and to varieties of prose style. *First semester; Tu., Th., 9.* Mr. DODGE.
57. Milton. Students will be expected to read all of Milton's poetry and some of his important works in prose. The course is designed to give them as thorough an acquaintance as possible with his work as a whole. *Second semester; Tu., Th., 9.* Mr. DODGE.

58. English Poetry from Dryden to Cowper. *First semester; M., 2 to 4.* Alternates with course 56. (Omitted 1910-11.) Mr. LATHROP.
59. English Prose from Dryden to Burke. *Second semester; M., 2 to 4.* Alternates with course 57. (Omitted 1910-11.) Mr. LATHROP.
44. English Literature Seminary. The subject varies from year to year: for 1909-10, Chaucer; for 1910-11, Phases of Thought in Victorian Poetry. *Throughout the year; Tu., 4 to 6.* Mr. CUNLIFFE, Mr. BEATTY.

GEOLOGY

PROFESSORS LEITH, WINCHELL; ASSISTANT PROFESSORS BLACKWELDER, MARTIN, WHITEBECK; MR. MEAD, MR. STEIDTMANN.

Physics, chemistry and mineralogy are required of all who make geology a major study. Exceptions may be made for students taking major in physical geography. These subjects should be taken either before or during the first year's course in geology. They are also desirable for students taking geology not as a major. Students lacking chemistry and physics will be allowed to enter course 1 only by special arrangement with the instructors. Such students are advised to take course 4, Physical Geography.

Students entering courses in mineralogy as a training in science should have a general knowledge of chemistry, at least equivalent to that derived from a high school course. No other preliminary courses are required.

Courses 8 to 24 are advanced courses, adapted for graduate students, or for students who have had at least one full year in the department of geology.

Primarily for Undergraduates

1. General Geology. An elementary survey of the materials of the earth, its construction, the working of the destructive and constructive agencies within the earth and upon its surface, and the history of the earth with its plant and animal inhabitants. Excursions are made to points in the

vicinity where geological processes and forms are illustrated. An elementary knowledge of physics and chemistry is required. *First semester; 12; five credits.* Mr. BLACKWELDER.

2. Applied Geology. This includes economic geology, principles of map interpretation, and field geology. Prerequisite, course 1 or its equivalent. *Five credits. Second semester.* The work is divided as follows: (a) Geology of North America by districts and the principles of map interpretation. Indoor field work, in which geologic maps supply the material used. This involves the interpretation of rock structure and geologic history from such facts as are usually obtained through field work. *First half of second semester; hours to be arranged.* Mr. BLACKWELDER. (b) Field Geology. The study and mapping of selected areas adjacent to Madison. Involves preparation of geologic maps, and written reports. The course includes a two-day trip to the Baraboo Ranges. *Twelve hours a week (optional hours) for the last twelve weeks of the second semester.* Mr. BLACKWELDER.
- 2a. Short Course in Geology. An elementary non-technical course for those who wish a brief survey of the field of general geology. *Second semester; M., W., F., 12 with occasional laboratory periods.* Three credits. Mr. WHITEBECK.
3. Short Course in Geography. A treatment of physical and world geography, as in Geology 4, except that there is no laboratory work. *Lectures M., W., F., 9. Quiz section at hours to be arranged. Three credits a semester.* Mr. MARTIN.
4. Physiography and Geography. The lands, the atmosphere and the oceans. Illustrated by regional studies of the physiographic and topographic provinces of the United States, and by a review of the regions of the world. *Lectures, M., W., F., 9; laboratory sections and quiz section at hours to be arranged. Five credits a semester.* One all-day excursion (Saturday) in fall and spring to Blue Mounds and to the Dales of the Wisconsin. Mr. MARTIN and assistants.

- 4a. Physical Geography for Commerce students. This course embraces the essential principles of course 4, with a sufficient treatment of the physiography of the United States to prepare the student for Economic Geography. May not be taken by others than Commerce students. *First semester; M., W., F., 10; and quiz hour to be arranged. Three credits.* Mr. WHITBECK.
- 4b. Economic Geography (for Commerce students). A general survey of the geography of the commercial nations, excluding the United States, with emphasis upon the leading causes which underlie their industrial and commercial activities. *Second semester; M., W., F., 10, and quiz hour to be arranged. Three credits.* Prerequisite, course 4a. Mr. WHITBECK.
5. Regional Geography. Description of a region and the geology, topography, physiographic history, climate and natural resources of the several parts; influence of geographical conditions on manner of life, industries, cities, and historic events. In the first semester (a) the Geography of North America or, in alternate years, (b) the Geography of Europe. In the second semester the Geography of Wisconsin. Geology 3, or 4, or 4a, or 1, or an equivalent prerequisite. *Tu., Th., 10, and conference hour to be arranged. Three credits a semester.* Mr. MARTIN.
6. General Mineralogy. The course begins with an elementary study of crystallography, after which the physical and chemical characters of minerals are reviewed. Descriptive mineralogy follows with laboratory work in blowpipe methods and determinative mineralogy. It is desirable that a college course in general chemistry be taken first, but students who have had a high school course in chemistry may take mineralogy by special arrangement with the professor in charge. Physics and trigonometry should also be taken, if possible. *First semester. Lectures, M., W., Th., F., 11; laboratory, Tu., 2 to 4. Second semester. Lectures, Tu., Th., 11; laboratory, M., W., F., 2 to 4; five credits a semester.* Mr. WINCHELL and Mr. STEIDTMANN.
7. Short course in Mineralogy. The principles of mineralogy and crystallography are briefly treated, and attention is given to a few of the commonest minerals and to some of

the most important ore minerals. *First semester; M., W., F., 2.* Mr. STEIDTMANN.

- 7a. Short course in Petrology. The purpose of this course is to enable the student to identify those rock minerals and rocks which can be determined in field specimens by simple megascopic methods without the aid of elaborate diagnostic methods. *Second semester; Tu., Th., F., 2 to 4; three credits.* Mr. STEIDTMANN.

For Undergraduates and Graduates

8. Petrology. The course in petrology is intended to give the student a practical knowledge of rocks of all kinds. A review of the principles of optics as applied to the polarizing microscope is followed by the microscopic study of the important minerals and rocks. Prerequisite, course 6. *M., W., F., 8 to 10; three credits each semester.* Mr. WINCHELL.
9. Advanced Physiography. A second course on the physical geography of the lands, involving both the topical and regional study of processes and features of the earth's surface. Prerequisite, Geology 4, or 1 and 2, or an equivalent. *Second semester; hours to be arranged; two credits.* Mr. MARTIN.
10. The Teaching of Physical Geography. Includes both subject matter and methods. Considers (1) the aims in teaching physical geography in the high school; (2) the phases of the subject which deserve emphasis; (3) the relation of the subject to others in the curriculum; (4) materials for the teachers' use; (5) field and laboratory work. Prerequisite, Geology 4 or an equivalent. *First semester; Tu., Th., 11; two credits.* Mr. WHITBECK.
11. Economic Geology. Emphasis is placed on the occurrence, origin, and development of metallic minerals, involving a summary of the principles of metamorphism and ore deposits given in course 15. Excursions are taken to iron, copper, lead and zinc districts accessible from Madison. The course includes also a study of water, building materials (of mineral origin), soils, coal, petroleum, natural gas, and minor non-metallic mineral products. Chemistry 1, Mineralogy 6 or 7, and Geology 1 and 2 are prerequisites for this course. *Second semester; 4; five credits.* Mr. LEITH and Mr. MEAD.

12. Historical Geology. The pre-human history of the earth and its living things. The origin of the earth, the changes of geography and climate, and the growth of mountains are among the things considered. The evolution of animals and plants is treated in its relation to the physical changes. Prerequisite: courses 1 and 21, or an adequate knowledge of biology. *Second semester; 10; five credits.* Mr. BLACKWELDER.
14. Principles of Structural Geology. The behavior of rocks under fracture and flowage, requiring the discussion of joints, faults, folds, and cleavage, from field, experimental and mathematical standpoints. *Lectures and laboratory work. First semester; Tu., Th., 3.* Mr. LEITH and Mr. MEAD.
15. Metamorphism. The course is based largely on the survey monograph on this subject by President Van Hise. *Lectures and laboratory work. First semester; 4; five credits.* Mr. LEITH and Mr. MEAD.
16. Metamorphic Laboratory. Quantitative study of the processes of metamorphism dealt with in courses 11 and 15. *Throughout the year; M., W., 2 to 4. Two credits.* Mr. MEAD.
17. Principles of Pre-Cambrian Geology. This course treats of the pre-Cambrian stratigraphy of North America, and with the problems of correlation, structure and metamorphism to be met in the study of the ancient crystalline rocks. U. S. Geological Survey specimens and slides from all the principal areas of pre-Cambrian rocks of North America are available for study. Alternates with course 18. (Given in 1909-10.) *Second semester; Tu., Th., 3.* Mr. LEITH.
18. Lake Superior Geology. A course offered because of the scientific and commercial importance of the Lake Superior region, and the relations of this department to its study. At the close of the course in the spring, an excursion is made to points of geological and economic interest in the Lake Superior country. Given in alternate years with course 17. *Second semester; Tu., Th., 3.* Mr. LEITH and Mr. MEAD.

19. Petrology of Lake Superior Rocks. Study of selected rock types of the Lake Superior region and the problems of mineral paragenesis and rock metamorphism connected therewith. Prerequisite, course 8. *Three credits.* Mr. WINCHELL.
20. Advanced Mineralogy. Special problems in mineralogy or detailed crystallographic work. Prerequisite, course 6. *Hours to be arranged.* Mr. WINCHELL.
21. Paleontology. A brief study of the more important groups of animals and plants, with special reference to the extinct types which have been prominent in the various periods of geologic history. The course is designed to serve as a foundation for course 12. *First semester; three credits, Tu., Th., S., 9.* Mr. BLACKWELDER.
22. Research Work. Offered by the members of the department in continuation of their respective courses. The amount of time that can be allotted is subject to special arrangement.
23. Geological Seminary. Subjects under investigation by the members and students of the department, and reviews of important publications are discussed. *Hours as arranged.*
24. Advanced Map Study. Essentially in-door field-work. Geologic and topographic maps furnish the facts used. The course affords practice in the solving of geologic questions such as occupy the attention of the professional geologist in the field. Prerequisite, Structural Geology. Course 12 is desirable as preparation. Laboratory work and individual conferences. *Second semester; at optional hours; two credits.* Mr. BLACKWELDER.
25. Field Work for Advanced Students. Two or three weeks in May are spent in geologic mapping of some selected area. The party goes into camp and divides the expense. In 1910 the field will be the west end of the Menominee iron range of Michigan. *Three credits. Second semester.* Mr. LEITH, alternating with Mr. BLACKWELDER and Mr. MEAD.

GERMAN

PROFESSORS HOHLFELD, VOSS; ASSOCIATE PROFESSOR EVANS; ASSISTANT PROFESSORS GOODNIGHT, KIND, PROKOSCH, ROEDDER, STERLING; DR. BRUNS, DR. FEISE, DR. HAERTEL, DR. HAUSSMANN, DR. HICKS, DR. MORGAN, DR. REINHARD, DR. VEERHUSEN; MR. ARON, MR. DEHL, MISS ERNST, MR. HEILMANN, MR. JONES, MR. RIEDER, MR. SCHAFFRATH, MISS STEINFORT.

The courses in German are divided into the following four groups:

A. The elementary courses represent the work ordinarily done in first and second year classes, and are so graded as to meet the needs of high school graduates with different degrees of preparation. Students without previous work in German enter course 1; those who have had two years of high school German enter course 2, 2L, 2S, 2C, or 2E; those who have taken three years of German in the high school enter course 2A, completing the equivalent of course 2 by the end of the first semester. Freshmen with four years of high school German are not allowed to enter any of these elementary courses. They should take up German 3A, unless their general course of study requires a special class in German, like 3S or 3C. Students who possess a thorough practical knowledge of German considerably in advance of what their high school work indicates, should present themselves for an informal examination with a view of being assigned to more advanced classes. Credit for the omitted lower work will, however, be granted only in exceptional cases, regulated by special rules of the faculty, and never without a formal examination.

B. The advanced practice courses differ much in character and grade of work, but have this in common, that they do not deal chiefly with literature, but are intended for specific, practical ends, definitely stated in each case. None of these courses is required of students wishing to study German solely for its literature. Such students after completing course 2, should select their work from courses 15 to 20, though some of the work in composition, conversation, or sight reading may be advisable in connection with their literary courses.

C. The courses from 15 to 48 are literary courses of very different degrees of advancement, those from 40 to 48 being open to undergraduate students only in exceptional cases. Many of the less advanced courses, from 15 to 28, though different in subject matter, are of about the same grade. Elections from this group therefore, are subject to certain restrictions stated below, after course 28. Ordinarily, about twelve credits from courses 15 to 28 will be adequate preparation for the more advanced work in literature, as well as for the more elementary courses in philology. Students intending to specialize in German literature are advised to do related work in English literature, in medieval and modern history and in philosophy. They should also pursue, to a fair degree of advancement, the study of at least one other foreign language and literature, ancient or modern. Their attention is also called to the courses mentioned under "Comparative Literature."

D. The courses from 50 to 65 are devoted to work in German philology. While most of these courses are intended for graduate students working for a higher degree in German, some of them are well suited to the needs of advanced undergraduates. This is especially true of courses 50 and 51, which are required of all students expecting to teach German as their principal subject; but also of courses 52, 53, 57, and 59, all of which are so conducted as to be of direct benefit to properly qualified seniors.

Major in German

Students beginning the study of German in the University with course 1 will generally not be able to choose German as their major to good advantage. Students taking course 2 in their freshman year should, as a minimum, devote to German eight credits a year for the remaining three years, taking thus, including the thesis, a total of twenty-four credits in advance of course 2. At least eight of these credits should represent class work in advance of course 28. This amount represents a minimum which will rarely prove sufficient in the case of those preparing to teach German as their principal subject. Of students of the latter class the following courses are required: 10 or 12, 14, 30 or 31, 50 and 51. Students preparing to teach some other subject as their major, with German as minor, will be required to complete course 10 or 12 and at least one course in German literature selected from courses 21 to 28 inclusive.

As to the maximum number of credits which students may elect in German, the following rules apply in accord with the general statement under "electives": Students beginning their university work in German 1, 1A, or 2 may take up to forty-six credits, those entering 2A up to forty-three credits, those entering higher classes may not exceed forty credits.

Germanistische Gesellschaft

The Germanistische Gesellschaft is an organization of students and instructors interested in the study of the German language and literature and of German life and culture. There are two general meetings each month, on Wednesday evenings, the programs consisting of lectures, recitations, dramatic performances, singing, and social entertainments. All students specializing in German, preparing to teach German, or wishing to keep up their knowledge of German, are urged to attend regularly.

ELEMENTARY COURSES

For Undergraduates

1. Beginners' German. Grammar and easy readings, with practice in speaking and writing German. *Throughout the year; four credits.* Eight sections. Mr. GOODNIGHT, Mr. PROKOSCH, Mr. HAERTEL, Mr. HICKS, Miss VEERHUSEN, Mr. ARON, Mr. DEHLL, Miss STEINFORT.
- 1B. Beginners' German. Second semester only. In this course the work of the first semester is repeated. Students beginning the study of German at this time may continue their work in the following year, in course 1A. *Second semester; Tu., W., Th., F., 2.* Miss VEERHUSEN.
- 1A. Advanced First Year German. Prerequisite, 1B, or one year of German in the high school. *Throughout the year; Tu., W., Th., F., 11.* Two sections. Mr. ARON, Mr. JONES, Mr. SCHAFFRATH.
2. Second Year German. Modern prose, narrative and dramatic, selected lyrics, and a drama by Schiller. Review of the first year grammar, and elementary syntax. Written and oral exercises. Prerequisite, course 1, or two years of high school German, or an equivalent. Engineering freshmen may take course 2 in place of 2E. *Throughout the year;*

four credits. Ten sections. Mr. ROEDDER, Miss STERLING, Mr. FEISE, Mr. JONES, Mr. MORGAN, Miss VEEHUSEN, Mr. DEIHL, Mr. HELLMANN, Mr. SCHAFFRATH.

- 2L. Second Year German. Especially arranged for students of Latin or Greek, and others who have already had considerable linguistic training. More ground will be covered than in the other sections of German 2. *Throughout the year; Tu., W., Th., F., 9.* Two sections. Mr. EVANS, Mr. RIEDER.
- 2S. Second Year German. For students specializing in science. Identical with course 2, except that easy scientific prose is introduced in part of the second semester. *Throughout the year; M., W., Th., F., 11.* Three sections. Mr. HAERTEL, Mr. MORGAN, Miss STEINFORT.
- 2C. Second Year German. For freshmen in the course in commerce. Practically identical with course 2. *Throughout the year; Tu., W., Th., F., 9.* Mr. MORGAN.
- 2E. Second Year German. For freshmen in engineering. A regular second year's course, practically identical with course 2. *Throughout the year; four credits.* Four sections. Mr. KIND, Mr. HAUSSMANN, Mr. HICKS, Mr. HELLMANN.
- 2A. Advanced Second Year German. Prerequisite, 1A, or three years of German in the high school. *Throughout the year; four credits.* Three sections. Mr. BRUNS, Mr. HAUSSMANN, Miss ERNST.

ADVANCED PRACTICE COURSES

Primarily for Undergraduates

- 3A. Third Year German. Modern and classical prose and verse. Oral and written work. Study of syntax. Open only to freshmen who enter the university with four years of high school German. *Throughout the year; M., Tu., W., Th., 12.* Mr. GOODNIGHT.
- 3S. Scientific German. For students specializing in science. Prerequisite, course 2 or 2S. Rapid reading of scientific prose. *Throughout the year; W., F., 9.* Miss STERLING.
- 3C. For sophomores in the course in commerce. Reading, conversation, and composition. *Throughout the year; Tu., Th., 11.* Mr. HICKS.

- 4C. For juniors in the course in commerce. Reading, conversation, and composition, chiefly on topics of special value to students of commerce. *Throughout the year; Tu., Th., 9.* Mr. MORGAN.
- 5C. For seniors in the course in commerce. A continuation of the work of 4C. *Throughout the year; Tu., Th., 9.* Mr. PROKOSCH.
6. Grammar and Composition. Prerequisite, course 2 or an equivalent. For students who desire more practice in grammar and prose composition. Without special permission, this course can be taken only in connection with some other course in the department. *M., 12.* Mr. KIND.
7. Elementary Conversation. Class practice, with work at home not to exceed one hour a week. Open on the same conditions as course 6. *One credit. Throughout the year; two hours a week.* Six sections. Mr. BRUNS, Mr. FEISE, Mr. HICKS, Miss VEERHUSEN.
8. Dramatic Reading. Recitation of poems and reading of dramas with divided parts, with special attention to pronunciation and expression. Open, after consultation, to students of fair advancement in German. Not open to freshmen. *One credit. M., W., 2.* Mr. FEISE. (1909-10, second semester only.)
9. Critical German Prose. Rapid reading in history, biography, criticism, etc. Especially designed for students who wish to read with ease German books on historical, philosophical, and literary topics. Prerequisite, course 2 or an equivalent. *W., F., 2.* Mr. MORGAN.
10. Composition and Conversation; with special work in German syntax. Prerequisite, at least four credits in advance of course 2. *Throughout the year; two credits.* Five sections. Mr. GOODNIGHT, Miss STERLING, Mr. HAERTEL, Mr. MORGAN, Miss VEERHUSEN.
11. Sight Reading. Rapid translation of literary and critical prose, especially intended for students who need practice in putting German into English. Open on the same conditions as course 9. *One credit. Throughout the year; twice a week.* Mr. HICKS.

12. Advanced Practice in Writing and Speaking German. Discussions and essays on topics of German life and literature. Open to advanced students specializing in German. This course is decidedly in advance of course 10; but ordinarily students should take only one of the two courses. *Tu., Th., 10.* Mr. PROKOSCH, Mr. BRUNS.
 13. Grammar Review. A detailed discussion of theoretical grammar from the standpoint of the high-school teacher. Open to seniors and graduate students. *Second semester; two credits.* Mr. EVANS.
 14. The Teaching of German. A critical study of the methods of teaching modern foreign languages. Lectures, reports, discussions and practice teaching. Open to seniors and graduate students. *First semester; M., W., 3.* Mr. EVANS. The attention of the students in this course is called to course 53, General Phonetics.
- Courses 12 and 14 may be counted toward the master's degree by graduate students taking German as their major.

GERMAN LITERATURE

Primarily for Undergraduates

15. Classical and Modern Writers. Selections from eighteenth and nineteenth century authors, and written exercises. Prerequisite, second-year German. Three sections. *M., W., F., 9 and 10.* Mr. EVANS, Miss VEERHUSEN, Miss STEINFORT.
 To make suitable four or five hour courses, 15 should be combined with 6, 7, 8, 9, 11, or 20.
17. Modern German Dramatists. Selected dramas of Grillparzer, Hebbel, and other authors, like Ludwig, Sudermann, and Hauptmann. A rapid reading course. Introduction to literary interpretation. *M., W., F., 11.* Mr. KIND.
18. Modern German Novelists. Selected novels of Scheffel, Freytag, Keller, C. F. Meyer, and Sudermann. A rapid reading course. *M., W., F., 11.* Mr. HAUSSMANN.
20. Schiller. Introductory study of his life, and selected works. *Maria Stuart* or *Braut von Messina*, *Gedichte*, and *Wallenstein*. Throughout the year; two credits. Three sections. Mr. ROEDDER, Miss STERLING, Mr. HAERTEL.

Courses 17 to 20 are primarily intended for students who have had course 2, or its equivalent. Students having had more than four semester hours in advance of course 2 will be required to do additional work to receive full credit.

21. Modern German Poetry. *First semester*: Lyrics and ballads. *Second semester*: Epic poems, such as Scheffel's *Der Trompeter von Säckingen*. M., W., F., 12. Miss STERLING.
- 22A. Heine. Introduction to the study of his life and poetry. Lyrics, *Harzreise*, and other prose writings. *First semester*; M., W., F., 10. Mr. BRUNS.
- 22B. Hebbel. Introduction to the study of his life, poetry, and theory of art. The class will read several dramas and selections from letters and diaries. *Second semester*; M., W., F., 10. Mr. BRUNS.
23. Goethe. Introductory study of his life, and selections from his works. *Götz and Egmont*. Tu., Th., 9. Alternates with course 24. (Omitted in 1910-11.) Mr. Voss.
24. Lessing. Introductory study of his life, and selections from his works. *Emilia Galotti*, *Nathan*, and prose selections. Tu., Th., 9. Alternates with course 23. Mr. Voss.
25. Goethe's Prose. A critical study of Goethe's masterpieces of prose. Representative selections will be read in class and others will be assigned for private reading. *Throughout the year*. Two credits. (Omitted 1909-10.) Mr. FEISE.
28. Grillparzer. Critical study of his life and works. Representative dramas will be studied in class and others will be assigned for private reading. Lectures and recitations. *Throughout the year*; Tu., Th., 11. Mr. KIND.

Courses 21 to 28 are primarily intended for juniors specializing in German, but are open to all others who have had at least six credits in advance of course 2.

Without special permission, no student is allowed to count more than two of the courses from 15 to 20, and three year courses, or their equivalents, from 21 to 28.

29. Survey of German Painting and Sculpture of the Nineteenth Century. Illustrated lectures. *Second semester*; W., F., 12. One credit. (Omitted 1909-10.) Miss STERLING.

For Undergraduates and Graduates

30. Goethe's Faust. Interpretation of both parts of Faust and of the lyrics, as a basis for a general study of the poet's life and art. *Throughout the year*; M., W., F., 9. Alternates with course 31. Mr. HOHLFELD.

31. History of German Literature. English lectures, with outside readings in representative works from the eighth to the present century. Special attention is given to French and English relations and to parallel movements in other fields of German culture. *Throughout the year; M., W., F., 9.* Alternates with course 30. (Omitted 1910-11.) Mr. HOHLFELD.
32. Lessing. A critical study of his life and works. Representative works will be studied in class and others will be assigned for outside reading. Lectures and discussions. *First semester. Two credits.* Mr. HAERTEL.
34. Lyric Poetry of the Nineteenth Century. Special attention will be given to the study of rhythm and meter. *Throughout the year; two credits.* Alternates with course 32. (In 1909-10 only one semester's work, on the lyric poetry of Goethe and Romanticists. *Second semester.*) Mr. BRUNS.
35. The Novel of the Nineteenth Century. Special attention will be given to the general aspects of German life and thought in so far as they find expression in the novel. *Throughout the year; two credits.* Alternates with course 43. Mr. GOODNIGHT.
36. Popular German Literature. *Volkslied, Märchenliteratur, and Volksbücher (first semester);* modern dialect literature (*second semester*). *Tu., Th., 10.* Alternates with course 37. Mr. ROEDDER.
37. Schiller. A study and discussion of his dramas, dramatic fragments, philosophical writings, and correspondence. *Throughout the year; two credits.* Alternates with course 36. Mr. ROEDDER.
38. Shakspeare in Germany. The course will trace the introduction of Shakspeare into Germany, and the influence of his works upon German literature during the eighteenth century and on the Romantic School. Lectures and assigned readings, and reports. *Second semester; two credits.* (Omitted 1909-10.) Mr. KIND.
39. German Metrics. A general introduction to the development of metrical style, and a detailed study of German prosody, with special emphasis on the study of the eighteenth and nineteenth centuries. *First semester. Two credits.* Mr. FEISE.

For Graduates

40. Herder. A critical study of his life and works, with special reference to his influence on the Storm and Stress movement and on the Romantic School. *Second semester; M., 2 to 4.* Mr. HAUSSMANN.
41. The Romantic School in Germany. A systematic study of the literary, philosophic, and cultural tendencies of the early romantic movement. The principal writers studied will be the two Schlegels, Tieck, Novalis, Wackenroder, Fichte, and Schelling. *Second semester; M., 2 to 4.* (Omitted 1910-11.) Mr. HAUSSMANN.
42. The Literary Relations of England and Germany in the eighteenth century. The course deals particularly with the influence on German literature of the Spectator, Milton, Young, Ossian, and Ballad Poetry; Pope, Thomson, Defoe, Swift, Richardson, Fielding, Sterne, and Goldsmith. *Throughout the year; twice a week.* (Given in second semester, 1909-10. Omitted in 1910-11.) Mr. KIND.
43. German Literature in America. An attempt to trace the introduction of German literature, American criticism of it, and its influence on American writers. *Throughout the year; twice a week.* Alternates with course 35. (Omitted 1909-10.) Mr. GOODNIGHT.
44. History of Middle High German Literature. A study of the literary movements during the period from the twelfth to the end of the fifteenth century, with special reference to German life and culture during the middle ages. Prerequisite, course 52 or its equivalent. *Throughout the year; Th., 4 to 6.* Alternates with course 46. Mr. EVANS.
45. Interrelations of German and French literature during the seventeenth and eighteenth centuries, with special reference to the novel. *First semester. Twice a week.* Mr. FEISE.
46. History of the German Drama. The development of the German drama up to the time of Lessing, including the liturgical drama, the *Fastnachtspiel*, the *Schuldrama*, the English influence of the seventeenth, and the French influence of the first half of the eighteenth century. *Throughout the year; Tu., 3 to 5.* Alternates with course 44. (Given in first semester, 1909-10. Omitted in 1910-11.) Mr. EVANS.

47. Pro-seminary in German Literature. The object of this course is, through the assignment of definite tasks of limited compass, to prepare graduate students for the more advanced work of the seminary proper. The work will be selected in alternate years from the following subjects:

A. The literature of the seventeenth and of the first half of the eighteenth century.

B. The classical period of the second half of the eighteenth century. (Omitted 1910-11.)

In both instances, special attention will be given to tracing the development of literary style, meter, and poetic theory. *Throughout the year; Tu., Th., 12.* Mr. HOHLFELD.

48. Seminary in German Literature. The aim of the seminary is to train graduate students in the scientific methods of the historical and critical study of literature. The periods from which subjects are assigned for investigation, form a cycle of three years:

A. Interrelations of English and German literature during the last three centuries. (To be given 1910-11.)

B. Goethe (*first semester*) and Goethe's Faust (*second semester*). (Given in 1911-12.)

C. The German drama since the middle of the eighteenth century. (Given in 1909-10.)

In addition to the two hours a week of the seminary proper, devoted to the presentation and discussion of special investigations, one hour each week will be given to a course of lectures which are to furnish a connected survey of the period under discussion. These lectures will also be open, upon consultation, to graduate students who are not members of the seminary. *Throughout the year; W., 4-6, and a third hour to be arranged.* Mr. HOHLFELD.

For the work of the German Journal Club, see the announcement of the Graduate School.

GERMAN PHILOLOGY

For Undergraduates and Graduates

50. Historical Survey of German, with special reference to Modern German grammar. Lectures and reading of selected texts to illustrate the historical development of the language. *First semester; M., W., 11.* Mr. VOSS.

51. Middle High German. Introductory course. Lectures on the German folk epics and German heroic legends. Study of either the *Nibelungenlied* or *Kudrun*. *Second semester*; M., W., 11. Mr. VOSS.

Courses 50 and 51 are required of students who expect to teach German as their principal subject.

52. Advanced Middle High German. Studies in the language and literature of the twelfth and thirteenth centuries. Lectures and critical study of texts. *Throughout the year*; Tu., Th., 10. Mr. VOSS.
53. General Phonetics. A study of the nature and production of speech sounds in the most important Indo-European languages. *First semester*; *two credits*. In alternate years. (Omitted 1910-11.) Mr. PROKOSCH.
54. Gothic Grammar. Readings from the Gospels. *First semester*; *two credits*. Alternates with course 58. (Omitted 1910-11.) Mr. ROEDDER.
55. Old High German, with special reference to German life and culture. Braune's *Althochdeutsche Grammatik* and readings from Braune's *Althochdeutsches Lesebuch*. *Second semester*; *two credits*. Alternates with course 59. (Given in 1909-10 by Assistant Professor PROKOSCH. Omitted 1910-11.) Mr. ROEDDER.
57. Introduction to the Study of *Volkskunde*. Lectures and collateral reading. *First semester*; *one credit*. In alternate years. Mr. ROEDDER.
58. Old Saxon, with special reference to Germanic life and culture. Holthausen's *Altsächsisches Elementarbuch* and extracts from the *Heliand*, ed. Behaghel. *First semester*; *two credits*. Alternates with course 54. Mr. ROEDDER.
59. Germanic Mythology and Heroic Legends. Lectures and collateral reading. *Second semester*; *two credits*. Alternates with course 55. Mr. ROEDDER.

Primarily for Graduates

60. Classical German Philological Literature. Introduction to the history of German philology and to the study of philological methods of research and investigation. *Throughout the year*; W., 9. Mr. VOSS.

61. Pre-Germanic Grammar. *Throughout the year; twice a week. First semester: Phonology. Second semester: Morphology and Syntax. Alternates with course 53.* Mr. PROKOSCH.
62. Modern German Grammar. A thorough and practical study of the language as spoken and written today, with lectures on the history of the Modern High German literary language. Alternates with course 63. *M., W., 10.* Mr. VOSS.
63. Early Modern High German. Studies in the language and literature of the fifteenth and sixteenth centuries. Lectures and critical study of texts. Alternates with course 62. *M., W., 10.* Mr. VOSS.
64. Pro-seminary in German Philology. For 1910-11: Old High German Texts (*first semester*); Old Saxon Texts (*second semester*). *S., 8.* Mr. ROEDDER.
65. Philological Seminary. The classical writers of the Middle High German period, and the transition periods from Old to Middle High German, and from Middle to Modern High German. Hartmann von Aue, Gottfried von Strassburg, Wolfram von Eschenbach, *Deutsche Gedichte des XI. und XII. Jahrhunderts*, Reinke de Vos, Meier Helmbrecht, Sebastian Brant, Thomas Murner, Hutten, Luther, Fischart, and Hans Sachs. *Tu., 4 to 6.* Mr. VOSS.

GREEK

EMERITUS PROFESSOR KERR; PROFESSORS SMITH, SHOWERMAN; ASSOCIATE PROFESSORS LAIRD, FISKE; MISS BANNING.

The requirements for an undergraduate major in Greek are, in addition to the thesis, a minimum of twenty-two semester hours, not including courses A and B.

Primarily for Undergraduates

- A1. Elementary Greek. White's *First Greek Book*, Xenophon's *Anabasis*. *M., Tu., Th., F., 12.* Mr. SMITH, Miss BANNING.
- A2. Elementary Greek. White's *First Greek Book. Second semester; hours to be arranged. Three credits.* Mr. LAIRD.
- B. Xenophon's *Anabasis* III-IV, Homer's *Odyssey* I-IV, Greek Composition. *M., W., F., 12.* Mr. LAIRD.

For students who have had one year of preparatory work.

- 1a. Herodotus VIII, Homer's *Odyssey* V-XII, Plato's *Apology* and *Crito*. M., W., F., 8. Mr. LAIRD.

For students who have had two years of preparatory work.

- 1b. Greek Prose Composition and Sight-reading. Tu., Th., 8. Mr. SMITH or Mr. LAIRD.

- 2a. The *Philippics* of Demosthenes, Thucydides VII, Goodwin's *Moods and Tenses*. First semester; M., W., F., 10. Mr. LAIRD or Mr. SMITH.

Euripides, two or more plays, Jebb's *Primer of Greek Literature*. Second semester; M., W., F., 10. Mr. SMITH.

- 2b. Herodotus VII, or selected dialogues of Lucian, and Euripides, (two plays). M., F., 11. Mr. SMITH or Mr. LAIRD.

For those who have had course 1, or whose preparatory work has been particularly good.

3. Greek Prose Composition. W., 11. Mr. LAIRD.

Required of those who expect to get recommendations to teach Greek.

4. Easy Greek for Sight Reading. Open to those who have completed course 1. One hour a week. Mr. SMITH.

For Undergraduates and Graduates

- 5a. Greek Lyric Poets. Study of meters. First semester; M., W., F., 11. (Omitted 1910-11.) Mr. SMITH.

- 5b. Thucydides; Demosthenes. Second semester; M., W., F., 11. (Omitted 1910-11.) Mr. SMITH.

6. Greek Dramatic Poets. First semester, Aeschylus (two plays), Sophocles (two plays). Study of meters. Second semester, Aristophanes (two plays), Aristotle's *Poetics*, discussion of the Greek drama. M., W., F., 11. Mr. SMITH.

8. Plato. *The Republic*. Tu., Th., 9. Mr. LAIRD.

10. Advanced Greek Composition. First semester; once a week. Mr. SMITH or Mr. LAIRD.

12. Life of the Greeks and Romans. A lecture course illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. Tu., Th., 11. (See Latin 12.) Mr. SHOWERMAN.

13. Greek Literature in English translations (Homer). Second semester. For details of courses 13 and 13b see Comparative Literature 1 and 3.

- 12a. Greek Literature in English translations (Lyric Poets). A knowledge of Greek is not required. *Second semester; Tu., Th., 12.* (Omitted 1910-11.) Mr. SMITH.
- 13b. Greek Literature in English translations (Drama). A knowledge of Greek is not required. *First semester; Tu., Th., 12.* Mr. SMITH.
15. Classical Archaeology. The history and appreciation of Greek sculpture, architecture, and painting. A course introductory to the study of art. Mr. SHOWERMAN. (Omitted. See Latin 22.)
16. Greek Religion. (See Latin 27.)

Primarily for Graduates

20. Thucydides. The whole of the author is read privately by the members of the class. Especial attention is given in the seminary exercises to text criticism. *Throughout the year S., 9 to 11.* (Omitted 1910-11.) Mr. SMITH.
21. Greek Drama. Sophocles. The whole author is read privately by the members of the class. The general treatment in courses 21 and 22 will be literary in character. *Throughout the year; S., 9 to 11.* (Omitted in 1910-11.) Mr. SMITH.
22. Lyric Poetry. Especial attention is given to Pindar, the whole being read privately. *Throughout the year; S., 9 to 11.* Mr. SMITH.
24. Greek Literature. Lectures, with selections from Greek authors, read by the class. Lyric Poetry. *First semester; twice a week.* Drama and History. *Second semester; twice a week.* (Omitted in 1910-11.) Mr. SMITH.
25. Greek Orators. Antiphon, Andocides, Lysias, and Isaeus. *W., 4:30 to 6.* (Omitted 1910-11.) Mr. LAIRD.
30. Greek Grammar. History of the sounds and forms. *First semester; Tu., Th., 5.* Mr. LAIRD.
31. Greek Syntax. Lectures on the development of Attic usage, with particular reference to the cases and modes. *Second semester; Tu., Th., 5.* Mr. LAIRD.
33. Journal Club. Reports on and discussion of current philological literature. *One hour a week.* Mr. SMITH.

HEBREW AND HELLENISTIC GREEK

PROFESSOR WILLIAMS; ASSISTANT PROFESSORS EVANS AND KELLY;
DR. WOLFENSON; MR. DAVIES.

The courses given by this department are open as electives to all students in the University, and are all counted toward graduation the number of credits specified in each case.

Freshmen when specially interested may be permitted to elect Elementary Hebrew in lieu of one of the two foreign languages which they may ordinarily choose, or in lieu of the one which they must take in that year. (See Requirements for the degree of Bachelor of Arts: 2. *Required Studies*, b. *Language*; 5. *Studies of the Freshman Year*.)

Freshmen may take up Hellenistic Greek, likewise. Students are permitted (see reference above 2. b, *Language*) to substitute 8 credits of advanced work in Hellenistic Greek or Hebrew for an equal number of credits in one of the languages they are ordinarily permitted to choose from. Freshmen, therefore, who are prepared to enter any of the language courses of this department except 16 and 17, 1 and 2, may substitute such courses in one language to the extent of 8 credits in part fulfillment of the language requirement of 16 or 24 credits. Those freshmen who are not prepared to take advanced work may take the elementary (first year) courses (16 and 17, 1 and 2), on condition that they continue with advanced work in the language they elect to substitute. The first year's work is credited toward graduation, but only the advanced work is credited toward the fulfillment of the language requirement.

In addition to instruction in Hebrew and Hellenistic Greek, courses are offered in Arabic, Aramaic, Assyrian, and Syriac; and should occasion arise, opportunity will be given properly qualified students to prosecute studies in post-Biblical Hebrew, Talmud, Ethiopic, Semitic Epigraphy, Old Egyptian, and Coptic.

The various courses of this department are adapted to the needs of:

1. The general student desiring to secure a true and broad knowledge of language, literature, and history as a means to liberal culture or with a view to teaching; since this work furnishes unsurpassed linguistic training in the most important

family of languages after the Indo-European and of only second importance to that family, and gives a view of a little known, but very important, domain of intellectual development.

2. The student intending to study theology, or those already in the ministry who desire to broaden their knowledge in this field; since the language, literature, history, and archaeology of the Semitic peoples is of the highest importance for theology.

3. Students of comparative religion and of comparative literature; since the Semitic languages, together with Egyptian, furnish the earliest records of religion and literature, and the respective peoples have originated and transmitted many forms of literature.

4. The student of ancient history desiring to work with the original sources, the earliest monuments and records of which are Semitic and Egyptian.

5. The student of linguistics; as furnishing a view of a most important family of languages, a knowledge of which is essential to a thorough understanding of language-processes, and as illustrating peculiarities of phonetics.

6. The student of Semitic languages, literatures, and history for their own sake.

Major in Hebrew and Hellenistic Greek

The requirements for a major in this department will be a minimum of 20 unit-hours, including thesis, made up from any of the courses offered, excepting 1 and 2, 16 and 17; but the amount of work required will be subject to increase and variation depending upon the progress and needs of the individual student.

Primarily for Undergraduates

1. Elementary Hebrew. Phonology, inflections, and syntax. The acquirement of a correct and fluent pronunciation of pointed Hebrew is insisted upon, and practice in reading unpointed texts is given. Translation, simple composition, and easy conversation. The method of the course is in large part that of a living language, which the ancient Hebrew has again become. *Throughout the year; four times a week.* Mr. WOLFENSON.

2. This course covers the same ground as course 1, but beginning in the second semester of each year, twice a week, continues thus during the first semester of the following year. Mr. WILLIAMS.
3. Second Year Hebrew. A reading course in Hebrew historical literature, centering on the Books of Samuel, with sight reading in other books; also a review of the Hebrew verb with special attention to the weak verbs. *First semester; twice a week.* Mr. KELLY.
4. Advanced Second Year Hebrew. Reading in the Book of Deuteronomy and legal literature with attention to sight reading and securing a wide vocabulary; also a review of the inflections with special study of roots and triconsonantism. *Second semester; twice a week.* Mr. KELLY.
7. Prose Composition and Conversation. The more important principles of Hebrew syntax are thoroughly illustrated. Intended to be taken in conjunction with courses 3 and 4, but may be taken independently. *Throughout the year; once a week.* Mr. KELLY.
16. The Elements of Hellenistic Greek. For students who have not studied classical Greek. The forms and idioms of Hellenistic Greek; composition and reading of selected chapters of the Gospels with attention to the acquirement of a vocabulary. *Throughout the year; four times a week.* Mr. WOLFENSON.
17. This course covers the same ground as 16, but begins in the second semester of each year, twice a week, and continues the same for the first semester of the following year. Mr. WILLIAMS.
18. Second Year Hellenistic Greek. Matthew and Mark are carefully studied with attention to the etymology of the language and a review of forms. Study of the peculiarities of the syntax of Hellenistic Greek. *Throughout the year; twice a week.* Mr. WILLIAMS.
19. Luke and the Acts. An advanced reading course with introduction to criticism and exegesis and a consideration of the date, authorship, composition, and purposes of the Acts. Careful study of the syntax and style of Hellenistic Greek. *Throughout the year; twice a week.* Mr. WILLIAMS and Mr. DAVIES.

- 19A. The Apostolic Age. A course of lectures treating critically the records, history, and developments of the period of the Apostles, with assigned readings and reports by members of the class. Designed to supplement course 19 and to be taken in conjunction with it, but each may be taken independently. *Throughout the year; once a week. One credit.* Mr. DAVIES.
23. Early Hebrew History. A course of lectures on Semitic origins, migrations, and settlements; the condition of early Palestine; the Abrahamic migration, and patriarchal history; Egypt and the Exodus; the conquest of Palestine to the establishment of the Kingdom; and the Kingdom to Solomon. *First semester; once a week. One credit.* Mr. WOLFENSON.
24. History of the Kingdom. A course of lectures on the division of the Kingdom; the Assyrian period; fall of Samaria; the Southern Kingdom to the Exile; the literature of the period. *Second semester; once a week. One credit.* Mr. WOLFENSON.
25. Jewish History. A course of lectures on the period of the Exile; the Return and the Persian period; Alexander's conquest; the Greek and Syrian period; the Maccabean wars; the Roman period. *Second semester; once a week. One credit.* Mr. WILLIAMS.
26. Historical Geography of Palestine. A course of lectures on Hebrew Archaeology and recent discoveries, illustrated by lantern slides. Readings and reports by the class. *Throughout the year; once a week.* Mr. KELLY.

For Undergraduates and Graduates

5. The Minor Prophets. An advanced course embracing a critical study of the text on the basis of the ancient versions, recent theories of the composition and form of certain books, and the historical background of the books studied. *Throughout the year; twice a week.* Mr. KELLY.
- 5A. Messages of Hebrew Prophecy. A course of interpretative lectures on the Minor Prophets, treating the literature in its historical and sociological aspects. Discussions and reports by members of the class. Supplemental to course 5. *Throughout the year; twice a week.* Mr. EVANS.

6. The Book of Job. A critical study of the text with a consideration of Hebrew wisdom—literature and philosophy and the problem of suffering among the Hebrews. *Throughout the year; twice a week.* Mr. KELLY.
8. Hebrew Syntax. Systematic study of the details of Hebrew syntax and the thought processes of the Hebrews as revealed in the syntax, with reading of illustrative passages and composition. *Throughout the year; twice a week.* Mr. WOLFENSON.
20. The Book of John. Introduction to textual criticism. A consideration of the differences between John and the other Gospels; the date, authorship, composition, and purpose of the book. The leading *termini technici* of John. *Throughout the year; twice a week.* Mr. WILLIAMS.
27. The Psalms—Books I and II. Form and characteristics of Hebrew poetry with an introduction to the theories of Hebrew metre: Cobb, *Criticism of Hebrew Metre*. *Throughout the year; twice a week.* Mr. KELLY.

Primarily for Graduates

9. Advanced Hebrew Syntax. Study of special problems in Hebrew syntax with reports by members of the class. Historical syntax. *First semester; twice a week.* Mr. WOLFENSON.
10. Advanced Hebrew Etymology. The origin and development of the Hebrew inflections; historical and comparative study of the verbal system. A knowledge of Arabic, at least, of the other Semitic languages is essential for this course; it can, therefore, be taken only by those who have had or are taking course 12. *Second semester; twice a week.* Mr. WOLFENSON.
11. Hebrew Seminary. Hebrew legal, historical, poetical, and prophetic literature will be the subject in successive years, with a representative book of each type as a nucleus of the work. During the year 1909-10 Job was the center of the work on poetry. The work of the seminary is supplemented by the reading courses whose subject is parallel with that of the seminary. A knowledge of Hellenistic Greek, Latin, German, and French is neces-

sary for effective work, but a knowledge of all the languages specified is not indispensable. Credit for the work of the seminary will vary in individual cases according to the amount of work accomplished. *Throughout the year; once a week (two-hour session).* Mr. KELLY.

12. Elementary Arabic. The sounds, inflections, and broad outlines of syntax. Exercises and reading of easy prose. Acquirement of vocabulary. Use of Arabic for lexicographical purposes. Comparison with Hebrew. *Throughout the year; twice a week.* Mr. WOLFENSON.
13. Advanced Arabic. Reading course in the Qur'ân and selections from the Arabic historians; lectures and readings on the early history of Islam. History of the Qur'ân. *Throughout the year; twice a week.* Mr. WOLFENSON.
14. Elementary Assyrian. The sounds; correspondence of Hebrew and Arabic with Assyrian; inflections; study of the signs. Selected texts: Friedrich Delitzsch, *Assyrian Grammar*, and *Assyrische Lesestücke*, 4th ed.; Bruno Meissner, *Assyrisch-Babylonische Chrestomathie*. Introduction to Sumerian. Assyrian discoveries. *Throughout the year; twice a week.* Mr. KELLY.
15. Biblical Aramaic (ten weeks); Syriac (remainder of the year). The dialects of Syriac; use of Syriac for comparative purposes. Reading of selections in Brockelmann's Syriac Grammar and Roediger's Syriac Chrestomathy. *Throughout the year; twice a week.* Mr. WOLFENSON.
21. Hellenistic Greek Seminary. In successive years the Epistle of Paul to the Romans, the Second Gospel, and the Fourth Gospel will form the center of the work. *Throughout the year; once a week (two-hour session).* Mr. WILLIAMS, Mr. DAVIES.
22. Advanced Hellenistic Greek Grammar. Investigation of special problems in syntax. *Throughout the year; twice a week.* Mr. WILLIAMS.

HISTORY

PROFESSORS DENNIS, FISH, MUNRO, SELLERY, TURNER; ASSOCIATE PROFESSOR WESTERMANN; ASSISTANT PROFESSORS CHASE, COFFIN; DR. BELL, DR. LUNT, DR. ROOT; MISS ALVORD, MR. BILLMAN, MR. BYRNE, MR. GARRETT, MR. GUTSCH, MR. KREY, MR. E. E. ROBINSON, MR. W. A. ROBINSON, MR. SCHMITT, MR. WEST, MR. WITTE.

The courses in history are divided into three groups:

A. Introductory courses 1 to 10 are primarily for undergraduates. They cannot be counted toward advanced degrees, and graduates are required to have completed an equivalent of sixteen semester hours of these studies as a preparation for graduate work for a degree. It is recommended that students shall not cover all of the introductory courses to the neglect of advanced work. If history is chosen as one of the required subjects (see Index under Degrees), six credits must be obtained in one or more complete courses. Students not registered in the College of Letters and Science can take the courses in Medieval, Modern, English, and United States history for two credits each semester, with a proportionate reduction in the amount of work required.

B. Advanced courses 11 to 49 are designed to continue the work begun in the preliminary courses in the direction of greater specialization. These courses are open to undergraduates and graduates who have taken the necessary preliminary work. Students who intend to teach history are referred to the statement of courses 50 and 51.

C. Courses 52 to 66 are not open to undergraduates.

History Major

The requirements for an undergraduate major in history, in addition to the thesis, are twenty-six credits as a minimum, selected as follows:

I. One or more introductory courses in both European and American history.

II. Advanced courses to the amount of at least ten credits.

For Undergraduates

COURSES OPEN TO FRESHMEN

10. Ancient History. A general survey of the history of the ancient world, including the oriental nations, Greece and Rome. Text-books, lectures, collateral reading and conferences. *Throughout the year; Tu., Th., 11.* Mr. WESTERMANN.

For Greek and Roman Life, see Latin 12.

1. Medieval History. A general survey of the history of Europe from the barbarian invasions to the close of the fifteenth century. Lectures, conferences, collateral reading, and topics. *Throughout the year; M., W., F., 11.* Mr. MUNRO, Mr. SELLERY, and assistants.
5. English History. An outline of political and constitutional history, as a frame work for the study of the economic and social development of the nation. Lectures and text-book, collateral reading and reports. Students who have had both semesters of History 1 may enter this course at the beginning of the second semester. *Throughout the year; Tu., Th., 10, and a third hour in sections for conferences. First semester; Mr. LUNT, Mr. BELL, and assistants. Second semester; Mr. DENNIS, Mr. LUNT, Mr. BELL, and assistants.*

COURSES NOT OPEN TO FRESHMEN

2. Modern European History. A general survey extending from the close of the fifteenth century to the present day. Lectures and collateral readings. *Throughout the year; M., W., F., 12.* Mr. SELLERY.
4. History of the United States. A general survey from the revolutionary era to the present, with emphasis upon political history. Lectures, text-book, collateral reading and topics. This course, or an equivalent, must precede all advanced courses in American history.

To the presidency of Jackson, *first semester*; from the presidency of Jackson to the present, *second semester; M., W., F., 11.* Mr. FISH.

For Undergraduates and Graduates

ANCIENT AND MEDIEVAL HISTORY

25. Greek Civilization and its Expansion. A study of the development and character of Greek civilization, and of the forces making for its expansion, from the earliest times to the Early Roman Empire. *First semester; M., W., 12.* Mr. WESTERMANN.
26. Later Roman Empire. A study of the organization and government of the Empire in the third and fourth centuries, with special emphasis on the municipality and economic conditions. *Second semester; M., W., 12.* Mr. WESTERMANN.
29. Greek and Roman Institutions. (a) To the end of the Roman Republic; *first semester*. (b) Roman imperial and municipal institutions; *second semester*. *M., W., 12.* (Omitted in 1910-11.) Mr. WESTERMANN.
31. Medieval Civilization. Designed to supplement course 1 by a special study of the intellectual life of the feudal period and of the organization of society. *First semester; Tu., Th., at 10, and a third hour to be arranged.* Mr. MUNRO.
32. The Crusades. Designed to supplement course 1 by a more extended study of the period from 1095 to 1291, with special reference to the causes, events and influence of the Crusades. *Second semester; Tu., Th., 10.* Mr. MUNRO.
- 41a. Constitutional History of England. A study of the formation and growth of English institutions to the close of the Middle Ages; designed to be particularly useful for those who intend to study law. *First semester; M., W., F., 11.* Mr. LUNT.
34. The Later Middle Ages. The political, social, and religious life of western Europe in the fourteenth and fifteenth centuries, with emphasis upon the elements of progress. *Second semester; Tu., Th., 9.* Mr. SELLERY.
35. The Renaissance in Italy. A consideration of the principal manifestations of Italian genius in the fourteenth, fifteenth and sixteenth centuries. *First semester; Tu., Th., 9.* Mr. SELLERY.

46. Introductory Seminary in European History. Designed to give some familiarity with medieval conditions, with medieval Latin, and with the elements of historical method. The work consists in the translation and study of a medieval chronicle. Open to graduate students and qualified seniors. *Throughout the year; Tu., 4 to 6.* Mr. SEL-
LERY.
- 48a. Europe and Asia. A general survey of the historical relations of eastern and western peoples to about 1500, to serve as a basis for courses in contemporary world politics or for more detailed study of special phases of the relations of Asia to Europe. Graduate students may take this course in connection with course 66. Open to graduates and to undergraduates with sufficient preparation. *First semester; Tu., Th., 3.* (Omitted in 1909-10.) Mr. DENNIS.
30. Modern Historians. A discussion of the writings of English, French, German, Italian, and American historians of the latter part of the eighteenth and of the nineteenth century, to illustrate the problems and methods of work in various fields of European history. *First semester; Tu., 12.* (Omitted in 1910-11.) Mr. MUNRO.

MODERN HISTORY

- 41b. Constitutional History of England. A study of the growth of English institutions since the Middle Ages. A continuation of course 41a to the present. *Second semester; M., W., F., 11.* Mr. LUNT.
40. The Protestant Revolt. The beginnings in the fifteenth century; the sixteenth century revolts; the century of conflict and settlement, 1550-1650. *Second semester; Tu., Th., 9.* (Given 1910-11.) Mr. SELLERY.
42. England under the Tudors and Stuarts. The constitutional and religious struggles in the sixteenth and seventeenth centuries, economic and social changes, international relations, the development of sea-power, and the founding of the British Empire. *Throughout the year; Tu., Th., 11.* (Omitted in the second semester, 1909-10.) Mr. DENNIS.
- 43a. The British Empire, 1688-1815. A course dealing with the development of modern English institutions, foreign af-

- fairs, the international struggle for colonial and commercial supremacy, and the evolution of imperial politics. *First semester; Tu., Th., 10.* (Omitted in 1909-10.) Mr. DENNIS.
- 43b. The British Empire since 1815. A continuation of course 43a. Special attention will be paid to economic, colonial, and foreign affairs. *First semester; Tu., Th., 11.* Mr. DENNIS.
44. The Development of Modern Russia, from the Muscovite leadership of the fifteenth century to the end of the nineteenth century. A study of institutions and of foreign relations. Prerequisite, course 2 or its equivalent. *Second semester; Tu., Th., 12 and S., at an hour to be arranged.* (Omitted in 1909-10.) Mr. COFFIN.
45. The Development of Prussian Leadership in Germany, 1640-1871. A study of the growth of modern Prussian institutions and of the relations of Prussia with the other German states. Prerequisite, course 2 or its equivalent. *Second semester; Tu., Th., 12 and S., at an hour to be arranged.* Mr. COFFIN.
37. The Old Régime. An examination of the institutions of the eighteenth century and of the causes of the French Revolution. Prerequisite, course 2 or its equivalent. *Second semester; Tu., Th., 10.* Mr. COFFIN.
24. The French Revolution. A review of the *Ancient Régime* followed by a study of the political, social, and international aspects of the Revolution. *First semester; M., W., F., 9.* Mr. BELL.
38. The French Revolution and the Napoleonic Empire, 1789-1815. A general study of the development of institutions and of international relations. Prerequisite, course 2 or its equivalent. Alternates with course 39. *First semester; M., W., F., 10.* (Omitted in 1909-10.) Mr. COFFIN.
27. The Napoleonic Era. A continuation of course 24. The Consulate and Empire of Napoleon. *Second semester; M., 9; Tu., Th., 2.* Mr. BELL.
39. The Nineteenth Century, 1815-1900. A general study of national development and of international relations particularly after 1850. Prerequisite, course 2 or its equivalent. Alternates with course 38. *Second semester; M., W., F., 10.* Mr. COFFIN.

- 48b. Europe and Asia. A continuation of course 48a, dealing in similar fashion with the relations of Europe and Asia since about 1500. *Second semester; Tu., Th., 3.* (Omitted in 1909-10.) Mr. DENNIS.

AMERICAN HISTORY

16. The American Colonies. Attention is given to the European background of colonial history, but the emphasis falls on the development of the social, economic and political life of the colonies, the growth of American institutions and principles and the expansion of settlement down to 1760. *Throughout the year; M., W., F., 10.* Mr. ROOT.
22. The American Colonies and the Imperial System, 1660-1765. A study of the commercial and governmental relations between England and her American continental dependencies. *Throughout the year; Tu., Th., 9.* Mr. ROOT.
17. The American Revolution. The causes of colonial opposition to England, the steps leading to revolt and independence, followed by a study of the formation of state constitutions, the operation of the confederation and the work of framing and establishing the constitution of 1787. *Throughout the year; Tu., Th., 12.* Mr. ROOT.
13. History of New England. A study of the transfer of population from Europe to the New England region, of the forces, social, economic, and political, that acted upon it there, and its expansion westward across the United States and Canada. *Second semester; M., W., F., 10.* (Omitted in 1909-10.) Mr. FISH.
- 11a. The history of the West to 1840. Particular attention is paid to the conditions of westward migration and to the economic, political, and social aspects of the occupation of the various physiographic provinces of the United States, together with the results upon national development. Lectures, collateral reading, and topics. *First semester (1909-10); M., W., F., 12.* Mr. TURNER.
18. Civil War and Reconstruction. A general study of the history of the United States, 1860 to 1876. *Second semester; M., W., F., 12.* Mr. FISH.

15. Diplomatic History of the United States. A study of the actual negotiations between the United States and other countries, and of the progress of international law so far as it has affected or been affected by the United States. *Throughout the year; Tu., Th., 10.* Mr. FISH.
19. The Materials of American History. Designed to bring out the chief sources of American historical knowledge. Government documents, newspaper and the other sources more generally used will be discussed. *Second semester; W., 2.* Mr. ROOR.
21. The Literature of American History. The purpose of this course is to show the progress of historical method, and of historical knowledge of America by a comparative study of the classics of American historiography. *First semester; W., 2.* Mr. FISH.
20. Introductory Seminary in American History. Topics in the history of Reconstruction, dealing particularly with conditions of the border and northwestern states. *First semester; S., 10-12, or at an hour to be arranged.* Mr. FISH.
50. The Teaching of History. (a) A consideration of the special educational values of history and the peculiar problems of the history teacher. (b) A comparative study of the different methods of teaching this subject. (c) Observational study of class-room methods, secured through visits to the Madison High School and through practice work. *Given each semester; W., F., 9.* Mr. CHASE, in coöperation with Mr. WHITE, Miss MURPHY, and Miss SELL of the Madison High School.
51. A course in Supplementary Reading for High School Teachers of History. Designed to secure: (a) the careful reading and study of supplementary material with a view to the needs and capacity of high school pupils; (b) the organization and preparation of this for effective use; (c) the consideration of practical methods of promoting and directing the pupils' reading. *Second semester; Tu., Th., 9.* (Omitted in 1909-10.) Mr. CHASE.

For Graduates

52. Historical Method. An introductory course for all graduate students, including a survey of the principal problems of method, an account of the present state of materials for research, and an examination of the bibliographical tools essential to the special study. *Throughout the year*; W., 3 to 5. Mr. FISH, Mr. MUNRO, Mr. ROOT, Mr. SELLERY.
53. Palaeography and Diplomatics. (a) Elements of palaeography, with practical exercises in the reading of manuscript facsimiles; (b) elementary exercises in diplomatics. *Second semester*; F., 9 to 11. (Omitted 1909-10.) Mr. MUNRO.
54. Seminary in Ancient History. *First semester*, Athenian political institutions. *Second semester*, Roman financial organization in Egypt. Tu., 7 to 8. Mr. WESTERMANN.
56. Seminary in Medieval History. In 1909-10: the fourth crusade. A knowledge of three foreign languages is required. Th., 4 to 6. Mr. MUNRO.
57. Seminary in Modern European History. Topic for 1909-10: The Centralization of French government by Napoleon I. *Second semester*; S., 10 to 12. Mr. COFFIN.
59. Seminary in English History. Topic for 1909-10: The Reign of James I. *First semester*; W., 2 to 4. Mr. DENNIS.
66. Oriental Seminary. Intended to supplement course 48, and to give opportunity to graduate students to investigate, by means of special research topics, various aspects of the relations of Europe and Asia. *First semester*, British India. *Second semester*, Modern diplomatic history as illustrated in the Eastern Question. W., 2 to 4. (Omitted in 1909-10.) Mr. DENNIS.
58. Seminary in American History. Van Buren's administration. *Throughout the year*. (Given 1909-10.) Mr. TURNER.

INDO-EUROPEAN COMPARATIVE PHILOLOGY

ASSOCIATE PROFESSOR LAIRD, ASSISTANT PROFESSOR PROKOSCH.

1. General Phonetics. A study of the nature and production of speech sounds in the most important Indo-European languages. *Tu., Th., 9.* First semester. Mr. PROKOSCH.
2. Elements of Comparative Philology. An introductory course on the Structure and Development of the Indo-European languages. *Tu., Th., 9.* Second semester. Mr. PROKOSCH.
3. Elementary Sanskrit. *Throughout the year; M., W., 11.* Mr. LAIRD.
4. Advanced Sanskrit. Selections from the Rig-Veda. *Throughout the year; W., 11.* Mr. LAIRD.
7. Old and Middle Irish. An introductory course to Celtic philology, with readings from Irish epics. *W., F., 9.* First semester. Mr. PROKOSCH.
8. Welsh. Selections from the Mabinoegian. *W., F., 9.* Second semester. Mr. PROKOSCH.
9. Pre-Germanic Grammar. *Tu., Th., 9. Throughout the year.* Mr. PROKOSCH.
10. Old Bulgarian. An Introduction to Slavic Philology. *W., F., 9. First semester.* Mr. PROKOSCH.
11. Lithnanian Comparative Grammar and Introduction to Lithnanian folklore. *W., F., 9. Second semester.* Mr. PROKOSCH.
12. Russian. An introduction to the study of modern Russian speaking, writing, and reading. *W., F., 9. Throughout the year.* Mr. PROKOSCH.

Courses 1 and 2 alternate with course 9, the latter being given in 1910-11.

Of courses 7, 10, 12 in first semesters, and 8, 11, 12 in second semesters, one group will be selected each year, according to the demand.

JOURNALISM

ASSISTANT PROFESSOR BLEYER.

The courses in journalism are designed to familiarize the student with the methods of practical journalism, the history and development of the American press, and the organization and management of the modern newspaper and magazine; and to give practical training in newspaper and magazine writing and editing. A laboratory equipped with typewriters, classified collections of newspaper and magazine articles, reference books, and files of representative daily and weekly newspapers is maintained for the students in these courses. In connection with the courses in journalism is given each year a series of special lectures by newspaper and magazine editors on various phases of journalistic work.

Instruction is given by the department of political science, in the law of the press, including the law of copyright, libel, and other topics relating to the publication of magazines and newspapers. A special course in current political topics and their effective literary presentation is also given by the department of political science for the students in journalism. In the College of Agriculture are given courses in agricultural journalism.

A graduate fellowship in journalism valued at \$400, is offered by the Alumni Association in connection with the Alumni Magazine.

1. Elements of Newspaper Writing. Practical talks on the work of the newspaper reporter, with practice in newspaper writing. Open to freshmen. *Throughout the year; F., 4. No credit.* Mr. BLEYER.
2. Newspaper Reporting and Correspondence. Lectures and practice in all the details of the work of the reporter and correspondent including news gathering and newspaper writing. Prerequisite, English 1 or the equivalent. *Throughout the year; M., W., F., 10.* Mr. BLEYER.
3. Newspaper Editing. Instruction and practice in editing copy, correcting proof, writing headlines, making up, and other details of editing, and in the organization and meth-

ods of local, state, and national news gathering. Prerequisite, Journalism 2 or equivalent practice. *Throughout the year; Tu., Th., 10.* Mr. BLEYER.

4. Editorial Writing. Theory and practice of editorial writing. Open to students who have had considerable practice in writing. *First semester; Tu., Th., 11.* Mr. BLEYER.
5. Special Feature and Magazine Work. Instruction and practice in preparing special articles for newspaper and magazine publication. Open to students who have had considerable practice in writing. *Second semester; Tu., Th., 11.* Mr. BLEYER.
10. Seminary in Journalism. Various problems connected with the editing and publishing of newspapers and magazines are considered from year to year. *Two credits. Th., 4 to 6.* Mr. BLEYER.

Current Political Topics (Political Science, 32). Current political problems, with training in the discriminating use of sources and in effective literary presentation; designed for students preparing for journalism. Open to advanced students. *Throughout the year; Tu., Th., 10.* Mr. WALLACE.

The Law of the Press (Political Science, 25). The law of copyright, literary property, libel, privileged publication, and other topics relating to the publication of books and newspapers. *Second semester.* Mr. SCOTT.

Agricultural Journalism. A course designed to meet the needs of those students who wish to study the agricultural press in order to become contributors or editors, is given in the College of Agriculture (See Index, under Agricultural Journalism).

LATIN

PROFESSORS SLAUGHTER, SHOWERMAN; ASSOCIATE PROFESSORS FISKE, LAIRD; ASSISTANT PROFESSOR ALLEN; MR. BRANDT, MR. HOOTON, MR. HASTINGS, MR. WEST.

The courses in Latin are divided into three groups:

I. B to 5, for undergraduates early in the college course, form an introduction to advanced courses, and furnish, for those who do not continue Latin beyond the second year in college, an acquaintance with the best specimens of prose and verse. They may not be counted for the master's degree. B is intended primarily for students in the Preliminary Medical Course, but may be taken by anyone. A is for students whose preparation has been less than the amount required for entrance. It counts toward the bachelor's degree, and the language requirement in the University, but will not be accepted as part of a Latin major. 1 must precede all except B and A. 2 is recommended to students who intend to make Latin a major, and should be taken in the first year along with 1.

II. 8 to 23 are open to students who have completed 1 and 3, or an equivalent, in group I, and may be counted toward the master's degree.

III. 25 to 33 are primarily for graduate students, and ordinarily not open to undergraduates, or those who have completed less than twenty-six semester hours of undergraduate Latin.

Latin Major

The requirements for a major in Latin are, in addition to the thesis, twenty-two hours as a minimum. At least eight hours should be chosen from group II, but no specific requirement of courses is made.

Primarily for Undergraduates

- B. Elementary Latin. (Free Elective.) The elements of Latin and Caesar's *Bellum Gallicum*, Bks. I-III. Cannot be used to satisfy the University's requirements in language. *Throughout the year; M., Tu., W., Th., F., S.* MR. BRANDT.
- A. Cicero and Virgil. Four orations of Cicero and six books of Virgil's *Aeneid*. Some attention to writing Latin. *Throughout the year; M., Tu., W., Th., F., S.* MR. HASTINGS.

1. Livy, Cicero and Terence. Livy, Books I and XXI; Cicero, *De Senectute*, and Terence, *Phormio* and *Andria*. Four sections. *Throughout the year*; M., W., F., 8, 10, and 2, and Tu., Th., S., 8. Mr. FISKE, Mr. SHOWERMAN, Miss ALLEN and Mr. BRANDT.
2. Prose Composition, supplemented by the reading of easy prose authors without preparation. *Throughout the year*; Tu., Th., 8, 10 and 2. Mr. FISKE, Mr. SHOWERMAN, Miss ALLEN, Mr. WEST and Mr. HOOTON.
3. Horace. Odes, satires, and epistles. *Throughout the year*; M., W., F., 9. Mr. SLAUGHTER, Mr. SHOWERMAN and Mr. FISKE.
4. Advanced Prose Composition with a special study of Latin syntax. Must be preceded by 2. *Throughout the year*; Tu., Th., 3. Mr. FISKE, Mr. BRANDT.
5. Catullus, Ovid, Pliny, and Martial. Intended to supplement 3, but may be taken without it. *Throughout the year*; Tu., Th., 9. Miss ALLEN.

For Undergraduates and Graduates

8. Cicero's Letters and Orations. A reading course with special attention to the life and personality of Cicero. *First semester*; M., W., F., 8. (Omitted in 1910-11.) Mr. SHOWERMAN.
9. Plautus, Terence, and Seneca. A reading course giving a general survey of the Roman drama. *First semester*; M., W., F., 8. Mr. SHOWERMAN.
10. Lucretius. Reading of *De Rerum Natura* I, III and V, and selections from the remaining books. Lectures and assigned readings. *Second semester*; M., W., F., 10. Mr. SLAUGHTER.
11. Virgil. Reading of *Aeneid* VII-XII, with selections from Virgil's other works. Lectures and assigned readings. *First semester*; M., W., F., 10. Mr. SLAUGHTER.
12. Life of the Greeks and Romans. A lecture course illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. *Throughout the year*; Tu., Th., 11. Mr. SHOWERMAN.

13. Literary Criticism. Selections from early Roman poetry and from Cicero, Horace and Quintilian. *First semester; M., W., F., 9.* Miss ALLEN.
14. Oratory and Philosophy. Lectures on the history of Roman oratory and philosophy and readings from Cicero and Seneca. *Second semester; M., W., F., 9.* Miss ALLEN.
21. Ovid, Tibullus, Propertius. In connection with a systematic study of classical mythology. *Throughout the year; M., W., F., 9.* (Omitted in 1910-11.) Miss ALLEN.
16. The Teaching of Latin. A course on the methods and materials used in the teaching of Latin, in secondary schools. Lectures, reports, discussions and practice teaching. Special attention to Caesar. Open to seniors who have had not less than twenty unit-hours of Latin. *Second semester; Tu., Th., 12.* Mr. SLAUGHTER, Mr. FISKE.
17. Latin Literature. A general survey from the earliest period to the reign of Trajan; lectures and required reading in Latin authors. *Throughout the year; Tu., Th., S., 10.* Mr. FISKE.
18. Roman Satire. Reading of selections from the works of Ennius, Lucilius, Varro, Horace, Seneca, Persius, Petronius, and Juvenal. Lectures on the origin and development of Roman satire. Topics. *Throughout the year.* (Omitted in 1910-11.) *Tu., Th., 10.* Mr. FISKE.
19. Roman Historians to Tacitus. Reading of selections from the Annalists, Cicero, Cæsar, Nepos, Sallust, Livy, and Tacitus. Lectures and topics. *Throughout the year; Tu., Th., 10.* (Omitted 1910-11.) Mr. BRANDT.
20. Literature of the Late Empire. Reading of Pagan and Christian authors, with lectures on the religion and literature of the period. The *Cupido et Psyche* of Apuleius and the *Octavius* of Minucius Felix will be read. *Second semester; M., W., F., 8.* Mr. SHOWERMAN.
22. Classical Art. (See Greek 15.) Illustrated lecture course on the history and appreciation of Greek sculpture, architecture, and painting; introductory to the study of art; Greek and Latin not necessary. Text-books and topics. *First semester; Tu., Th., 11.* (Omitted, 1910-11.) Mr. SHOWERMAN.

23. Roman Monuments. Illustrated lectures on the remains of ancient Rome, with special reference to history and literature. Latin not essential. *Second semester; Tu., Th., 11.* (Omitted, 1910-11.) Mr. SHOWERMAN.

For Graduates

25. Latin Grammar. Lectures on the sounds and forms of the Latin language. Open to graduates and properly qualified seniors. *First semester; Tu., Th., 12.* Mr. LAIRD.
26. Latin Syntax. Lectures on Latin syntax, illustrative of the historical method. *Second semester; Tu., Th., 12.* Mr. LAIRD.
27. Religion of the Greeks and Romans. Lectures, studies, and reports on the mythology, ritual, and religious institutions of the Greeks and Romans. *Throughout the year; hour to be arranged.* Mr. FISKE.
28. Roman Archaeology. Consists of 23, with an additional hour for reports. *Second semester; hour to be arranged.* Mr. SHOWERMAN.
30. Latin Literature. Lectures and assigned readings, with a minute examination of the authors read. A two-years' course covering, in 1910-11, the literature of the Republic; in 1911-12, the literature of the Empire, through the reign of Hadrian. *Throughout the year; hour to be arranged.* Miss ALLEN.
33. Latin Seminary. The work of the seminary varies from year to year. In 1910-11, a critical and exegetical study of the Odes of Horace will be made. The whole of the author will be read privately and reports, topics, and lectures will form a part of the year's work. *Throughout the year; Th., 4 to 6.* Mr. SLAUGHTER.

MATHEMATICS

PROFESSORS SLICHTER, VAN VLECK; ASSOCIATE PROFESSOR MASON; ASSISTANT PROFESSORS DOWLING, SKINNER; DR. ALLEN, DR. BUCHANAN, DR. BURGESS, MR. CHANEY, DR. DRESDEN, MR. GRIMES, MR. MOOTS, MR. MOULTON, MR. SIMPSON, DR. WOLFF, MR. H'DOUBLER.

The courses in Mathematics are divided into three groups, as follows:

A. Courses 1 to 8 are planned to give a working knowledge of elementary mathematics. All courses are elective except courses 1 and 7, required of students in the Course in Commerce.

Students who elect the minimum amount of mathematics in fulfillment of requirement "c" (see requirements for degree of Bachelor of Arts), may choose six hours from any of the first seven courses, provided courses 3 and 4 are not both chosen.

Students electing mathematics with a view of teaching the subject in the high schools are referred to the section on mathematics in the course for the training of teachers.

It will be advantageous for all students expecting to elect mathematics to present at least one-half a unit of preparatory work in algebra in addition to the two units in mathematics required for entrance.

B. Courses 11 to 23 are designed for students who desire to continue mathematical study, and who have completed the requisite courses in group A.

C. Courses 41 to 63 are intended primarily for graduate students.

Major in Mathematics

The requirements for an undergraduate major in mathematics are, in addition to the thesis, 26 semester hours as a minimum, exclusive of courses 1 to 4 and 7. Courses 5, 6, and 12 must be included.

For Undergraduates

1. Algebra. For students presenting one unit of algebra for entrance; prerequisite to all other courses in mathematics except 2 and 8. *Three credits. One semester.* Ten sections the first semester and one section the second semester. MR. SKINNER, MISS ALLEN, MR. DRESDEN, MR. SIMPSON.

2. Trigonometry. Plane trigonometry and logarithms; prerequisite to all other courses in mathematics except 1, 7, and 8. *Three credits. One semester.* Three sections the first semester and seven sections the second semester. Mr. SKINNER, Miss ALLEN, Mr. DRESDEN, Mr. SIMPSON, Mr. H'DOUBLER.
3. Analytic Geometry. Recommended to students presenting one and one-half units of algebra for admission and elective to students who have taken or are taking course 2. *Three credits. Second semester.* Two sections. Miss ALLEN, Mr. SIMPSON.
4. Analytic Geometry. Elementary course. *Throughout the year;*
Section 1. Tu., Th., 10. Mr. DOWLING.
Section 2. Tu., Th., 11. Miss ALLEN.
5. Calculus. Elementary course. Differentiation and integration of functions with the usual geometric and mechanical applications. Students who intend to specialize in mathematics or who desire calculus for applications in physics and science are advised, if possible, to take course 5 in the sophomore year. *Throughout the year. Section 1, M., W., F., 10. Mr. DOWLING. Section 2, M., W., F., 11. First semester, Mr. VANVLECK, and second semester, Mr. SKINNER. (1910-1911, Mr. DOWLING.)*
- 6a. Determinants and Theory of Equations. *First semester; Tu., Th., 12. (Second semester, 1910-11.) Mr. SKINNER.*
- 6b. Analytic Geometry. A continuation of course 3 or 4, devoted especially to elementary analytic geometry of three dimensions. *Second semester; Tu., Th., 12. (First semester, 1910-11.) Mr. DOWLING.*
7. Commercial Algebra. Required of students in the Course in Commerce. *Second semester; three hours a week.* Three sections. Miss ALLEN, Mr. DRESDEN, Mr. SIMPSON.
8. Solid Geometry. *Three credits. First semester.* Mr. —.

For Undergraduates and Graduates

11. Advanced Calculus. A working course. Partial derivatives, envelopes, line and multiple integrals, etc., with their applications to problems in geometry and mechanics. *First semester; M., W., F., 9. Mr. SKINNER.*

12. Differential Equations, with applications to geometry and mechanics. This course is designed primarily to be a working course for students in mathematics and physics. *Second semester; M., W., F., 10.* Mr. VAN VLECK.
13. Theoretical Mechanics. An elementary course in analytical mechanics. This course may be taken by those who have had analytic geometry and calculus. *Throughout the year; M., W., F., 11.* Mr. BUCHANAN (1909-10), and Mr. SLICHTER (1910-11).
15. Projective Geometry. Synthetic treatment. *Throughout the year; Tu., Th., 11.* Mr. DOWLING.
14. Modern Analytic Geometry. Homogeneous point and line coordinates, projective transformations, etc. *First semester; M., W., F., 9.* Mr. DOWLING.
19. Differential Geometry. The application of the differential calculus to the geometry of twisted curves and surfaces. *Second semester in alternate years; M., W., F., 8.* Mr. SKINNER. (Omitted in 1910-11.)
17. Vector Analysis and Quaternions. An introductory course with applications to important problems in geometry and mechanics. Adapted to the needs of students in physics. *First semester; M., W., F., 12.* (*Second semester, 1910-11.*) Mr. SKINNER.
18. Theory of Probabilities. This course is adapted to the needs of students of science and economics. *Second semester; W., F., 12.* Mr. SLICHTER.
20. Theory of Analytic Functions. *In alternate years throughout the year.* In 1910-11 it will be given only in the second semester and special attention will be paid to the theory of algebraic and entire functions. *M., W., F., 12.* Mr. VAN VLECK.
21. Theory of Functions of a Real Variable. A critical study of the theorems necessary to advanced work in analysis, with applications. *In alternate years throughout the year.* In 1910-11 it will be given only in the second semester. *Tu., Th., 11, and a third hour to be determined.* Mr. VAN VLECK.
22. The Teaching of Mathematics. A course treating of the content of elementary mathematics and of the problems of the teacher of mathematics in the secondary school. Prerequi-

site, course 5. Open to seniors, and to juniors upon the approval of the department. *Second semester; M., W., 12.* Mr. SKINNER.

23. Survey of Geometry and Algebra. A course beginning with the history of Greek geometry and discussing the development and nature of the leading principles of geometry and algebra. Supplementary to course 22 and designed for prospective teachers of mathematics in the secondary schools. *First semester; M., W., F., 12.* (Omitted in 1910-11.) Mr. VAN VLECK.

For Graduates

These courses are varied from year to year according to the needs of the students, other subjects being introduced in addition to those here announced.

41. Elliptic Functions. Arranged to give a working knowledge of the functions of Weierstrass and Jacobi. *Throughout the year; Tu., Th., 12.* (Omitted in 1910-11.) Mr. DOWLING.
42. Linear Differential Equations. An introduction to the modern theory. *Throughout the year; Tu., Th., 11.* (Omitted in 1910-11.) Mr. VAN VLECK.
44. Higher Geometry. Various geometric transformations, such as conformal representation, quadric and Cremona transformations, etc. *Throughout the year; Tu., Th., 12.* Mr. DOWLING.
46. Groups of Finite Order. A study of the fundamental properties of groups, followed by an examination of a few of the more important groups and their applications to geometry and analysis. *Throughout the year; Tu., Th., S., 12.* Mr. SKINNER.
49. Partial Differential Equations. *Second semester; M., W., F., 12.* (Omitted in 1910-11.) Mr. VAN VLECK.
50. Theoretical Hydrodynamics. The theory of ordinary and of vortex motion of fluids, followed by a study of theory of waves in liquids. *Throughout the year; Tu., Th., 11, and a third hour to be determined.* Mr. SLICHTER.
51. Theory of Potential and Harmonic Functions, inclusive of a study of Fourier's Series. *Three credits. Throughout the year.* Mr. SLICHTER.

52. Advanced Dynamics of Rigid, Fluid, and Elastic Bodies. Theory of waves. *Throughout the year*; M., W., F., 11. Mr. MASON.
61. Theory of Functional Equations. *Throughout the year*; Tu., Th., 12. (Omitted in 1910-11.) Mr. VAN VLECK.
62. Differential Invariants. An introduction to the theory of differential invariants and parameters, with applications to important problems in geometry and mechanics. *Throughout the year*; Tu., Th., 9. (Omitted in 1910-11.) Mr. SKINNER.
63. Higher Algebra, with special attention to the theory of quadratic forms and elementary divisors. *First semester*; Tu., Th., S., 9. (Given 1910-11.) Mr. SKINNER.

SEMINARY.—One hour a week on a subject to be later determined. *Second semester*. (Given 1910-11.) Mr. VAN VLECK.

MATHEMATICAL CLUB.—For instructors, graduates and seniors making mathematics their major. The object of the club will be to follow important recent developments in mathematics, whether in periodical literature, memoirs, books, or theses.

METEOROLOGY

MR. E. R. MILLER OF THE U. S. WEATHER BUREAU.

The courses in meteorology are intended to serve three purposes, 1, to afford a general survey of atmospheric processes such as might reasonably form part of a liberal education, 2, to prepare students of agriculture, commerce, engineering, journalism, medicine, physical geography, etc., for the scientific treatment of meteorological and climatological questions of importance in their professions, and 3, to fit students for the investigation of special problems in meteorology.

For Undergraduates

1. General Meteorology. The composition, temperature, pressure, moisture, and general circulation of the atmosphere; storms, weather, climate; observation of the weather, construction and study of weather maps, weather forecasting. Prerequisite, elementary physics. *First semester*. M., W., F., 2. *Three credits*. Mr. MILLER.

2. **Climates of the United States.** The physical conditions controlling the distribution of the temperature, rainfall, cloudiness, humidity, and wind in the United States; the relations of the climates of the United States to hygiene, industry, agriculture, and forestry. *Second semester. Tu., Th., 2. Two credits.* (Omitted 1910-11.) Mr. MILLER.
4. **Climates of the World.** The climates of the world in relation to man and his activities. *Second semester. Tu., Th., 2. Two credits.* (Omitted 1911-12.) Mr. MILLER.

For Graduates and Undergraduates

3. **Theoretical Meteorology.** Statics and dynamics of the atmosphere; solar radiation and its related periodic phenomena; reduction of meteorological observations. Prerequisites, Mathematics 11 and 12, Physics 2 or equivalents. *First semester. Hours to be arranged. Five credits.* Mr. MILLER.
6. **Climatology.** Climatic factors and the methods of statistical climatology; solar climate and the chief varieties of physical climate; changes of climate. Prerequisite, course 1. *Second semester. Hours to be arranged. Five credits.* Mr. MILLER.
5. **History of Meteorology.** The origin and development of meteorological theories, instruments, institutions. Prerequisite, course 1. *Second semester. W., 12. One credit.* (Omitted 1910-11.) Mr. MILLER.
7. **Meteorological instruments and methods.** The principles, construction, and use of meteorological instruments of precision. Prerequisite, Mathematics 11 and 12, Physics 2 or equivalents. *Second semester. Tu., Th., 12. (Omitted 1911-12) Two credits.* Mr. MILLER.

MUSIC

EMERITUS PROFESSOR PARKER; PROFESSOR LUENING; MR. BREDIN,
MR. CASE, AND MR. HALL.

The courses in music, except course 1, are open as electives to students, freshmen excepted, in any department of the University who show sufficient musical ability to pursue them with profit, and receive the same credit as similar courses in other departments of the University, except when otherwise specifically stated in the following explanatory statements.

Course 1 is open to election in the freshman year by candidates for the degree of Bachelor of Arts, in addition to a minimum of fourteen hours, but does not count as a part of the required 120 credits.

Students may be admitted to advanced courses on examination.

Special students may substitute private lessons in piano playing or singing for one or more studies on recommendation of the Professor of Music, but without credit toward graduation, except as specified under course 8. See the statement of the School of Music. (See Index.)

Classes meet in the music lecture room, Assembly Hall.

Students who desire to become connected with the University Military Band should confer with the leader.

Courses

1. Musical Theory. Elements of Music. No preparation necessary. For credits see paragraph above. *M.*, *W.*, 2. Mr. BREDIN.
2. Elementary Harmony. Prerequisites, the ability to read and play simple four-part music. 2 credits. 2 sections. *M.*, *W.*, 10 and *Tu.*, *Th.*, 4. Mr. BREDIN.
3. Advanced Harmony. Prerequisite, course 2. 2 credits. *M.*, *W.*, 11. Mr. LUENING.
4. Counterpoint. Prerequisite, course 2. 2 credits. *Tu.*, *Th.*, 10. Mr. LUENING.
5. Double Counterpoint and Fugue. Prerequisites, courses 2, 3, and 4. 2 credits. Hours to be arranged. Mr. LUENING.
6. Musical Composition. Prerequisites, courses 2 and 3. 2 credits. *M.*, *W.*, 9. Mr. LUENING.

7. History of Music. *Two credits. Lectures, Tu., Th., 3.* Mr. HALL.
8. Advanced Piano Playing, Singing, Organ, or Violin. Senior and Junior years only. Hours and credit to be arranged with the instructor and the Director of the School of Music, but not to exceed a total of ten semester hours.
9. Public School Music. 2 credits. *M., W., 5,* subject to change. Mr. CASE.
10. Advanced Study in Orchestral Music. Prerequisites, the ability to play some orchestral instrument. 1 credit, second year. *W., 7 p. m.* Mr. LUENING.
11. Sight-singing and Ear-training. 2 yr. course, twice a week but 1 credit for each semester. *Tu., Th., 9.* Mr. CASE.
12. Musical Form. First semester 2 credits. Hours to be arranged. Mr. LUENING.
13. Musical Appreciation. Lectures and musical illustrations. 2 credits. First semester. *Tu., Th., 11.* Mr. LUENING.
14. Masterpieces of Music. Analytical study of some masterpieces. 2 credits. *Second semester. Tu., Th., 11.* Mr. LUENING.
15. Choral Music. Rehearsals of the Choral Union. 1 credit. *Tu., 7:30 p m.*
16. Instrumentation. Prerequisites, courses 2 and 3. 2 credits. Hours to be arranged. Mr. LUENING.
17. Ensemble Playing. Prerequisites, at least two yrs. of course 8. 2 credits. Mr. HALL.

PATHOLOGY

PROFESSOR BUNTING, DR. BROWN.

For full description of courses in Pathology, see announcement under Medical School.

For Undergraduates and Graduates

1. General Pathology. *First semester; M., 8; W., 8-11; F., 8-12. Four credits.*
2. Special Pathology. *Second semester; M., 8; W., 8-11; F., 8-12. Four credits.*

3. Experimental Pathology. *Throughout the year; M., 9-12. Two credits.*

Primarily for Graduates

4. Investigation under direction.
5. Journal club. *Tu., 10.*

PHARMACOLOGY AND TOXICOLOGY

PROFESSOR LOEVENHART, MR. ARKIN.

- 1, 2, 4, 5. General Courses. Lectures. *M., Tu., Th., F., 2. Laboratory, W., 2-6. Five credits.* Dr. LOEVENHART and Mr. ARKIN.
8. Advanced Work. Dr. LOEVENHART.
12. Individual Work. Dr. LOEVENHART.
16. Journal Club. *Tu., 9.*

PHARMACY

PROFESSOR KREMERS; MR. DU MEZ, MR. SIMONS.

Primarily for Undergraduates

1. Laboratory Technique. The principles and practice of pharmaceutical operations, such as weighing, determination of specific gravity, boiling point, melting point, optical rotation, maceration, percolation, diffusion, dialysis, crystallization and precipitation. *Lectures and recitations, Tu., 11; two laboratory periods.* Mr. KREMERS and Mr. DU MEZ.
2. Pharmaceutical Technology. The study and manufacture of galenical and other preparations: waters, tinctures, fluid extracts, spirits, oleo-resins, etc.; also of pills, suppositories, ointments, plasters, etc. *First semester; lectures and recitations, Tu., Th., 11; three laboratory periods.* Mr. KREMERS and Mr. SIMONS.
3. Prescription Practice. The study of the prescription and of the materials that enter into it; practice in the compounding of physicians' prescriptions; also the study of physical, chemical, and therapeutical incompatibilities. *Second semester; lectures and recitations, Tu., Th., 11. Two laboratory periods.* Mr. KREMERS and Mr. SIMONS.

4. Drug Store Practice. A course of lectures and topics on aspects of drug store practice, ranging from the planning and equipment of a store to salesmanship. Practical talks by druggists and others will be a special feature of the course. *F.*, 4.

PHILOSOPHY

PROFESSORS JASTROW, MCGILVARY, SHARP; DR. STARCH, DR. WRIGHT,
AND MR. OTTO.

The student is at liberty to begin his work in philosophy with any of the courses designated as primarily for undergraduates. But those who desire to take three hours' work through one year in the department, whether they wish to continue with the subject or not, will ordinarily find it most profitable to select course 1 or 31 in the first semester, and either 11, 21, 32, or 41 in the second semester.

The requirements for an undergraduate major in philosophy are a minimum of twenty semester hours including the thesis. Of these, at least eight hours must be taken from the courses for undergraduates and graduates.

Primarily for Undergraduates

1. Psychology: Introductory Course. *First semester.* Mr. JASTROW and Mr. SHARP, Mr. STARCH and Mr. OTTO. *Three credits.*
 - Section 1.* *Tu., Th., 9, and F., at an hour to be arranged.* Mr. JASTROW and Mr. STARCH.
 - Section 2.* *M., W., 8, and F., at an hour to be arranged.* Mr. SHARP and Mr. OTTO.
11. Logic. *First semester; M., W., F., 9 and 11.* Repeated in the *second semester; M., W., F., 8 and 12.* Mr. SHARP and Mr. OTTO.
21. Introduction to Philosophy. *Second semester; M., W., F., 9.* Mr. MCGILVARY.
23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature. A study of Wordsworth, Carlyle, Emerson, Arnold, Tennyson, and Browning. *Second semester; Tu., Th., 10.* Mr. WRIGHT.

- 9a. The Psychology of Religion. *Second semester; Tu., Th., 11.* Mr. WRIGHT.
25. The Relation of Man to Nature. *First semester; Tu., Th., 11.* Mr. OTTO.
31. History of Ancient and Medieval Philosophy. *First semester; M., W., F., 11.* Mr. MCGILVARY.
32. History of Modern Philosophy. *Second semester; M., W., F., 11.* Mr. MCGILVARY.
41. Ethics: Introductory Course. *Second semester; M., W., F., 8.* Mr. SHARP.
42. Social and Political Ethics. A study of moral rights, especially of the rights of personal liberty, freedom of contract, national independence, suffrage, and property. *First semester; Tu., Th., 12.* Course 41 is not required as a preliminary. Mr. SHARP.
48. Psychology of Social Relations. *First semester; Tu., Th., 11.* Mr. WRIGHT.
51. Aesthetics. A general survey of aesthetical appreciation, with practical applications to art. An introductory course. *First semester; Tu., Th., 10.* Mr. JASTROW.

For Undergraduates and Graduates

2. Advanced Analytical Psychology. *Second semester; Tu., Th., 9* (subject to change). Mr. SHARP.
3. Experimental Psychology, Part I. (a) Lectures and demonstrations. *First semester; Tu., Th., 11;* (b) Laboratory practice *at hours to be arranged.* (a) and (b) together, *three credits.* Part I deals with sensation, perception, movement, reactions and the simpler functions of the mental life. Mr. JASTROW and Mr. STARCH.
4. Experimental Psychology, Part II. (a) Lectures and demonstrations. *Second semester; Tu., Th., 11;* (b) Laboratory practice *at hours to be arranged.* (a) and (b) together, *three credits.* Part II deals with memory, association, attention, imagination, reasoning, the emotions and the more complex manifestations of the mental life. Either courses 3 or 4 may be taken in advance of the other, or separately. Course 1 or its equivalent is a desirable prerequisite. Mr. JASTROW and Mr. STARCH.

- 4a. Experimental Psychology for Premedical Students. A survey of mental behavior and conditions, and their abnormal variation. *First semester; M., W., 10, until January.* Laboratory period; *Tu., Th., 2 to 5 after January.* Mr. JASTROW and Mr. STARCH.
5. Research in Psychology. *Throughout the year; hours to be arranged.* Mr. JASTROW and Mr. STARCH.
6. Comparative Psychology. Lectures and assigned readings on animal psychology and mental development in man. *Second semester; M., Tu., W., 3.* (Omitted in 1910-1911). Mr. JASTROW.
7. Abnormal Psychology. Lectures and assigned readings covering the main forms of unusual and abnormal mental phenomena. *Second semester; Tu., Th., 10.* Mr. JASTROW.
9. The Psychology of Language. A survey of the language-processes and their mode of action, including the anthropological, physiological, historical and logical aspects. *Second semester; M., W., 3.* Mr. JASTROW.
19. Psychological Principles and their Application. A survey of the principles applicable to such practical phases of influencing and appealing to conduct as are involved in the careers of the law, of business, of social relation. *Second semester; Tu., Th., 8.* Mr. STARCH.
26. Bearing of Evolution on Philosophy. *First semester. M., W., F., 9.* Mr. WRIGHT.
36. The British Philosophers of the Eighteenth Century. Locke, Berkeley, and Hume. *First semester; M., W., F., 10.* Mr. WRIGHT.
37. Kant. *The Critique of Pure Reason.* *Second semester; M., W., F., 10.* Mr. WRIGHT.
44. History of Morality. An account of moral practice among so-called primitive peoples and among some historical peoples in ancient and medieval times. *First semester; M., W., F., 9.* Mr. MCGILVARY.
45. The Evolution of Morality. *First semester; twice a week.* Mr. SHARP. (Omitted in 1909-1910.)
46. Contemporary Moralists. *Second semester; twice a week.* Mr. SHARP. (Omitted in 1909-1910.)

Primarily for Graduates

10. Psychological Seminary. *Alternate weeks.* Mr. JASTROW.
13. Advanced Logic. *Two hours a week.* Mr. WRIGHT.
40. Metaphysical Seminary. *Throughout the year; Tu., 2 to 4.*
Mr. MCGILVARY, Mr. WRIGHT.
47. Ethical Seminary. *Throughout the year; Th., 4 to 6.* Mr. SHARP.

PHYSICS

PROFESSORS MENDENHALL, SNOW; ASSOCIATE PROFESSOR MASON;
ASSISTANT PROFESSORS GAGE, INGERSOLL; MR. FORSYTHE, MR.
FULCHER, DR. ROEBUCK, MR. STEVE, MR. TERRY; MR. CHAM-
BERLIN, MR. DAHM, MR. DIKE, MR. HARRISON, MR. KEYSER, MR.
LITTLETON, MR. ROSENBERG, MR. SHERWOOD, MR. SIMPSON, MR.
TARRELL, MR. YOUNG; MR. BIRGE, MR. MCCAULEY.

Following the general lectures and introductory laboratory practice given in course 1, this department offers advanced work which may be divided into two general lines. Courses 2 to 7 are arranged for those who are desirous of obtaining a more special knowledge of some of the newer developments in physics, or for those who are preparing to teach. Courses 8 to 24 are designed for those who intend to do special work in physics, and for these courses an adequate mathematical preparation is a prerequisite. This should include a working knowledge of the differential and integral calculus, and the equivalent of courses 2, 3, and 8.

Primarily for Undergraduates

1. General Lectures and Introductory Laboratory Practice.
This course is open to election by all students, and may be taken without difficulty by those who have not had the mathematics of the freshman year. *A full study throughout the year. Lectures: M., Tu., W., Th., at 12.* Mr. SNOW. One recitation by the class in smaller sections. Mr. ROEBUCK and Mr. STEVE. Laboratory practice, *twice a week at hours to be arranged.* Mr. GAGE, Mr. STEVE, Mr. CHAMBERLIN, Mr. DAHM, Mr. HARRISON, Mr. KEYSER, Mr. ROSENBERG, Mr. SHERWOOD, Mr. SIMPSON, Mr. TARRELL, Mr. YOUNG.

For Undergraduates and Graduates

2a. Advanced Course of Lectures. Heat and light. *First semester; M., W., F., at 12.* Mr. MENDENHALL.

2b. Advanced Course of Lectures. Electricity and magnetism. *Second semester; M., W., F., at 12.* Mr. TERRY.

The subjects treated are taken up more fundamentally than is possible in course 1, and lead to the still more advanced courses 8a and 8b.

3a. Advanced Laboratory Practice. Heat and light. *First semester; S., 9 to 1.* Mr. MENDENHALL and Mr. LITTLETON.

3b. Advanced Laboratory Practice. Electricity and magnetism. *Second semester; S., 9 to 1.* Mr. FORSYTHE and Mr. DIKE.

Courses 3a and 3b are designed to accompany courses 2a and 2b.

4. The Teaching of Physics. A course of experimental lectures covering all branches of physics and designed to serve as a training course for those who are preparing to teach. The aim is to train each person in the clear presentation of this subject, and to acquaint him with the details of manipulating demonstrational apparatus.

The course is open to all who have taken courses 2a, 2b, 3a, and 3b, or who are taking these courses in connection with this study. *Second semester; Tu., W., at 5.* Mr. SNOW.

7. High and Low Temperature Measurement. Recent developments in theory and practice are considered, accompanied by laboratory exercises with the various methods. *First semester; one lecture and one laboratory period a week.* Mr. INGERSOLL.

8a. Mathematical Physics. Theory of electricity and magnetism. *First semester; Tu., Th., F., at 10.* Mr. MASON.

8b. Mathematical Physics. Special topics in physical optics. Theory of the grating, spectroscopy, and dispersion. The first part of Schuster's *Theory of Optics* is used as a text. *Second semester; M., W., F., at 9.* Mr. MENDENHALL.

Courses 8a and 8b are extensions of courses 2a and 2b and are open to those who have taken these courses or their equivalents, and also a course in the differential and integral calculus.

9. Electrical and Magnetic Measurements. A laboratory course for the careful measurement of the more complex electrical and magnetic quantities and the determination of constants. Elective for all who have completed courses 3b or 104. *Second semester, Tu., Th., 2' to 4.* Mr. FOWSYTHE and Mr. DIKE.
10. Modern Optical Instruments. An advanced laboratory course in light and radiation, designed to follow courses 2a and 3a, which are prerequisites. *Second semester; four laboratory hours a week, at hours to be arranged.* Mr. INGERSOLL.
11. Colloquium. This is an informal meeting of the advanced students and members of the department of physics for the critical reading and discussion of the current periodical literature. *Throughout the year; F., 4 to 6.* Mr. MENDENHALL.
12. Thesis. At the beginning of the first semester, the student is expected, with the advice of the instructors, to take up some special line of investigation, to be conducted under the direction of those in charge of the department. *Full study throughout the year.* Mr. MENDENHALL, Mr. INGERSOLL and Mr. TERRY.

Primarily for Graduates

15. Elements of Theoretical Physics. This course, which includes the subjects of elasticity, the kinetic theory, the potential function, and the conduction of heat, is designed for those who expect to devote but one year to graduate work, and is required of all candidates for the master's degree offering physics as a major study. *Throughout the year; M., W., F., at 9.* Mr. INGERSOLL.
16. Advanced Dynamics. The mechanics of rigid, fluid, and elastic bodies; wave motion; sound. *Throughout the year; M., W., F., at 11.* Mr. MASON.
17. Applications of the Electron Theory. A course on the electron hypothesis and some of its consequences. *First semester; two hours a week.* Mr. MENDENHALL.
18. Molecular Mechanics. Special topics in the constitution and properties of matter from the mechanical standpoint. *Second semester, two hours a week.* Mr. MASON.

19. Thermodynamics. The treatment in this course is substantially the same as that given in Bryan's *Thermodynamics*, with additional applications to problems of radiation. *Throughout the year*; M., W., F., at 10. (Omitted in 1910-11.) Mr. MENDENHALL.
20. Theory of Electricity. A mathematical treatment of the Maxwell theory and its later developments. *Throughout the year*; M., W., F., at 12. (Omitted in 1910-11.) Mr. MASON.
21. The Electromagnetic Theory of Light. A rigid mathematical treatment of electromagnetic waves and their relations to the phenomena of light. *Throughout the year*; M., W., F., at 10. Mr. MENDENHALL.
22. Theory of the Electron. A mathematical treatment of the electron theory, designed to follow course 20. *Throughout the year*; M., W., F., at 12. Mr. MASON.
23. The Theory of Relativity. A study of the principle of relativity and its applications. *Throughout the year*; one hour a week. Mr. MASON.
24. Graduate Research. This course is designed for those who have completed the equivalent of the laboratory practice represented by the undergraduate courses, and who now desire to devote some time to investigation in special lines. Mr. MENDENHALL and Mr. INGERSOLL.

Engineering Courses

101. General Lectures and Introductory Laboratory Practice. This course is similar in many respects to course 1, but is more technical in its nature, and is particularly designed to meet the needs of the engineering students, of whom it is required. Lectures, M., at 5; Th., at 4. Mr. TERRY. Two recitations a week by the class in smaller sections. Mr. FULCHER, Mr. INGERSOLL, Mr. ROEBUCK. Laboratory practice, *twice a week throughout the year*. Mr. GAGE, Mr. STEVE, Mr. CHAMBERLIN, Mr. DAHM, Mr. HARRISON, Mr. KEYSER, Mr. ROSENBERG, Mr. SHERWOOD, Mr. SIMPSON, Mr. TARRELL, Mr. YOUNG.

104. Precision of Measurements. A laboratory course in the exact determination of electrical quantities. Required of juniors in Electrical Engineering, and elective for students in the other engineering courses. *First semester; twice a week.* Mr. FORSYTHE and Mr. DIKE.

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR ERLANGER; ASSISTANT PROFESSOR BRADLEY; DR. MEEK;
MR. PETERSEN.

Primarily for Undergraduates

- 1a. Elements of Human Anatomy and Physiology. Lectures, quizzes and demonstrations giving a general knowledge of the structure and functions of the human body, and specially adapted for teachers. Students electing this course should have had some chemistry. *Second semester; M., W., F., 11.* Mr. MEEK.
- 1b. Laboratory Course in Elements of Physiology. Open to those taking course 1a. *One credit. Second semester; hours to be arranged.* Mr. MEEK.

For Undergraduates and Graduates

The following courses are designed especially for students intending to study medicine or to teach the biological sciences. For details see announcement under Medical School.

4. Physiological Chemistry. (a) Lectures. (b) Laboratory course. (c) Conferences. *Second semester; Tu., Th., F., S., 10 to 1. Four credits.* Mr. BRADLEY and Mr. PETERSEN.
5. Physiology. Lectures and demonstrations. *Second semester; Tu., Th., 12. Two credits.* Dr. ERLANGER, Mr. MEEK and Mr. PETERSEN.
6. Physiology. Course 5 continued. *First semester; M., Tu., W., Th., F., 12.* Mr. ERLANGER, Mr. MEEK and Mr. PETERSEN.
7. Laboratory work. Required of all students taking course 6. *First semester until the Christmas recess; M., W., F., 2 to 5. Two credits.* Dr. ERLANGER, Mr. MEEK and Mr. PETERSEN.

8. Advanced Laboratory course in Physiology (including research). Dr. ERLANGER.
10. Advanced Laboratory Course in Physiological Chemistry. Mr. BRADLEY.
12. Journal Club. Advanced students are expected to report from time to time upon papers of physiological and physiological-chemical interest that may appear in the current journals. *Throughout the year; one hour a week. One credit.*

POLITICAL ECONOMY

PROFESSORS ADAMS, COMMONS, ELY, GILMAN, MEYER, ROSS, W. A. SCOTT, TAYLOR; MR. AUSTIN, MR. BIDGOOD, MR. CAMPBELL, MR. DUDGEON, MR. GRAY, MR. KING, MISS MACGILL, MR. RASTALL, MR. SECRIST, MR. TUCKER.

The purpose of the department is to afford means for systematic and thorough study in economics and social science. The courses are graded and arranged so as to meet the wants of students in the various stages of their progress, beginning with elementary and proceeding to the most advanced work. They are also designed to meet the needs of different classes of students; as, for instance, those who intend to enter the public service, business, the professions of law, journalism, the ministry, charity work, or teaching, and those who wish to supplement their legal, theological, or other professional studies with courses in economics or social science. Capable students are encouraged to undertake original investigation and assistance is given them in the prosecution of such work through seminars and the personal guidance of instructors. Special funds or equivalent arrangements have been secured for the investigation of the American labor movement, taxation in Wisconsin, railway transportation and the manufacturing industries of Wisconsin. A means for the publication of the results of investigations of merit and importance is provided in the University Bulletin.

Among the special facilities which Madison affords to students in political economy mention should be made of the various libraries. The library of the University of Wisconsin is especially rich in economic works, while the Wisconsin Histori-

cal Library has valuable collections, helpful in research and investigation. The materials for the study of history described in connection with the work in the Department of History are especially helpful to students working in the field of political economy at a time when political economy is giving so much attention to historical investigation. The University Library has complete sets of the most important economic and statistical journals. In the field of labor history and labor legislation the library facilities are exceptional for research. The Historical Library is the custodian of the extensive collection of labor and employers' papers, convention proceedings, agreements, etc., secured through the American Bureau of Industrial Research. Transcripts of unique manuscript material are constantly being added to this collection. Mr. William English Walling of Chicago has presented important collections of books, papers, and pamphlets dealing with modern European socialism and social problems. Special attention is called to the Schlueter Collection of books, papers and manuscripts, recently acquired of Mr. Herman Schlueter of New York City. It is one of the richest collections in existence relating to the early history of socialistic movements in Germany and certain phases of similar movements in the United States and other countries and is said to contain documents that cannot be found even in the archives of the social democratic party in Germany; and is indispensable for any exhaustive scientific work in this field. In 1905, Mr. James J. Hill of St. Paul presented \$5,000 to be expended for the development of the library on Transportation, and since then has made an additional gift.

The sons of the late Henry D. Lloyd have presented their father's collection of papers and manuscripts which were gathered together by him in various parts of the world while engaged in his investigations and the preparation of his books.

The studies offered by the department are elective in all the courses of the University. The graduate work of the department may lead to the master's degree in not less than one year, and to the doctor's degree in not less than three years.

The work of this department has the following distinct but related aims:

1. To provide instruction in economics and sociology for undergraduates in all the courses of the University.

2. To provide advanced and graduate work in the studies falling within its field.

3. To assist and encourage the development of these studies.

4. With the co-operation of other departments to provide special training courses for various practical pursuits.

5. To supplement the work of the Law School.

Attention is here called to the fact that graduates who are pursuing the law course may prepare to take their master's degree at the same time with the degree in law by completing the equivalent of two full studies during one year's work. Graduates of the Law School are encouraged to devote an additional year to broadening out their training in economics, politics, and jurisprudence.

Especial attention is called to the large number of related courses in philosophy and ethics, and also to the considerable number of journalistic courses.

POLITICAL ECONOMY AS AN UNDERGRADUATE MAJOR.—The requirements for an undergraduate major, in addition to the thesis, are twenty-one credits as a minimum, selected in part from the advanced courses.

POLITICAL ECONOMY AS A GRADUATE MAJOR.—Candidates for the degree of Doctor of Philosophy in this department are required to present in their principal subject the equivalent of at least two full graduate courses during two years; in their first subordinate the equivalent of at least one such course during two years; and in their second subordinate the equivalent of at least one such course during one year.

All such candidates will be expected to be familiar with the history of economic thought, the elements of statistics, and the principles of political economy as presented in advanced modern treatises.

Each candidate must have also made an intensive study of at least one of the following special fields: economic theory and institutions; economic history; sociology; labor; public finance; money, banking, and private finance; transportation. In the special field or fields selected, the candidate will be expected to exhibit not only thorough knowledge of the literature, methods of study, the social bearings of the subjects included, but also ability to prosecute research.

Candidates for the master's degree must present in their

principal subject the equivalent of at least two full graduate courses during one year, and in their subordinate subject the equivalent of at least one such course.

POLITICAL ECONOMY AS A GRADUATE MINOR.—For a minor, candidates whose major falls in another department may present either the general subjects required of all candidates with a major in economics, or any one of the special groups mentioned above. Candidates for the degree of Doctor of Philosophy may select their major and one of their minors in this department.

Primarily for Undergraduates

- 1a. The Elements of Economics. A general survey based upon the study and discussion of Ely's *Outlines of Economics*, supplemented by lectures, assigned reading, and exercises. Required of sophomores in the Course in Commerce and of all students beginning the subject of economics. *Repeated each semester; lectures F., at 12; quiz sections Tu., Th., at 8, 9, 10, 11, 12.* Mr. SCOTT, Mr. ELY, Mr. COMMONS, Mr. ADAMS, Mr. GREY, Mr. CAMPBELL, Mr. SECRIST, Mr. AUSTIN, Mr. BIDGOOD.
- 1b. Advanced Economics. An advanced course in general economics intended primarily for students who have had course 1 and intend to major in political economy. *Second semester; Tu., Th., at 10 and quiz. Three credits.* Mr. ADAMS.
- 1 Agr. The Outlines of Agricultural Economics. A study of economic principles in their application to (1) the organization of agricultural production, (2) the marketing of farm products, (3) the purchase of land, equipments, and other supplies, and (4) state activities affecting the economic interests of the farmer. *First semester; three credits. Second semester; two credits.* Mr. TAYLOR.
2. Elementary Sociology. Lectures copiously illustrated with lantern slides in order to give a graphic idea of the variety of social forms, and to show the actual evolution in each of the great departments of social life. A synoptic course for those who wish a general view of the subject. *Attendance only. One credit. First semester; M., W., F., at 10.* Mr. ROSS.

3. Elements of Public Finance. An introductory study of the general principles of public expenditure, revenue, and indebtedness. *First semester; M., W., F., at 9. Three credits.* Mr. ADAMS.
5. The Elements of Money and Banking. An introductory course, based on Scott's *Money and Banking*. Repeated each semester. In the first semester the course will be adapted to the needs of those who do not expect to continue the subject in advanced courses. In the second semester the needs of those who expect to specialize in banking and finance will be chiefly consulted. *M., W., F., at 9.* Mr. SCOTT and Mr. SECRIST.
- 7a. Economic Geography. A general survey of the history and present status of industry and commerce in the principal countries of the world excepting the United States. *Second semester; M., W., F., at 10 and 11.* Mr. TAYLOR.
- 7b. Economic Geography of the United States. After a brief survey of the development of industry and the expansion of commerce, a special study is made of the production and distribution of the principal articles which enter into American commerce. *First semester; M., W., F., at 8.* Mr. TAYLOR.
- 8 Agr. Farm Accounting. This course is designed to give the agricultural student such training in bookkeeping and accounting as will enable him to determine the financial results of his farm operations. *Second semester, two credits.* Mr. VALENTINE.
- 8a. The Elements of Accounting. Business forms, methods and documents. Double-entry drills, modern forms of accounting and practice in the use of essential books, and in treating and properly stating partnership accounts. *Throughout the year. M., W., 2-4, or Tu., Th., 2-4.* Mr. GILMAN, Mr. HAYES and assistants.
- 8b. The Theory and Practice of Accounting. Corporation accounts, analysis of classified statements of losses and gains, revenue, manufacturing, and trading accounts and balance sheets from trial balances. Practical problems in accounting procedure. Prerequisite, course 8a. *Throughout the year; Tu., Th., 10-12.* First semester's work may

be taken without the second. Mr. GILMAN and Mr. KERSCHENSTEINER.

- 8c. Advanced Accounting and Auditing. This course is designed to prepare special students for employment as public accountants and auditors. Lectures, analysis of accounting systems and laboratory practice. Must be preceded by 8a and 8b. *Throughout the year; Tu., Th., 11-1.* Mr. GILMAN.
- 8d. Business Organization and Management. A practical study of the typical industries and occupations and of the fundamental principles and methods of modern business procedure. Course open to seniors only. *Throughout the year; Tu., Th., at 9.* Mr. GILMAN and Mr. RASTALL.
9. Commercial Law. The law of contracts, commercial paper, agency, partnership, corporations, sales, public service companies, real estate, probate, and insurance treated with reference to the legal rights and liabilities arising in the conduct of business. *Throughout the year; M., W., F., at 11.* Mr. GILMAN.
18. Senior Seminars for Thesis Students. Mr. ADAMS, Mr. COMMONS, Mr. GILMAN, Mr. SCOTT, and Mr. TAYLOR.

For Undergraduates and Graduates

20. Industrial Evolution and Its Problems. A general survey of industrial development followed by an examination of special problems, such as custom and competition, monopolies and trusts, concentration of wealth, municipal ownership, the inheritance of property, etc. *First semester; lectures, Tu., Th., at 11; and one hour for recitation and text-book work to be arranged. Three credits.* Mr. ELY and Mr. GREY.
21. History of Economic Thought. The principal topics will be the following: The history of economic thought in classical antiquity; its subsequent development to the time of the mercantilists; the rise and growth of economics as a distinct branch of social science with a brief discussion of existing schools of economic thought. (Omitted in 1910-11.) *First semester; Tu., Th., at 10.* Mr. ELY and Mr. GRAY.

22. Modern Socialism. *First semester; Tu., Th., at 9.*
- 23a. Labor Problems. Races, immigration, trade unions, employers' associations, etc. *First semester, 1911-12. M., W., F., at 9. Mr. COMMONS.*
- 23b. Labor Legislation. American and foreign. Trade unions, factories, accidents, industrial hygiene, etc. *First semester, 1910-11. M., W., F., at 9. Mr. COMMONS.*
24. Problems in Taxation. Comprehends the more concrete problems of the day: mortgage, railroad, insurance, and double taxation, the personal property and inheritance taxes, etc. *Second semester; Tu., Th., at 9. (Omitted in 1910-11.) Mr. ADAMS.*
26. Agricultural Economics. This course consists of a study of the economic principles which underlie farm management, estate management, and agrarian legislation. Open to students who have had course 1. *Second semester; two hours per week. Mr. TAYLOR.*
27. Historical and Comparative Agriculture. This course consists of a sketch of the development of agriculture and an attempt to find an explanation of historical changes and geographical differences in methods of farm organization. *First semester; two credits. Mr. TAYLOR.*
28. Research Work in Agricultural Economics. Opportunity is given for advanced students to do research work on selected problems in agricultural economics. *Second semester; two credits. Mr. TAYLOR.*
29. Manufacturing Industries. State of manufactures in England in 1750. The rise of the factory system and its industrial and social consequences. The textiles and the iron and steel industries. The industrial development of Germany and the United States. Tariff policies of the nineteenth century. *First semester; three credits. (To be announced.)*
30. Statistics. A treatment of general statistical methods followed by the discussion of concrete problems in economic and social statistics. Two lectures and four hours laboratory work a week. *Three credits. Throughout the year, Tu., Th., at 12. Mr. ADAMS.*

33. Financial History of the United States. The main lines of our financial development, including our monetary and banking history, will be traced by means of lectures, of which two will be given each week. Readings in the literature of the subject and topics for investigation will be assigned. A third hour each week will be devoted to quizzes on the lectures and assigned readings. *First semester; lectures Tu., Th., at 12.* Mr. SCOTT.
34. The Money Market. Lectures on the machinery, methods, and movements of the American and English money markets, accompanied by exercises in the interpretation of the weekly statements of the Associated Banks of New York and the Bank of England, the English bank and market rates, the published rates on loans in the New York market, and the rates of foreign exchange. *First semester; lectures Tu., Th., at 12.* (Omitted 1910-11.) Mr. SCOTT.
35. Transportation and Communication. A general introductory course dealing with the more important principles and facts relating to railways, waterways, and the express, telephone, telegraph, and postoffice services. *Second semester; M., W., F., at 8.* Mr. MEYER and Mr. TUCKER.
36. Special Problems in Transportation. An advanced course in which the more important special transportation problems are discussed in detail. Lectures and reports. *First semester; Tu., Th., at 9.*
- 37a. Corporation Economics. Influence of an enlarging scale of production upon business organization; forms of organization antecedent to the joint stock company; historical development of the business corporation; history of joint stock companies in England and the United States under common law, charters, and registration acts; the economies and wastes of large scale production and of monopolies; pools, trusts, and consolidations; legislation and supervision. *Second semester; M., W., F., at 9.*
- 37b. Corporation Finance. A study of the finances and securities of railroad and industrial corporations. (Open only to those who have taken course 37a.) (Omitted in 1909-10.)

- 37c. Speculation and Investment. A study of stock and produce exchanges, and investment institutions. (Open only to those who have taken course 37a.) *First semester; M., W., F., at 10.*
38. Insurance Economics. Principles and methods of insurance; rise, progress, and problems of associations for indemnity. Special attention will be given to the various forms of life insurance, including an elementary survey of life insurance mathematics. *Second semester; Tu., Th., 8.* Mr. PRICE.
39. Social Psychology. The social mind and its reaction upon the individual mind. The laws of mob-mind, "craze," fashion, conventionality, custom, "spirit of the age," public opinion, etc. Studies of non-conformity, individuality, leadership, and innovation. Interpretation of contemporary society. *First semester; M., W., F., at 11.* Mr. ROSS.
40. General Sociology. A systematic survey of social processes with the view of establishing principles and laws. The inductive method is followed, and a large amount of classified data is presented. *Second semester; M., W., F., at 11.* Mr. ROSS.
41. Charities and Corrections. A study, first, of the dependent class and their relief; second, of the defective class, and their institutional treatment; third, of the delinquent class, causes and prevention of crime, prison management and discipline. Public institutions will be visited. *Second semester; M., W., F., at 10.* Mr. ROSS.
- 42a. Public Utilities. Municipal; American and foreign; public and private ownership and regulation; economic and legal principles. Seniors and graduates. *First semester; M., W., F., at 8.* Mr. COMMONS and Mr. DUDGEON.
- 42b. Public Utilities. Research at office of Railroad Commission. *Throughout the year. Three credits each semester.* Mr. MEYER.
44. Socialism. Examination of the underlying causes of the socialist movement of modern times, particularly as these causes are found in the Industrial Revolution of the 18th

and 19th centuries, together with a brief historical survey of the various schools of socialist thought. The aim of this course is a critical but impartial study of socialism as a philosophy of industrial evolution and as a program of economic reform. *Summer Session*. Mr. ELY.

- 45a. American Labor History to 1860. Industrial and political evolution. Lectures. *Second semester* 1910-11. M., W., F., at 9. Mr. COMMONS.
- 45b. American Labor History since 1860. Lectures. *Second semester*, 1911-12. M., W., F., at 9. Mr. COMMONS.

Primarily for Graduates

50. Seminary in Finance. For seniors and graduate students who desire training in the investigation of financial topics. *Weekly at hours to be arranged*. Mr. SCOTT.
- 51a. The Classical Economists. The evolution and characteristics of the classical political economy of England. Especial attention will be given to the economic, social and philosophical environment in which this system of thought grew up, and to the specific forms it assumed in the writings of the Physiocrats, Adam Smith, David Ricardo, and John Stuart Mill. Lectures and round-table discussions. *Second semester; Tu., Th., at 12*. (Omitted in 1910-11.) Mr. SCOTT.
- 51b. Political Economy since John Stuart Mill. The reaction against the classical political economy of England and the chief lines of development since John Stuart Mill. Especial attention will be devoted to the modification of the fundamental doctrines of the classical economists and to the evolution of new lines of thought and investigation. Lectures and round-table discussions. *Second semester; Tu., Th., at 12*. Given alternate years with course 51a. Mr. SCOTT.
52. The Distribution of Wealth. Part I. This course is an introduction to the economic philosophy of distribution. Special attention will be paid to the relations of property, public and private, to distribution. *First semester; M., W., F., at 10*. Mr. ELY.

53. Distribution of Wealth. Part II. The shares of the various factors in distribution, viz.: rent, interest, profits, and wages. May be taken by those who have not had Part I, course 52. *First semester; M., W., F., at 10.* (Omitted in 1910-11.) Mr. ELY.
55. American Public Finance. Part I. A critical and historical discussion of the finances of the federal government. *Second semester; Tu., Th., 2:30 to 4:00.* (Omitted in 1910-11.) Mr. ADAMS.
56. American Public Finance. Part II. An historical and critical account of the finances of the American commonwealths and local political units. *Second semester; Tu., Th., 2:30 to 4:00.* (Omitted in 1910-11.) Mr. ADAMS.
57. Principles of Taxation. A discussion of the history, principles, and problems of American taxation. Open only to students who have had previous training in Public Finance. *Second semester; Tu., Th., at 11.* Mr. ADAMS.
60. Seminary on Cities. Comparison of city with country in respect to sex, age, race, birth rate, longevity, marriage, divorce, criminality, vice, education, moral character, intellectual traits and political leanings. *First semester; W., 7:15 to 9:15.* (Omitted in 1910-11.) Mr. ROSS.
61. Seminary on the Psychology of the American People. Comparison with other peoples and of one American community or section with others in respect to pauperism, vice, criminality, migrancy, industriousness, forcefulness, sociability, emotionalism, stability, conservatism, etc. Analysis of causal factors. *First semester; W., 7:15 to 9:15.* Mr. ROSS.
62. Seminary on the Family. Study of the nature, extent and significance of the changes taking place in the American family under the stress of modern industrial, economic and cultural forces. *Second semester; W., 7:15 to 9:15.* Mr. ROSS.
64. Seminary in Taxation. *Throughout the year; W., 7:30 to 9:30.* The subject for the first semester will be municipal taxation and indebtedness. Mr. ADAMS.
65. Seminary in Labor and Industry. *Throughout the year. Tu., 4 to 6.* Mr. COMMONS.

66. Seminary in Economic Theory. *Throughout the year. Tu., 7:30 to 9:30.* Mr. ELY and Mr. COMMONS.
70. Economic Conference. The faculty and graduate students of the department meet once each month for conference and discussion of individual investigations; current economic literature, and other suitable topics.

SPECIAL LECTURES

In addition to the regular courses of class instruction and lectures described above, special lectures are given by scholars and public men from without the University.

POLITICAL SCIENCE

EMERITUS PROFESSOR PARKINSON; PROFESSORS HUBERICH, REINSCH, R. B. SCOTT; ASSISTANT PROFESSOR E. C. MEYER; DR. HOWE, DR. MCCARTHY; MR. BAILEY, MR. DUDGEON, MR. MACGREGOR, MR. LOWRIE, MR. WALLACE.

The courses primarily for undergraduates are open for election in the sophomore and junior years. As a rule, at least five semester hours of this work should be done before electing any of the advanced courses. The courses for undergraduates and graduates are open for election by juniors, seniors, and graduates. Sophomores of advanced standing may make arrangements to take some of these courses (11, 12, 15, 19, 20, and 22). The requirement for an undergraduate major in Political Science, in addition to the thesis, is twenty-one semester hours as a minimum.

In order to enable students, whose main work is in fields not allied to political science and who may lack the time to take the longer courses, to obtain a general view of the problems of politics, the following arrangements have been made; certain brief lecture courses are given (courses 4 and 19) which deal with subjects of interest to students in general, and in which only a limited amount of outside reading is required. Such students may also take the lectures in course 7 (American Government and Politics) and course 15 (Municipal Government), with-

out doing the outside reading and topic work required of regular students. They will be examined only on the lectures and will receive one credit for the work.

Primarily for Undergraduates

7. Government and Politics in the United States. A general study of the American system of government in its local, state, and federal organs and their relations to each other. (*Students may take lectures only, receiving one credit.*) *First semester. M., W., F., 9.* Mr. SCOTT.
27. European Governments. A study of the constitutional organization of the principal national governments of Europe; with considerable attention to political parties and current political questions. *First semester; M., W., F., 9.* Mr. BAILEY.
1. General Political Science. An introductory course in comparative and historical politics. *First semester; M., W., F., 8.* Mr. BAILEY.
2. Elementary Law. The nature and sources of law and the methods of its application, including a general view of the system of private law. *First semester; M., W., F., 11.* Mr. SCOTT.
6. Administrative Problems. A study of important administrative activities of the chief states of Europe and the United States. *Second semester; W., 5.* Mr. MEYER.
4. The Constitution of the United States. An outline course of lectures designed primarily for those who cannot give more time to this subject, but also for students preparing to teach civics in secondary schools. *Throughout the year; Th., 10.* Mr. SCOTT.

For Undergraduates and Graduates

8. Introduction to the History of Continental European Law.
9. Roman Law. *First semester:* The historical development of the Roman law and its reception and influence in other countries. *Second semester:* The Institutes of Roman law. The principles of the law of persons and property. *Tu., Th., 2.* Mr. HUBERICH.

10. History of English and American Law. A study of the development of legal institutions in connection with political and social history. *Second semester; M., W., 12.* Mr. REINSCH.
11. Jurisprudence. Analysis of the main concepts of the science of law, on the basis of the juristic classics. Open to advanced students who have had an elementary course in law. *Second semester; M., W., F., 11.* Mr. SCOTT.
12. American Constitutional Law. A study of federal and state constitutional principles and limitations. *Second semester; M., W., F., 9.* Mr. SCOTT.
15. Municipal Government in Europe and the United States: A comparative study of the organization of the principal modern municipal systems. *First semester; M., W., F., 10.* Mr. MEYER.
- 15a. Municipal Functions. A comparative study of the leading activities of European and American cities. (Partly illustrated.) *Tu., Th., 9.* Mr. MEYER.
16. State Administration. A study of the local and state administrative systems of the United States. *First semester; Tu., Th., 9.* Mr. MEYER.
17. Federal Administration. A study of the organization and functions of the different branches of our federal service. *Second semester; M., W., F., 9.* Mr. MEYER.
18. International Law. The work during the first semester will deal with diplomacy and the relations in time of peace; during the second semester arbitration and the law applied in time of war will be studied. *Throughout the year; M., W., F., 12.* Mr. REINSCH.
19. Contemporary International Politics. A course of weekly lectures on questions of international or foreign politics which are of special importance at the present time. May be elected in successive years, as subject matter is changed annually. *Throughout the year; W., 5.* Mr. REINSCH.
20. Oriental Politics and Civilization. The relations of the European powers and the United States to China and Japan, as well as the principal factors in the social and political life of Japan, China and India, will be studied. *Second semester; M., W., F., 10.* Mr. REINSCH.

21. Colonial Politics. A study of the principal systems of colonial government and administration in the dependencies. Given in 1909-10 and alternate years. *First semester; M., W., F., 10.* Mr. BAILEY.
22. Party Government. A study of the theory, development, organization and methods of action of political parties in the United States; the legal control of parties; and reform tendencies. *First semester; Tu., Th., 10.* Mr. SCOTT.
23. Consular Service. A study of the modern consular systems and methods, with special emphasis upon the American system. *First semester; Tu., Th., 10.* Mr. MEYER.
24. The Self-governing Colonies. A study of the political organization and activities of Canada, Australia, South Africa and New Zealand. (Given in 1910-11 and alternate years.) *First semester; M., W., F., 10.* Mr. BAILEY.
25. The Law of the Press. The law of copyright, literary property, libel, privileged publications and other topics relating to the publication of books and newspapers. *Second semester; Tu., Th., 12.* Mr. SCOTT.
26. The Theory and Practice of Legislation. A study of the methods of procedure of legislative bodies, and the preparation of the subject matter and form of bills. The legislature is in session from January to June, in the odd-numbered years. *Throughout the year; M., W., F., 12.* Mr. HOWE and Mr. DUDGEON.
28. Comparative Study of Constitution Making. Mr. DUDGEON.
29. Teachers' Course. Methods of teaching government in secondary schools. *Second semester; Th., 4-6.* Mr. BAILEY.
30. Administration of Punitive Justice. The methods of discovery, prosecution and punishment of crime; the functions of the police, prosecuting officials and jury; and defects in the administration of criminal laws. *Second semester; Tu., Th., 10.* Mr. SCOTT.
31. Latin-American Political Institutions. A comparative study of the constitutional and administrative systems of the Latin-American Republics. *First semester; M., W., F., 12.* Mr. REINSCH.

32. Current Political Topics. Study of current political problems with training in the discriminating use of sources and in effective literary presentation. A training course designed for students preparing for journalism. *Throughout the year; Tu., Th., 10.* Mr. WALLACE.
33. Practical Bill Drafting. A study of the technique of bill drafting with practice in drafting actual measures. Open to senior and graduate students. *Second semester; M., F., 7.* Mr. MCCARTHY and Mr. DUDGEON.
34. Rural Government. A study of the development and present condition of county, township and village government. *First semester; M., W., F., 11.* Mr. BAILEY.
35. Conservation of Natural Resources. A study of the problems of conservation and reclamation in the United States. *Second semester; Tu., Th., 8.* Mr. BAILEY.
36. American Diplomacy. A study of the principal contemporary problems of the United States in foreign affairs; the participation of the United States in the development of International Law; the organization of the diplomatic service; the product of diplomatic action. Given in 1910-11 and alternate years. *First semester; M., W., F., 11.* Mr. REINSCH.
37. Contemporary International Politics and Diplomatic Problems. A study of the present grouping of the powers and their mutual relations. (Given in 1911-12 and alternate years.) *First semester; M., W., F., 11.* Mr. REINSCH.
42. Public Utilities. A comparison of public regulation and public and private ownership of municipal utilities in American states and foreign countries, including constitutional and judicial limitations, delegation of legislative power to commissions, physical valuation, reasonable rates and service, organization of public employees, cost, efficiency, social and political results. *First semester; lectures, M., W., F., 8.* Mr. COMMONS and Mr. DUDGEON.
- 42a. Public Utilities, Research. *Second semester; hours to be arranged.* Mr. B. H. MEYER.
43. Thesis Seminary. *Tu., 5 to 6.* Mr. MEYER.

45. History of Political Thought. The development of political philosophy from the Greeks to the present time, and its connection with political history. *Second semester; M., W., F., 9.* Mr. BAILEY.

Primarily for Graduates

52. Seminary in Comparative Legislation. This course is open to undergraduates who have had course 26. *Throughout the year; F., 4 to 6.* Mr. MCCARTHY and Mr. LOWRIE.
56. Philosophy of the State. A critical study of contemporary political thought and terminology. *First semester; Tu., 4 to 6.* Mr. REINSCH.
57. Juristic Classics. The Institutes of Gaius, first two books; reading and commentary. *Second semester; F., 12.* Mr. HUBERICH.
59. Seminary in Administration. *Throughout the year; Tu., 7:30 to 9.* Mr. MEYER and Mr. MACGREGOR.
60. Seminary in International Law and Politics. A study of some selected topics in international law and diplomacy. *Throughout the year; W., 7:30 to 9:30.* Mr. REINSCH.
61. Seminary in American Constitutional Law. Some important constitutional problem will be studied. *First semester; Th., 4 to 6.* Mr. SCOTT.

For groups of studies in the departments of History, Political Economy, and Political Science, arranged as special training courses in practical sociology, statistics, public service, and journalism, see the special announcement of the above departments, which may be had upon application to the Registrar.

PUBLIC SPEAKING

ASSOCIATE PROFESSOR LYMAN; MR. JOHNSTONE, MR. GESELL.

The courses in public speaking are designed to give preparation in two general lines of work:—in elocution, interpretative reading, and dramatic presentation; and in the composition and delivery of public addresses. The courses are so arranged as to make possible systematic and progressive study in either branch

of public speaking during the sophomore, junior, and senior years. In composition, the elementary course, 5, should precede the specialized courses, 3 and 11b. Course 12 in elocution forms a desirable part of the preparation for all advanced work in public speaking.

The University of Wisconsin participates in several inter-collegiate contests in oratory and debate. For these contests, the courses in public speaking are designed to give preparation. Men desiring to make inter-collegiate debating teams are advised to consider courses 5, 11a, 11b, 13 and 8. Men desiring to enter oratorical contests should consider courses 5, 3, 13. In addition, the University, through its dramatic societies, presents several plays. The department also conducts public recitals. Students who are interested in dramatic presentation, or who wish to become public readers or teachers of English literature should consider courses 12, 14, 16, 17 and 18.

Two of the courses in public speaking, 5 and 11, may be counted toward the English major. Not more than ten hours of public speaking in addition to course 12 can be counted toward the bachelor's degree.

COMPOSITION COURSES

Primarily for Undergraduates

- 5a. The Composition of Public Addresses. This course deals with the structure and substance of the most important forms of public address. During the first semester the argument is studied. Analysis, brief-drawing, evidence, refutation and persuasion. Lectures, analysis of masterpieces, practice in the composition of the various forms, consultations. *First semester. Two sections; M., W., 10 and 12. Third hour on Friday to be arranged.* Mr. LYMAN, Mr. GESELL.
- 5b. The Composition of Public Addresses. Continuation of 5a. The forms covered are the eulogy, the commemorative address, the after-dinner speech, the legislative address and other forms. This course is fundamental in public speaking and is recommended to sophomores. *Second semester; Two sections; M., W., 10 and 12. Third hour on Friday to be arranged.* Mr. LYMAN and Mr. GESELL.

- 11a. Argumentation. This course, followed by 11b, is intended as special preparation for argumentation and debate. Training in analysis, brief-drawing, evidence, refutation; study of the principles of conviction, persuasion and rhetorical presentation. *Second semester; Tu., Th., 10.* Mr. LYMAN.

COURSES INCLUDING DELIVERY

Primarily for Undergraduates

1. Elementary Public Speaking. For freshmen only. The purpose of this course is to promote effective delivery by starting correct habits of breathing, vocalization, ease of presence, and of movement. The course is limited in number. The consent of instructors is required. *No university credit given. Second semester; twice a week. Hours to be arranged.* Mr. LYMAN and Mr. GESELL.
- 3a. Oratorical Delivery. Study of the principles of oral expression for the cultivation of a natural and direct style. Daily practice in speaking. Small sections for voice-training. *First semester; Tu., Th., 11.* Mr. LYMAN.
- 3b. Oratorical Delivery. Continuation of course 3a. *Second semester; Tu., Th., 11.* Mr. LYMAN.
15. Practical Public Speaking. Daily practice in the presentation of the various forms of public address, voice training, study of gesture, bearing, and the elements of ease, grace, and force in presentation. Designed for upper classmen who desire some general training in public speaking. *First semester; Tu., Th., at 10.* Mr. LYMAN.
- 11b. Debating. Practical work in brief-drawing, the collection and handling of evidence, and debating. This course is a critical and practical study of debating. The class is limited in number. The course can be taken only with the consent of the instructor, and is open only to those who have had course 11a or 5. *First semester; hours to be arranged; two credits.* Mr. LYMAN and Mr. GESELL.
8. Ex-tempore Speaking. Practice in the rapid preparation of speeches on the topics of the day and in the impromptu delivery of the same. Lectures on the short speech and ex-tempore speaking. *Second semester; Tu., Th., 12.* Mr. LYMAN.

INTERPRETATION

Primarily for Undergraduates

- 12a. Principles and Practice. Vocal culture, exercises in breathing, position, and gesture. Delivery of short selections. Pantomime, ex-tempore speaking. This course will be divided into sections of twelve to fifteen. *Throughout the year; M., W., F., 9 and 10.* Mr. JOHNSTONE.
- 12b. Beginning section in the work of 12a. *Second semester; M., W., F., 11.* Mr. JOHNSTONE.
- 16a. Interpretative Reading. To be given in alternate years with course 17. *Katherine and Petruchio, Merchant of Venice*, one modern play, Kipling's verse. *First semester; Tu., Th., 11.* (Omitted 1910-1911.) Mr. JOHNSTONE.
- 16b. Interpretative Reading. *Twelfth Night, Macbeth*, Browning's verse, and one modern play. *Second semester; Tu., Th., 11.* (Omitted 1910-11.) Mr. JOHNSTONE.
- 17a. Interpretative Reading. *Much Ado about Nothing, King Lear, Faust*, and *Pillars of Society*. *First semester; Tu., Th., 11.* (Given 1910-11.) Mr. JOHNSTONE.
- 17b. Interpretative Reading. *As You Like It, Hamlet, Blot on the Scutcheon*, Bible Dramas. *Second semester; Tu., Th., 11.* (Given 1910-11.) Mr. JOHNSTONE.
18. Dramatic Seminary. Intended for those who wish to teach English and elocution, or who aspire to platform work. Open only to seniors or graduates who have taken the elementary courses in the department. Lectures on platform art. Principles of interpretative reading demonstrated in practice. Criteria for teaching elocution, rhetorical, contests and plays. Repertoire. *Throughout the year; W., 4 to 6.* Mr. JOHNSTONE.

ROMANCE LANGUAGES

PROFESSORS OWEN, SMITH; ASSOCIATE PROFESSOR GIESE; ASSISTANT PROFESSORS GAY, REED, SCHLATTER; MR. CATTELL, DR. CERF, DR. COOL, MR. HERRICK, MR. MICHELL, DR. ZDANOWICZ; MR. DONDO, MR. GALLAND, MR. INGLIS, MR. MILLER; MR. GREENE.

French courses numbered below 10 are for students who have had no French, or have had less than two years in the high school. Students with only one year of high school French or its equivalent, may be allowed to enter course 4.

Courses beginning with 10 and numbered below 20 are for students who have had one year of college French, or two years of high school French. Students who have had more than two years of high school French should consult with the department before entering any French course.

Courses beginning with 20 and numbered below 40 are for students who have had at least two years of college French, while courses numbered 40 and above are primarily for graduates.

Courses in all the Romance languages marked C and E are intended for Commerce and Engineering students. Similar courses are nearly always given for the students of the College of Letters and Science, who will not be allowed to take Commerce and Engineering courses except by special permission of the chairman of the department.

Students will be allowed to major in either French, Spanish or Italian or by combining these. However, in any case the first and second year courses of more than one of these three languages will not count toward the hours necessary to make up the major, nor will they be included in the maximum forty hours that can be taken in one subject.

For those who major in French a minimum requirement will be twenty hours of work beyond first year French. Those desiring to major in Spanish or Italian or in Romance languages should consult with the department for complete details.

FRENCH

For Undergraduates

1. Elementary French. Grammar, reading, composition, and oral exercises. Fraser and Squair, *French Grammar*. Reading of simple modern French prose. Considerable attention will be paid to pronunciation. *Four credits. Fourteen sections.* Mr. CATTELL, Mr. CERF, Mr. COOL, Mr. GIESE, Mr. HERRICK, Mr. MICHELL, Mr. REED, Mr. SCHLATTER, Mr. ZDANOWICZ; Mr. DONDO, Mr. GALLAND, Mr. GREENE.
2. Elementary French. Special course for students who have had at least four years of Latin or German. *Tu., W., Th., F., 8.* Miss GAY.
3. Elementary French. Begins the second semester and covers the work done in the first semester of course 1. Students taking this course may continue their work in the summer session or the following year with course 4. *M., W., F., S., 8.* Mr. HERRICK; and *Tu., W., Th., F., 12.* Mr. SCHLATTER.
4. Advanced Elementary French. The course continues French 3, covering, in the first semester, the work of the second half of French 1, and, in the second semester, somewhat more than the first half of second year French. Open also to students who have commenced French in the summer session or who enter with one year of high school French. *M., W., F., S., 8.* Mr. HERRICK; *Tu., W., Th., F., 12.* Mr. DONDO.
- 5E. Elementary French for Engineers. In the first semester the work will be for the most part the same as that in course 1, except that more attention will be paid to reading. During the second semester Herdler's *Scientific Reader* or other work of similar character will be introduced. *Four credits. Three sections.* Mr. GALLAND, Mr. INGLIS.
- 6C. Elementary French for Students in Commerce. Reading, composition and oral exercises. Fraser and Squair, *French Grammar*. Reading of easy prose. *Tu., W., Th., F., 9.* Mr. CATTELL.

10. Second Year French. Reading and grammar. The following texts are intended to represent the character of the reading, rather than the actual works that may be used in each section: Mérimée, *Colomba*; Daudet, *Contes*; Lamartine, *Jeanne d'Arc*; Renan, *Ma Soeur Henriette*; Augier and Sandeau, *Le Gendre de M. Poirier*; Molière, *L'Avare*.
 Section 1, M., W., F., 8. Mr. GIESE. Section 2, M., W., F., 9. Mr. SMITH. Section 3, M., W., F., 9. Mr. ZDANOWICZ. Section 4, Tu., Th., S., 9. Mr. CERF. Section 5, M., W., F., 10. Mr. CATTELL. Section 6, M., W., F., 10. Miss GAY. Section 7, M., W., F., 12. Mr. MICHELL.
11. Second-year French. Reading and grammar. *Le Roman d'un Jeune Homme Pauvre*, *La Petite Fadette* and two plays of Molière. M., W., F., 11. Mr. OWEN.
12. Lectures on thought and language. *First semester*; M., 11. At present embodied in course 11. Mr. OWEN.
13. Masterpieces of Romance literatures in English translations. Lectures and collateral reading from the works of Dante, Petrarch, Boccaccio, Ariosto, Tasso, Cervantes, Rabelais, Montaigne, Corneille, Molière, Racine and other writers. Tu., Th., 11. Mr. CERF.
14. French Composition. Intended to supplement the second year courses given above, and, except by special permission of the instructor, can be taken only by students of some other French course. Tu., 10. Mr. ZDANOWICZ, Th., 12. Mr. HERRICK.
15. French Conversation. The work is confined mainly to the class room. Except by special permission, it can be taken only in connection with some other French course. *One credit*. Tu., Th., 8, 9, 10 and 11. Mr. HERRICK, Mr. DONDO.
- 17C. Second-year French for students in Commerce. A practical course in conversation, composition, and reading. Tu., Th., 11. Mr. CATTELL.
18. Rapid Sight-reading. The work will be largely confined to the class room. Except by special permission it can be taken only in connection with some other French course. *One credit*. Tu., Th., 9. Mr. MICHELL.

19. Romance Countries. A lecture course in English on the historic monuments and physical features of France, Italy, and Spain. Lectures and assigned reading. Knowledge of French not required. *First semester. One credit. W., 2. Mr. HERRICK.*

For Undergraduates and Graduates

20. Advanced Reading. Continuation of course 11. *Cinq-Mars, Ursule Mirouet. M., W., 12. Mr. OWEN.*
21. French Literature. From the Renaissance to the Revolution. Lectures with collateral reading. *Tu., Th., 11. Mr. GIESE.*
22. French Literature. The classic drama. A detailed study of the literary and social influences that produced the classic drama. The first semester will be devoted mainly to Corneille and Racine, the second to Molière. *Tu., Th., 9. (Omitted in 1910-11.) Mr. ZDANOWICZ.*
23. French Literature. The modern drama, beginning with the Romantic movement. Lectures and assigned reading. Characteristic class reading: Hugo, *Hernani*; Scribe, *Le Verre d'Eau*; Pailleron, *Le Monde où l'on s'ennuie*; Rostand, *Cyrano de Bergerac. First semester. M., W., F., 10. Mr. SMITH.*
24. Advanced Composition and Conversation. Practice in writing and speaking based upon nineteenth century authors. *Tu., Th., 10. Miss GAY.*
25. French Literature. Writers of the seventeenth century. Lectures on the authors studied and their work in relation to the intellectual and literary evolution of the century. *First semester; M., W., F., 11. Mr. MICHELL.*
26. French Literature. The French novel. Lectures on the development of the novel in Romance countries. Reading of representative French novels of the seventeenth, eighteenth, and nineteenth centuries. *First semester; M., W., F., 11. (Omitted in 1910-11.) Mr. CERF.*
27. Advanced Conversation. Open to students who have had two or more years of French. Of suitable grade to follow French 15. Can be taken only in connection with some other French course unless by consent of the instructor. *Tu., Th., 9. Mr. DONDO.*

28. French Lyric Poetry and Versification. A study of lyric poetry from Villon to recent times. Lectures on French verse-structure from its origin to the present. *Second semester; M., W., F., 10.* Mr. SMITH.
- 29C. Third-year French. For students in Commerce. *Two credits.* Mr. CATTELL.
- 30C. Fourth-year French. For students in Commerce. Conversation, reading, and commercial correspondence. A continuation of course 29C. *Two credits.* (Omitted in 1910-11.) Mr. CATTELL.
31. General Survey of French Literature. An elementary outline course recommended as an introduction to more extended study of special periods. Only the main currents of the literature and writers of prime importance will be dealt with. Class reading, lectures, and occasional reports on authors read. *M., W., F., 8.* Mr. REED.
32. French Literature. A study of literary movements in the eighteenth century. Lectures and reading from representative authors. *Second semester. M., W., F., 11.* (Omitted in 1910-11.) Mr. MICHELL.
33. Advanced Reading. Of suitable grade to follow course 20. Hugo, *Les Travailleurs de la Mer*. *M., W., 3.* Mr. OWEN.
34. The Nineteenth Century. In the first semester especial emphasis will be laid on Victor Hugo and the Romantic School. Lectures with collateral reading. *Tu., Th., 10.* (Omitted 1910-11.) Mr. GIESE.
35. The Teaching of French. A study of the aims and methods in teaching French. Lectures and reports (one hour). A review of the essentials of grammar taught in first year French (one hour). *First semester; one or two credits.* Mr. SMITH and Miss GAY.
36. The Teaching of French. A review of the work in second year teaching, dealing particularly with the following points: pronunciation, reading, and composition (one hour). Practice teaching, visiting classes, assigned work and reports (one hour). *Second semester. One or two credits.* Mr. SMITH and Miss GAY.
37. Molière. All of Molière's plays will be studied. Several representative comedies will be read in class. Lectures and assigned reading on Molière and the theater of the

- time with some consideration of his influence on later French comedy. *First semester; M., W., F., 10.* Mr. ZDANOWICZ.
38. French Pronunciation. The elements of phonetics in their application to the pronunciation of French. Reading from Passy-Rambeau, *Chrestomathie Phonétique*. *First semester. Tu., 11.* Mr. CERF.
39. Victor Hugo and the Nineteenth Century. Class reading, lectures: conducted in French. *Tu., Th., 10.* Mr. DONDO.

For Graduates

40. Old French. An introductory course. Phonology and grammar. Lectures and reading. Primarily for graduates, but may be taken by undergraduates of suitable preparation. (Omitted in 1910-11.) Mr. SCHLATTER.
41. Old French. An introduction to the Old French language and to the general laws of phonetic development from Latin to French. Nyrops' *Grammaire Historique de la Langue Française; La Chanson de Roland; Aucassin et Nicolette*. Undergraduates of suitable preparation will be admitted to this course. *Two hours a week.* Miss GAY.
42. Old French Literature. Old French epic poetry. The history of the *Chansons de Geste* will be traced and several representative poems read during the year. The theories of G. Paris, Rajna and Bédier on the origin of the French epic will be treated at some length. Students in this course must be able to read Old French. *W., 4 to 6.* (Omitted in 1910-1911.) Mr. SMITH.
43. Seminary in Old French. A study of the group of Old French epic poems known as the Cycle of the Crusades. In the second part of the course a short introduction to Romance paleography will be given and some time devoted to the establishment, from manuscript copies, of a critical edition of Godefroi de Bouillon. For graduates only. Mr. SMITH.
44. Old Provençal. Language and literature, especially the poetry of the troubadours. Texts: Grandgent, *Phonology and Morphology of Old Provençal*; Appel, *Provenzalische Chrestomathie*; Restori, *Letteratura Provenzale*. Open to undergraduates of suitable preparation. Mr. REED.

45. Principles of Language. Examination of linguistic thought, its special nature, and the less obvious verbal means of indicating both the elements of thought and their mode of combination. (See also course 12.) MR. OWEN.
46. Victor Hugo. A detailed study of Hugo's later work (1852-1885). Lectures and reports with extensive reading. Conducted in French. May be taken by undergraduates of sufficient preparation. *Two hours a week.* (Omitted in 1910-1911.) MR. GIESE.
47. Literature of the Middle French Period. General survey of the 14th, 15th, and 16th centuries; particular attention will be devoted to Froissart, Commynes, Villon, Rabelais, and Montaigne. *Two hours a week.* (Omitted in 1910-1911.) MISS GAY.
48. Medieval Literature. Its beginnings in Europe with special reference to the influence of French and Provençal literature on the other countries of Europe. Lectures and assigned reading. (Omitted 1910-1911.) MR. REED.
49. Chrestien de Troyes. Reading and study of his works. Open to students who have had work in Old French. *First semester.* (Omitted 1910-11.) MISS GAY.
50. The Arthurian Epic. Lectures on the origin and influence of the *Matière de Bretagne* with class and collateral reading. Students must be able to read old French. *Second semester.* (Omitted in 1910-1911.) MR. SMITH.
51. French Classical Poetry from the Renaissance to the Age of Louis XIV. A detailed study of the origin and growth of the classic ideal in French poetry. Lectures and reports with extensive reading. Conducted mainly in French. (Omitted 1910-11.) MR. GIESE.
52. Medieval French Drama. The liturgical drama, miracle and mystery plays. The development of the French drama from the Latin liturgical drama and its relation to the early religious plays of other countries. The development of the theatre and the causes of its decline in the fifteenth century. *Second semester.* MR. SMITH.

ITALIAN

For Undergraduates and Graduates

1. Elementary Italian. Grammar, pronunciation and easy composition. Reading from modern writers. M., W., F., 11. Mr. SCHLATTER.
2. Italian Literature. A continuation of Italian 1, combined with a rapid survey of the main works in Italian literature. Alternates with Italian 60. Tu., Th., 11. Mr. SCHLATTER.

For Graduates

60. Dante. An introduction to the life and times of Dante, with special study of the Divine Comedy. Tu., Th., 11. (Omitted in 1910-1911.) Mr. SCHLATTER.

SPANISH AND PORTUGUESE

For Undergraduates

1. Elementary Spanish. Grammar and reading. Hills and Ford, *Spanish Grammar*; Alarcón, *Novelas Cortas*, *El Capitán Veneno*; Valdés, *Marta y María*. For students of the College of Letters and Science. M., W., F., 9. Mr. MICHELL. M., W., F., 12. Mr. COOL.
- 2EC. Elementary Spanish for students in Commerce and Engineering. Grammar and easy prose. Students in the College of Letters and Science must take course 1. *Four times a week at 8 and 9*. Mr. COOL, Mr. MILLER.
3. Nineteenth Century Spanish. The modern novel, drama, and poetry will be studied. Open to students who have had elementary Spanish. Tu., Th., 10. Mr. COOL.
4. Spanish Literature. Reading of selections from Cervantes (*Don Quixote*), Calderón (*El Mágico Prodigioso*), and other classics. Open to students who have had elementary Spanish. Tu., Th., 8. Mr. REED.
- 6C. Second year in Commerce. Conversation, composition, and reading. In this course special attention is paid to the vocabulary of every-day life. Students in the College of Letters and Science who have had one year of Spanish must take course 3 or 4 unless allowed by special permission to enter this course. Tu., Th., 11. Mr. COOL.

- 7C. Third year in Commerce. Conversation, commercial correspondence, and reading. In this course special attention is paid to the vocabulary of commerce. *Tu., Th., 8.* Mr. COOL.
- 8C. Fourth year in Commerce. Conversation, commercial correspondence, and reading. Continuation of course 7C. *Two credits.* Mr. COOL.
9. Composition and Conversation. Supplementary to 6C, 7C and 8C and can be taken only in connection with some other Spanish course, unless by consent of the instructor. *One credit. Tu., 12.* Mr. COOL.
70. Old Spanish. The Poem of the Cid. Lectures and collateral reading. Old Spanish grammar. Texts: *Gramática Histórica Española*, Pidal; *Poema del Cid*, Pidal; *Poetas Castellanos Anteriores al Siglo XV* (Biblioteca de Autores Españoles). Open to undergraduates of sufficient preparation. *Two credits.* (Omitted 1910-1911.) Mr. REED.
71. Portuguese. Language and Literature. Class reading (*Os Lusíadas*), with lectures on the development of the language and the history of the literature. *Two credits.* Mr. REED.

SCANDINAVIAN LANGUAGES

PROFESSOR OLSON.

This department offers instruction in all of the Scandinavian languages (Norwegian, Danish, Swedish, and Old Norse.) From one year's instruction in Modern Norse the student is expected to be able to read both Norwegian and Danish authors. The principal courses are devoted mainly to Norwegian authors, but additional instruction in Danish and Swedish literature is offered to students desiring to pursue these branches beyond the limits of the prescribed courses.

Courses 2a and 2b, taken together, or courses 3 and 4, may be taken as part of the required language work. (See Index under Required Studies.)

Primarily for Undergraduates

1. Modern Norse. Olson's *Norwegian Grammar and Reader*, together with easy selections in prose and poetry. For beginners. *Throughout the year; three credits.*
- 2a. Modern Norse. Selections from the *Reader*, Björnson's *Synnöve Solbakken* (Flom's edition), and his shorter peasant stories. *Throughout the year; three credits.*
- 2b. Written and Oral Translation into Norse. The reading of prose selections as a basis for work in composition and conversation. *Throughout the year; one credit.*
3. Kielland's *Skipper Worse* and Gundersen's *Norske Digte*. Two dramas by Holberg and three by Oehlenschlaeger are assigned for outside reading. *Throughout the year; two credits.*
4. Ibsen's *Brand* and *Peer Gynt*. As these dramas are of the greatest importance in Scandinavian literature, they are read critically and studied from both a linguistic and literary point of view. Much stress is placed on an adequate ethical interpretation. *Throughout the year; two credits.*
5. History of Dano-Norwegian Literature. Hofgaard's *Norsk Litteraturhistorie* and Prestgard's *Norske Kvad*, with lectures, and papers presented by students, on the authors under discussion. *Throughout the year; two credits.*
6. Swedish Literature. Tegner's *Frithiofs Saga*. Runeberg's *Fänrik Stals Sägner*, Vinsnes and Aanrud's *Svenske Digtere*, and Warburg's *Svensk Litteraturhistoria*. Selma Lagerlöf's *Gösta Berlings Saga* and *Jerusalem* are assigned for outside reading. *Throughout the year; two credits.*
7. Lectures on Norse Mythology and the Volsunga Saga. These subjects are also considered with reference to their relation to the *Nibelungenlied* and Wagner's *Ring des Nibelungen*. *First semester; Th., 2.*
- 7a. Lectures on early Scandinavian literature and antiquities, with illustrative readings in translation. Special attention is given to the Saga literature. *First semester; Tu., 2.*
- 7b. Lectures on modern Scandinavian authors and literary epochs, with illustrative readings in translation. A study of Ibsen's life and works is the main feature of the course. *Second semester; Tu., 2.*

- 7c. An intensive study of selected dramas of Ibsen in English.
Second semester; Th., 2.

A knowledge of the Scandinavian languages is not required for courses 7, 7a, 7b, and 7c.

For Undergraduates and Graduates

8. Old Norse. Vigfusson and Powell's *Icelandic Prose Reader* or Kahle's *Altisländisches Elementarbuch* and Nygaard's *Udvalg af den norrøne Literatur*. Throughout the year; two credits.
- 2c. Modern Norse. Olson's *Grammar and Reader*, Björnson's *Synnöve Solbakken* and the shorter peasant stories, Ibsen's *Samfundets Stütter*, *Et Dukkehjem*, *Kongsemnerne*, *Brand*, and *Peer Gynt*. A rapid reading course for graduates who have a good knowledge of other modern languages. Throughout the year; three credits.
9. Modern Norwegian Literature. The critical reading of representative dramas and novels. The principal authors studied are Ibsen, Björnson, Lie, and Kielland. Throughout the year; two credits.
10. Studies in Norwegian Poetry. Selections from Wergeland, Welhaven, Munch, Moe, Björnson, and Ibsen, to illustrate the different epochs in the development of modern Norwegian literature. First semester; one credit.
11. Norwegian Dialect Writers. The principal authors considered are Aasen, Vinje, Garborg, and Sivle. Some attention is also given to the language reform movement. Second semester; one credit.
12. Scandinavian Literature. A general survey, with critical study of special periods. Throughout the year; two credits.

ZOOLOGY

PROFESSOR BIRGE; ASSOCIATE PROFESSOR MARSHALL; ASSISTANT PROFESSORS HOLMES, WAGNER; MR. JUDAY, MR. SMITH, MR. JACKSON, MR. GEE.

For Undergraduates and Graduates

- 2a. Invertebrate Zoology. A discussion of the structure, development, classification, instincts, and life histories of invertebrate animals. This is a year's course, but it is so divided that the two parts come in the first semester of alternate years. Either half of the course, however, may be taken independently of the other. The course which is devoted to the lower invertebrates, the Protozoa, Coelenterata, Vermes, Mollusca, and some smaller groups is given in 1910-1911. *First semester. Lectures, M., W., 10. Three laboratory periods.* Mr. HOLMES.
- 2b. A continuation of course 2a devoted to the higher invertebrates, the Crustacea, Arachnida, Myriapoda, Insects, Echinodermata, and Tunicata. *First semester. Lectures, M., W., 10. Three laboratory periods.* (Given in 1909-1910.) Mr. HOLMES.
4. Vertebrate Zoology. A study of the structure, physiology, habits, classification, and distribution of vertebrates. *Second semester. Lectures, Tu., Th., 8. Laboratory and field work three periods a week. Five credits.* Mr. WAGNER.
5. Organic Evolution. A series of lectures on the evidences for and general bearing of the theory of organic evolution. Open to all students beyond the freshman year. *First semester; Tu., 4.* Mr. HOLMES.
6. Variation and Heredity. A discussion of the main facts and theories of variation and heredity, and their relation to other problems, biological and sociological. *First semester; two credits.* Mr. WAGNER.
7. Evolution Problems. A critical discussion of the theory of organic evolution, and the general development of evolutionary speculation since Darwin. *Second semester; Tu., Th., 2.* Mr. HOLMES.

9. Entomology. The anatomy, ambryology, classification, and life histories of insects. *Second semester. Lectures, Tu., Th., 10. Three laboratory periods.* Mr. MARSHALL.
11. Elementary Entomology. On the structure, life history, and habits of insects and their relation to man and other animals. Open to all students. *Lectures. First semester; M., W., 11.*
12. Entomology. Life-history and structure of economic insects, giving the life-history, structure and classification of those insects which are of economic importance. *First semester; three credits.* Mr. MARSHALL.
13. Forest Entomology. The principal insects injurious to forest trees. *Two lectures a week. Time to be arranged. Second semester.* Mr. MARSHALL.
17. Bionomics. The relation of animals to their environment. This course should be preceded by courses 2 and 4. *Two lectures a week at hours to be arranged. Laboratory and field work once a week. First semester; three credits.* Mr. WAGNER.
18. Morphogenesis. A discussion of the results of experimental work upon the development and regeneration of organisms, and the general theories of development and regeneration. Open to advanced students of biology. *One lecture a week during the first semester.* Mr. HOLMES.
20. The Teaching of Zoology. A consideration of the aims, methods, and subject matter of zoological instruction in the schools. *One lecture or conference a week during the first semester.* Mr. HOLMES.
21. Ornithology. A study of the main facts relating to birds. *One lecture and one laboratory or field period a week. Hours to be arranged. Two credits.* Mr. WAGNER.
23. Entomology. Advanced work for students who have finished course 9 and desire to continue some special line of work or investigation. *Throughout the year.* Mr. MARSHALL.
- 24a. Limnology. A course of lectures on the geology, physics, chemistry, and biology of lakes. The various methods used in making limnological investigations will be presented. Especial attention will be given to the results that have been obtained in studies on Wisconsin lakes. *Two lectures per week at hours to be arranged. First semester. Two credits.* Mr. JUDAY.

- 24b. A continuation of course 24a. A study of plankton organisms, especially their identification, variation, distribution, and economic importance. The field work will consist of practice in making physical, chemical, and biological observations on lakes. *Lectures, laboratory, and field work. Second semester. Two credits.* Mr. JUDAY.
25. Research work. Special subjects for senior theses or for more advanced work will be assigned. Mr. JUDAY.
25. General Embryology. An introduction to the embryology of animals, both invertebrates and vertebrates. *First semester, two lectures and two laboratory periods a week.* Mr. SMITH.
28. Research Work. Special work for advanced students under different members of the staff. Special problems will be assigned, and students prepared for independent investigation will be given all the opportunities available for carrying on their work.

THE COURSE IN CHEMISTRY

LOUIS KAHLENBERG, Director, Professor of Chemistry.

THE PURPOSE OF THE COURSE

The primary purpose of this course is to offer facilities for the training of those who desire to become chemists. The demand for competent chemists has been very greatly increased in recent years. Not only has there been a greater call for able teachers of chemistry for high schools, colleges and universities, but an unusual demand has arisen for chemists of ability for agricultural experiment stations, hygienic laboratories, health and sanitary departments of municipalities, food testing laboratories, and industries engaged in the preparation of foods and other articles of consumption, textile and other fabrics, metallurgical products, and building materials. The cause for this demand is readily discerned. The growing realization that the best way to combat disease is to live under hygienic conditions and use wholesome food, proper clothing and shelter has made physiological chemists, food chemists, and sanitary chemists indispensable. The fact that careful study of the soil in its relation to the crops it is to pro-

duce has greatly increased both the quantity and quality of the yield of the land, and that a proper study of the breeding and feeding of animals raised on the farm has added very materially to the wealth and well-being of the nation, has made soil and agricultural chemists necessary. And again, since the exploitation of the more readily accessible resources of our country, such as its wealth in timber and minerals, for example, is fairly well accomplished, attention is naturally being directed more and more toward manufacturing articles from materials whose value is not obvious at sight, materials that have indeed often been discarded as worthless. It is in this work that the services of the analytical and industrial chemist are an absolute necessity. Naturally these demands for chemists have also resulted in an increased call for teachers of chemistry. Nor is the need of chemists of temporary character, for obviously activity in the various lines mentioned will grow of necessity and increase the demand for men and women skilled in chemistry. Indeed, in many of our industries it is already realized that it is necessary to have the service of a chemist continually in order to properly inspect the raw materials bought, to control and improve the process of manufacture so as to avoid waste of power and material, and to test the grade of the finished article.

It is not the purpose of this course to prepare chemists for each individual industry; for that would be well-nigh impossible, since it requires special practical experience to become proficient in any particular line of work. The aim is rather to give the student a training in the fundamental principles of chemistry and the cognate sciences, which, of course, also necessitates a proper grounding in mathematics, French and German. With this preparation a chemist will readily be able to adapt himself to any special industry with which he may later on be connected.

Special attention is called to the fact that chemistry offers opportunities for women as well as for men. Not only in teaching chemistry in high schools and colleges, but also in lines like analytical, physiological, sanitary and food chemistry, there is a growing field of work for women.

The University has thus far been quite unable to supply the demand for trained chemists which has been made upon it.

REQUIREMENTS FOR ADMISSION

Students will be admitted to this course on compliance with the conditions imposed for entrance to the College of Letters and Science. See Index under Admission.

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the course desired.

Students who have satisfied all the requirements for entrance, but do not wish to be candidates for a degree, will be admitted to any of the studies of this course for which they are properly prepared.

PLAN OF THE COURSE OF STUDY

Six courses of study have been outlined, namely, a general course, a course for industrial chemist, a course for agricultural chemist, a course for soil chemist, a course for physiological chemist, and a course for food chemist. The latter course is also well adapted for those fitting themselves for sanitary work in hygienic laboratories. The general course is intended for those desiring to become analytical chemists, and those that prefer a course relatively free from biological studies and work which is strictly applied in character. The first two courses are almost free from biological work, containing only a short course in bacteriology, which it is extremely desirable that every chemist should have. The other four courses are primarily distinguished from the first two in that they contain a considerable amount of biology and consequently present less opportunity for further work in other lines.

The work for the first year is the same for all of the courses. It is therefore detailed in connection with the general course only. It will be observed that differentiation in the various lines begins in the second year of the general course, the main difference being, as already stated, that biology is introduced in the last four courses.

In all the courses, general inorganic, analytical, organic and physical chemistry are required. Physics, mathematics consisting of trigonometry and analytical geometry, and a course in mechanical drawing are also required of all. The English is the regular course required of all freshmen in the College of Letters and

Science. Both German and French are required; these languages must be pursued in not less than one-year courses. A student coming prepared in but one of these languages would naturally continue work in that language during the freshman year. The equivalent of at least course 2S in German and course 1 in French is required for graduation. The special courses required in connection with each of the six courses are selected because they are calculated to fit the student for the definite end in view. Each course contains a certain number of hours for free electives, and while freedom of election is not restricted, the student is strongly urged to choose his electives from subjects outside of the natural sciences.

In each of the courses, 144 unit-hours are required for graduation. As the work outlined is necessarily difficult in character, students would often find it advantageous to absolve a part of the required studies during one or more summer sessions.

COURSES OF STUDY

General Course

First year: General Chemistry, 5; Mathematics, 3; German or French, 4; English, 3; Mechanical Drawing, 3.

Second year: *First semester.* Quantitative Analysis, 6; German or French, 4; Physics, 5; Calculus or Mineralogy, 3. *Second semester.* Calculus or Bacteriology, 3.

Third year: Organic Chemistry, 5; Physical Chemistry, 5; German or French, 4; Electives, 4.

Those that took Calculus in the second year must take Mineralogy 3 in the first semester and Bacteriology 3 in the second semester, which leaves for them but one hour as elective for each semester.

Fourth year: *First semester.* Chemistry Thesis, 2; Water and Gas Analysis, 2; Proximate Organic Analysis, 3; History of Chemistry, 2; Electives, 3. *Second semester.* Chemistry Thesis, 2; Chemistry (elective), 5; Fire Assay, 2; Electives, 9.

Course for Industrial Chemist

The first and second years are the same as in the general course.

Third year: Organic Chemistry, 5; Physical Chemistry, 5; German or French, 4; Technical Fuel and Gas Analysis, 2; Electives, 2.

Fourth year: *First semester.* Chemistry Thesis, 2; Water Analysis, 1; Proximate Organic Analysis, 3; Industrial Chemistry, 3; History of Chemistry, 2; Electives, 7. *Second semester.* Chemistry Thesis, 2; Chemical Machinery, 2; Fire Assay, 2; Bacteriology, 3; Chemical Manufactures, 5; Electives, 4.

Course for Agricultural Chemist

Second year: Quantitative Analysis, 4; German or French, 4; Biology, 5; Physics, 5.

Third year: *First semester.* German or French, 4; Organic Chemistry, 5; Bacteriology, 3; Electives, 6. *Second semester.* German or French, 4; Organic Chemistry, 5; Agricultural Chemistry, 5; Agricultural Bacteriology, 3 or 5, or Electives, 4.

Fourth year: *First semester.* Physical Chemistry, 5; Agricultural Chemistry, 5; Agricultural Chemistry Thesis, 2; Electives, 6. *Second semester.* Physical Chemistry, 5; Soils, 5; Agricultural Chemistry Thesis, 2; Dairy Chemistry, 3; Electives, 3.

Course for Soil Chemist

Second year: *First semester.* Quantitative Analysis, 6; German or French, 4; Physics, 5; Bacteriology, 3. *Second semester.* Quantitative Analysis, 5; Soils, 5; Physics, 5; Agricultural Bacteriology, 3.

Third year: *First semester.* German or French, 4; Organic Chemistry, 5; Soil Chemistry, 4; Systematic Botany, 2; Electives, 3. *Second semester.* German or French, 4; Organic Chemistry, 5; Soil Chemistry, 4; Mineralogy, 3; Electives, 2.

Fourth year: *First semester.* Soils Thesis, 2; Physical Chemistry, 5; History of Chemistry, 2; Geology, 5; Electives, 4. *Second semester.* Soils Thesis, 2; Physical Chemistry, 5; Soils Physics, 2; Agricultural Chemistry, 5; Electives, 4.

Course for Physiological Chemist

Second year: Same as for agricultural chemist.

Third year: *First semester.* German or French, 4; Organic Chemistry, 6; Physiology, 3; Physical Chemistry, 5. *Second semester.* German or French, 4; Organic Chemistry, 5; Physiological Chemistry, 4; Physical Chemistry, 5.

Fourth year: *First semester.* Bacteriology, 5; Advanced Physiological Chemistry, 4; Toxicology, 3; Physiological Chemistry Thesis, 2; Electives, 4. *Second semester.* Bacteriology, 5; Sem-

inary Physiological Chemistry, 1; Histology of Foods, 2; Chemistry of Foods, 5; Physiological Chemistry Thesis, 2; Electives, 3.

Course for Sanitary Chemist or Food Chemist

Second year: Same as for agricultural chemist.

Third year: *First semester.* German or French, 4; Organic Chemistry, 6; Vegetable Histology, 3; Physical Chemistry, 5. *Second semester.* German or French, 4; Organic Chemistry, 6; Microscopic Examination of Foods and Drugs, 3; Physical Chemistry, 5.

Fourth year: *First semester.* Thesis in Foods or Sanitary Chemistry, 2; Water and Gas Analysis, 2; Proximate Organic Analysis, 3; Toxicology, 3; History of Chemistry, 2; Electives, 6. *Second semester.* Thesis in Food or Sanitary Chemistry, 2; Food Chemistry, 5; Physiological Chemistry, 4; Elective, 7.

DEPARTMENTS OF INSTRUCTION

For detailed information regarding any of the following courses see Chemistry, College of Letters and Science; also College of Agriculture and College of Engineering.

Chemistry

1. General Chemistry, including Qualitative Analysis.
4. Thesis.
7. History of Chemistry.
11. Quantitative Analysis.
- 11a. Quantitative Analysis, for students in agricultural, sanitary, food and physiological chemistry.
13. Gas Analysis.
14. Water Analysis.
19. Proximate Organic Analysis.
20. Organic Chemistry.
20. Physical Chemistry.
46. Chemistry of Foods and their Adulterations.

Agricultural Chemistry

1. Agricultural Chemistry.
2. Agricultural Analysis.
4. Dairy Chemistry.
5. Animal Chemistry.
9. Thesis in Agricultural Chemistry.

Physiological Chemistry

4. Physiological Chemistry.
10. Advanced Physiological Chemistry.
11. Toxicology.
12. Seminary in Physiological Chemistry.

Assaying

10. Assaying.

Chemical Technology

1. Chemical Machinery and Appliances.
2. Technical Fuel, Gas and Oil Analysis.
4. Chemical Manufacture.
5. Industrial Chemistry.

Bacteriology

For detailed information see Bacteriology, College of Letters and Science.

1. General Bacteriology.
2. Medical Bacteriology.
4. Topical Work in Bacteriology.
17. Agricultural Bacteriology.

Botany

For detailed information see Botany, College of Letters and Science.

5. Vegetable Histology.
8. Histology of Foods.
20. Systematic Botany.
21. Microscopic Examination of Foods and Drugs.

Biology

For detailed information see Biology, College of Letters and Science.

1. General Biology.

English

For detailed information see English, College of Letters and Science.

1. Freshman English,

French

For detailed information see French, College of Letters and Science.

1. Elementary French.
4. Elementary French. For students that have had the equivalent of one year of French in high schools.
10. Second Year French.

Geology

For detailed information see Geology, College of Letters and Science.

1. General Geology.

German

For detailed information see German, College of Letters and Science.

1. Beginners' German.
- 2S. Second Year German.
- 3S. Scientific German.

Mathematics

For detailed information see Mathematics, College of Letters and Science.

2. Trigonometry.
3. Analytic Geometry.
5. Calculus.

Mechanical Drawing

For detailed information see Mechanical Drawing, College of Engineering.

1. Elements of Drawing.
2. Elements of Drawing. Continuation of Course 1.

Physics

For detailed information see Physics, College of Letters and Science.

1. General Lectures and Introductory Laboratory Practice.

Physiology

For detailed information see Physiology, College of Letters and Science.

5. Physiology.

Soils

For detailed information see Soils, College of Agriculture.

1. Introductory Lecture and Laboratory Course.
2. Soil Analysis.
5. Thesis.
21. Soil Chemistry.
22. Soil Physics.

Toxicology

For detailed information see Toxicology, College of Letters and Science.

1. Toxicology Lectures.
2. Toxicology, laboratory work.

Information concerning additional courses in any of the departments of instruction may be found by referring to the Index.

LABORATORIES

A description of the various scientific laboratories of the University may be found by referring to the Index.

LIBRARIES

The general library facilities are described on p. 64. The various scientific departments have excellent reference libraries in connection with the laboratories. These departmental libraries contain those books and periodicals which are most frequently used. In chemistry and allied sciences the University offers most excellent library facilities.

REQUIREMENT FOR GRADUATION

Students who have successfully completed any of the above courses of study will be admitted to graduation from the University and will receive the degree of Bachelor of Science.

CHARGES AND FEES

For the fees to be paid in this course and in the various scientific laboratories see Index under Fees.

THE COURSE IN COMMERCE

W. A. SCOTT, Director. Professor of Political Economy.

REQUIREMENTS FOR ADMISSION

Students will be admitted to this course on compliance with the conditions imposed for entrance to the College of Letters and Science. (See Index under Entrance Requirements.)

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the courses desired.

Students who have satisfied all the requirements for entrance, but do not wish to be candidates for the degree, will be admitted to any of the studies of this course for which they are properly prepared.

PLAN OF THE COURSE OF STUDY

The studies of the course may be classified under the following heads:

I. *Foundational Studies.*

To this group belong the studies which are regarded as essential in a liberal education and as a necessary foundation for more specialized subjects to be pursued later on. They comprise courses in natural science, mathematics, English, foreign languages, history and economics. In natural science, physical geography and the physiography of the United States are required as a basis for economic geography, upon which in turn are built several specialized courses in applied economics. In addition students elect a year's laboratory course in either physics or chemistry. The course in English is the general training course required of all freshmen in the University. Two foreign languages are required, the choices given being French, German and Spanish. In these courses special attention is devoted to the acquisition of a speaking and writing command of the language for commercial purposes. Economics and history reveal the forces which produce changes in commercial conditions and institutions and the laws of such changes. The courses prescribed along these lines are the economic and social history of England, the elements of political economy, money and banking, and transportation.

II. *Professional Studies.*

The aim of these is to teach students to understand and actually to perform the various processes common to all branches of commerce. They comprise business correspondence, business forms and documents, accounting, auditing, salesmanship, advertising, credits and collections, and the management of factories and other business concerns. In these courses the study of general principles is always accompanied by practice work in a well equipped laboratory.

This class of studies is distributed throughout the course, beginning with the sophomore year. It is so correlated with the other lines of work as to receive re-enforcement from them and to furnish constant tests of their efficiency.

III. *Elective Studies.*

Besides the two classes of studies described above, which are with few exceptions prescribed, each student is obliged to elect a group of related courses and a sufficient number of other courses to complete the minimum prescribed for a bachelor's degree. These groups must be arranged at the beginning of the junior year on consultation with the director, and are designed to give the student an opportunity to study intensively a particular field and to learn how to collect and utilize data bearing upon the problems of commerce and industry. His attainments in this direction are tested by a thesis prepared during the senior year. Among the fields available for group work and thesis writing are banking, transportation, accountancy, organization, insurance, corporation finance, foreign commerce, commercial law, and agricultural problems.

Approximately one-half of the student's time in the junior and senior years is available for free election from the great variety of courses offered in the various colleges and departments of the University. The opportunity here presented may be utilized to broaden the student's outlook into fields of knowledge not covered by the requirements of his course or to supplement the studies already pursued.

ARRANGEMENT OF STUDIES

FRESHMAN YEAR

Physical Geography, 3, (first semester); Economic Geography, 3, (second semester); German, French, or Spanish, 4; English, 3; Mathematics, 3; History, 3; Gymnastics and Drill.

SOPHOMORE YEAR

Economic Geography, 3, (first semester); Foreign language (continued), 2, or second language, 4; Chemistry or Physics, 5; Elementary Economics, 3, (first semester); Money and Banking, 3, or Transportation, 3, (second semester); Elements of Accounting, 2; Free Electives, 2 or 0; Gymnastics and Drill.

JUNIOR YEAR

Foreign language (continued), 2, or second language (if not taken in sophomore year), 4; Theory and Practice of Accounting, 2; Elective Group, 3; Free Electives, 8 or 10.

SENIOR YEAR

Foreign language (continued), 2; Commercial Law, 3; Advanced Accounting and Auditing, 2; or Business Organization and Management, 2; Elective Group and Thesis, 4 or 6; Free Electives, 4 or 6.

DEPARTMENTS OF INSTRUCTION

Algebra

1. Algebra. For detailed information see Mathematics. *First semester; three times a week.*
7. Commercial Algebra. Theory of probabilities, series, and the application of mathematics to insurance and finance.

Business Administration *

- a. The Elements of Accounting. Section 1, *M., W.*, 2 to 4; Section 2, *Tu., Th.*, 2 to 4.
- b. The Theory and Practice of Accounting. Prerequisite, course a. First semester's work may be taken without the second. Section 1, *Tu., Th.*, 10 to 12; Section 2, *Tu., Th.*, 2 to 4.
- c. Advanced Accounting and Auditing. Prerequisite, courses a and b. *W., F.*, 8 to 10.
- d. Business Organization and Management. Open to seniors only. *Tu., Th.*, 9.

* The courses in this field are officially classified with those in Political Economy and designated as Political Economy 8a, 8b, 8c, and 8d.

Chemistry

For detailed information see Chemistry.

1. General Chemistry. A general introductory course.

English

For detailed information see English.

1. Freshman English. English prose style. Composition.
4. Commercial Correspondence. Prerequisite, course 1. *Second semester. Tu., Th., 10.*

French

For detailed information see Romance Languages.

- 6C. Elementary Course.
- 17C. Conversation, Composition, and Reading, *Tu., Th., 11.*
- 29C. Conversation, Commercial Correspondence, and Reading.
Twice a week.
- 30C. Conversation, Commercial Correspondence, and Reading.

Geology

For detailed information see Geology.

- 4a. Physical Geography. *First semester.*

German

For detailed information see German.

- 2C. Modern Prose.
- 3C. Reading, Conversation, and Composition.
- 4C. A continuation of the work of the preceding year.
- 5C. The work of this course will be of a strictly practical character, being devoted chiefly to oral and written work on topics connected with the actual demands of a commercial career. *Tu., Th., 11.*

History

For detailed information see History.

4. History of the United States.
 - 4a. To the Presidency of Jackson. *First semester.*
 - 4b. From Jackson to the present time. *Second semester.*
5. English History.
15. Diplomatic History of the United States.

Physics

For detailed information see Physics.

1. General Lectures and Introductory Laboratory Practice.

Political Economy

For detailed information see Political Economy.

1. The Elements of Economics. *Repeated each semester; lecture F., 12.*
3. The Elements of Public Finance. *First semester.*
5. The Elements of Money and Banking.
- 7a. Economic Geography. *Second semester.*
- 7b. Economic Geography of the United States. *First semester.*
8. See Business Administration.
9. Commercial Law. Open only to juniors and seniors of suitable preparation.
18. Senior Seminars. For thesis students.
26. Agricultural Economics.
27. Historical and Comparative Agriculture. *First semester.*
30. Elements of Statistics.
31. Economic Statistics.
33. Financial History of the United States. *Second semester.*
34. The Money Market. *First semester.*
35. Transportation and Communication. *Second semester.*
- 37a. Corporation Economics. *Second semester.*
- 37b. Corporation Finance. Prerequisite, course 37a.
38. Insurance Economics. *Second semester.*

Political Science

For detailed information see Political Science.

17. Federal Administration. *Second semester.*
18. International Law. *Throughout the year.*
19. Contemporary International Politics.
21. Colonial Politics. *First semester.*
23. The Consular Service. *First semester.*

Spanish

For detailed information see Romance Languages.

- 2EC. Elementary.
- 6C. Conversation, Composition, and Reading.

- 7C. Conversation, Commercial Correspondence, and Reading.
- 8C. Conversation, Commercial Correspondence, and Reading.
- 9. Composition and Conversation.

COMMERCIAL COURSE FOR ENGINEERS

The College of Engineering offers a five-year course which permits a combination of the studies of the various engineering courses with the essential studies of the Course of Commerce. Students making this combination will take the engineering studies as prescribed, for which see Index under Engineering, and the studies of the Course in Commerce as follows:

FRESHMAN YEAR

Physical Geography and Economic Geography, 3.

SOPHOMORE YEAR

Economic Geography, 3; Elementary Economics (*second semester*), 3.

JUNIOR YEAR

Money and Banking (*first semester*) and Transportation (*second semester*), 3; Elective Group, 3.

SENIOR YEAR

Elective Group, 3; Business Administration, 3.

FIFTH YEAR

Business Administration, 3; Commercial Law, 3.

At the end of the fifth year the appropriate engineering degree will be conferred. Students who so desire may, during the senior year, write a thesis in connection with their elective group in Commerce, and receive the degree of Bachelor of Science.

GRADUATE STUDENTS

Graduates of this or other colleges and universities of good standing will be admitted to this course, and arrangements will be made so that they may take its peculiar studies in two years,

or in less time, provided they have already pursued some of them in their undergraduate courses.

PREPARATION OF TEACHERS

Students who wish to prepare themselves to teach commercial subjects in secondary schools will be aided in so arranging their elective work as to attain this end. Special facilities for pedagogical practice will be given such students in connection with the course in Business Administration, and work in addition to that prescribed may be arranged in subjects of especial importance to teachers.

SPECIAL LECTURES

Special lectures are provided from time to time for the purpose of acquainting students with present business conditions and opportunities. So far as possible, men representing the chief business enterprises of the United States are secured for this purpose.

REQUIREMENT FOR GRADUATION

Students who have successfully completed the above course of study will be admitted to graduation and will receive the degree of Bachelor of Arts.

COURSE IN JOURNALISM

WILLARD G. BLEYER, Chairman, Assistant Professor of Journalism.

PURPOSE AND PLAN OF THE COURSE

The courses preparatory to journalism have been selected and arranged with the purpose of indicating to students preparing for journalistic work the studies best adapted to give the broad training necessary for the successful pursuit of this profession. The increasing demand by editors of newspapers and periodicals for college graduates, indicates the recognition of the value of a college course as preparation for journalism. It is believed that the value of such a course may be greatly increased by having it include those subjects, a knowledge of which is essential for journalism of the best type.

The courses included in the list are of three kinds: (1), those designed to familiarize the student with present social, political, and industrial conditions in the light of their history and development, as well as with the literature of his own and other languages; (2) those designed to develop the student's power of expressing his ideas effectively in writing; (3) those intended to give the necessary technical instruction in the history, development, organization, and methods of modern journalism. The course of study has been arranged in the belief that the greater part of the time should be devoted to a study of the subjects of the first group, such as history, political science, economics, sociology, philosophy, psychology, language, and literature, which are fundamental to journalistic work. Instruction in the principles of effective written expression, and practice in writing are given by the courses in composition.

The technical work includes courses in newspaper writing of the several kinds and in newspaper editing, with a consideration of the methods of practical journalism, the history and development of the American press, and a study of the organization and management of a modern newspaper. Instruction is also given in the law of the press, including the law of copyright, literary property, libel, privileged publications, and other topics relating to the publication of books and newspapers. In connection with the course in newspaper writing special lectures on various phases of journalistic work are given by newspaper men in active service.

TECHNICAL AND TRADE JOURNALISM

Although the courses outlined are designed primarily for those preparing for newspaper and editorial work, the arrangement of them can be readily modified to meet the needs of students desiring preparation for technical or class journalism. Students in the College of Letters and Science may elect courses in the College of Mechanics and Engineering, the Law School, and the College of Agriculture, as well as in the Course in Pharmacy and the Course in Commerce in the College of Letters and Science. In the same manner students in the Colleges of Mechanics and Engineering, Agriculture, and the Law School, may elect courses in the College of Letters and Science, such as those in newspaper writing and editing. The Course in Commerce in the College of Letters and Science includes a number of special groups of

studies designed to furnish opportunity for a more thorough study of the various principles of commerce and industry, such as banking and finance, transportation, manufacturing industries, and agricultural industries. By combining studies in commerce, agriculture, engineering and other technical subjects with those outlined in preparation for journalism, students can obtain the necessary preparation for practically all lines of technical and trade journalism.

A course in agricultural journalism is given for those who desire special training for that kind of work.

LABORATORY EQUIPMENT

A laboratory is maintained for the use of the students in the course in journalism. The equipment includes seven standard typewriters on which students may prepare their work. Several thousand clippings of typical news reports from representative papers are mounted and filed as models. Magazine and special feature articles taken from various periodicals are filed to furnish examples of this type of work. Files of representative daily and weekly papers are provided for reference use by the students. Methods for preserving biographical, descriptive and statistical information as well as illustrations, are shown in the laboratory. Reference books, with descriptive matter and illustrations of typesetting and typesetting machines, printing presses, and stereotyping machinery also form a part of the equipment.

STUDENT PUBLICATIONS

The students of the university edit and manage a number of publications all of which offer excellent opportunities for practical experience in various kinds of journalistic work. Places on the editorial and business staffs of these publications are awarded for the most part on a basis of literary and executive ability, and are open to practically all students of the university. The Daily Cardinal, published as an afternoon newspaper, is edited by a staff organized from the students. Students in journalism may thus get systematic practice in all the details of newspaper making. The Sphinx, an illustrated humorous bi-weekly; the Wisconsin Magazine, a monthly devoted to short stories, verse, and essays; and the Badger, the university annual edited and published by the members of the junior class, all give opportunity for

a variety of experience in journalism. The Wisconsin Engineer, a quarterly edited and published by the students of the College of Engineering, and the Student Farmer, a monthly edited and managed by the agricultural students, furnish practice for those interested in technical and trade journalism.

UNIVERSITY PRESS CLUBS

Five press clubs are maintained by the students interested in journalism. The University Press Club, which was organized in 1892, is composed of the men in the institution who have done, are doing, or are preparing to do journalistic work. The meetings, which include a series of monthly dinners, are frequently addressed by newspaper and magazine editors. The Woman's Press Club consists of the women in the university and in Madison interested in journalism. The freshmen and sophomores in the course in journalism have organized a club. The Hoard Press Club was organized in 1908 by a number of students in the College of Agriculture. A professional journalistic fraternity is maintained by the juniors, seniors and graduates in the course in journalism.

FELLOWSHIP AND PRIZES

An alumni graduate fellowship in journalism of four hundred dollars, is given by the Alumni Association in connection with the Alumni Magazine. Several undergraduate prizes in journalism offered by the Daily Cardinal Association are awarded each semester to editors and reporters for excellent work.

GENERAL REQUIREMENTS

Students will be admitted to these courses on compliance with the conditions imposed for entrance to the College of Letters and Science. (See Index under Requirements for Entrance.)

Persons over twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the courses desired.

Students who have satisfied all the requirements for entrance but do not wish to be candidates for a degree, will be admitted to any of the courses for which they are properly prepared.

For the requirements for a degree of Bachelor of Arts see Index.

ARRANGEMENT OF COURSES

In accordance with the elective system of the University, students preparing for journalism are not restricted to a fixed course of study, but are permitted to elect any studies which they are qualified to pursue. The following list contains those courses in history, economics, political science, philosophy, and English, which bear most directly upon journalistic work. The courses in each subject have been arranged under the four years in the order in which they normally follow each other. Courses marked with an asterisk are required of all students; the number in parentheses indicate the number of the course in the department; Arabic figures following the parentheses indicate the number of hours a week; and the Roman figures, the semester in which the course is given.

FRESHMAN YEAR

Elements of Newspaper Writing (Journalism 1), 1; *Freshman English (1), 3; *Foreign Language, 4; English History (5), 3; Medieval History (1), 3; *Mathematics, 3 or *Science, 5.

SOPHOMORE YEAR

Newspaper Reporting and Correspondence (Journalism 2), 3; Sophomore Composition (2, 3), or Advanced Composition (6), 3; General Survey of English Literature (30), 3; History of the United States (4), 3; Elements of Economics (1), 3, I, II; Elements of Money and Banking (5), 3; General Political Science (1), 3, I; Economic Geography (7a, 7b), 3, II; *Foreign Language, 4.

JUNIOR YEAR

Newspaper Editing (Journalism 3), 2; American Literature (40), 2; Argumentation (Public Speaking 5a), 3, I; Modern European History (2), 3; The British Empire Since 1688 (43), 2; Elementary Law (2), 3, I; Government and Politics in the United States (7), 2, II; International Law (18), 2; Party Government (22), 3, I; Charities and Corrections (41), 3, II; Labor Problems (23), 2, II; Social Psychology (39), 3, I; Elements of Public Finance (3), 3, I; Problems of Taxation (24), 2, II; History of New England (13), 3, II; Psychology (1), 3, I; Ethics (41), 3, II; History of Modern Philosophy (32), 3, II; Logic (11), 2, II; *Foreign Language, 2.

SENIOR YEAR

Editorial Writing, and Special Feature Work (Journalism 4, 5), 2; History of the West (11), 3; Nineteenth Century Europe (39), 3, II; Diplomatic History of the United States (15), 2; History of Europe and Asia (48), 2; Social and Economic Statistics (31, 32), 3; Transportation and Communication (35), 3, II; Financial History of the United States (33), 3, I; The Money Market (34a) 3, I; Industrial Evolution and Its Problems (20), 2, I; Administrative Problems (6), 2, I; The Law of the Press (25), 1, II; Theory and Practice of Legislation (26), 3; Oriental Politics and Civilization (20), 3, II; Municipal Government in Europe and the United States (15), 3, II; Contemporary International Politics (19), 1; Social and Political Ethics (42), 2, I; Philosophic Thought in Nineteenth Century English Literature (23), 2, II; Abnormal Psychology (7), 2, II; Modern Drama (52), 2; Drama and Shakspeare (36, 36a), 3; American Literature (47), 2; Current Political Topics (32), 2; *Foreign Language, 2.

DEPARTMENTS OF INSTRUCTION

Journalism

For detailed information regarding courses in Journalism, see Journalism, College of Letters and Science.

1. Elements of Newspaper Writing.
2. Newspaper Reporting and Correspondence.
3. Newspaper Editing.
4. Editorial Writing.
5. Special Feature and Magazine Writing.
10. Seminary in Journalism.

See also Current Political Topics (course 32 in political science), The Law of the Press (course 26 in political science), and courses in agricultural journalism.

AGRICULTURAL JOURNALISM

For detailed information see Agricultural Journalism, College of Agriculture.

1. Agricultural Journalism.

English

For detailed information see English, College of Letters and Science.

1. Freshman English.
2. Sophomore Composition.
3. Technical Writing.
6. Advanced Composition.
30. General Survey of English Literature.
40. American Literature.
36. The Drama.
- 36a. Shakspeare.
47. Significant Movements in American Literature.
52. Modern Drama.

History

For detailed information see History, College of Letters and Science.

1. Medieval History.
2. Modern European History.
4. History of the United States.
5. English History.
11. History of the West.
13. History of New England.
15. Diplomatic History of the United States.
39. The Nineteenth Century, 1815-1900.
43. The British Empire since 1688.
48. Europe and Asia.

Philosophy

For detailed information see Philosophy, College of Letters and Science.

1. Psychology: Introductory Course.
11. Logic.
23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature.
32. History of Modern Philosophy.
41. Ethics.
42. Social and Political Ethics.
7. Abnormal Psychology.

Political Economy

For detailed information see Political Economy, College of Letters and Science.

1. The Elements of Economics.
2. Elementary Sociology.
3. Elements of Public Finance.
5. The Elements of Money and Banking.
- 7a. Economic Geography.
- 7b. Economic Geography of the United States.
8. Business Administration.
20. Industrial Evolution and Its Problems.
23. Labor Problems.
- 23a. Labor Legislation.
24. Problems in Taxation.
31. Economic Statistics.
32. Social Statistics.
34. The Money Market.
35. Transportation and Communication.
39. Social Psychology.
41. Charities and Corrections.
42. Public Utilities.
45. American Labor History.

Political Science

For detailed information see Political Science, College of Letters and Science.

1. General Political Science.
2. Elementary Law.
6. Administrative Problems.
7. Government and Politics in the United States.
15. Municipal Government in Europe and the United States.
18. International Law.
19. Contemporary International Politics.
20. Oriental Politics and Civilization.
22. Party Government.
25. The Law of the Press.
26. The Theory and Practice of Legislation.
32. Current Political Topics.

Public Speaking

- 5a. Argumentation.

THE COURSE IN PHARMACY

EDWARD KREMERS, Director, Professor of Pharmaceutical Chemistry.

THE OBJECT OF THE COURSE

The prime object of the Course in Pharmacy is to furnish a thoroughly scientific foundation for the pursuit of the profession of pharmacy. The elements of the fundamental natural sciences, chemistry, botany, or biology, and physics must first be studied before their application to pharmacy can rationally be considered. This is as true for pharmacy as for any other applied science or art. In pursuing these general studies the pharmacy students have the advantage of close association with students from other courses. This implies that in these studies they must be able to keep abreast with students who are graduates of accredited high schools. The best preparation for college, therefore, which the prospective pharmacy student should seek is not that of the shops, but that of a good high school or academy of like rank. The University does not demand practical experience for admission to the courses in pharmacy, but desires such preparation as will best fit for college or university work.

The general study of these fundamental sciences is followed by more or less specialized courses. General chemistry, inorganic and organic, qualitative and quantitative analysis and followed by pharmaceutical chemistry, and applied chemical analysis; general botany by vegetable histology and anatomy of drugs; general physics by pharmaceutical technique. These somewhat specialized studies, in turn, not only lay the foundation for the study of the more strictly applied courses in practical pharmacy and pharmacognosy, but also prepare the student for thesis work.

The student who can spend only two years at the University is compelled to take up the more technical studies of his course before he has laid a satisfactory foundation. Such a compromise is outlined under the caption, Courses of Study. The three-year student, as a rule, finds time to pursue other studies besides those outlined above, *e. g.*, German, physiology, or bacteriology, etc. The four-year student has the great advantage of supplementing his high school preparation during the freshman and sophomore

years by acquiring a reading knowledge of German and French, and by the study of university mathematics, all of which studies are of the greatest importance when the more advanced work of the natural sciences is taken up during the junior and senior years.

Special attention is called to the four-year course offered to graduates of accredited high schools. This course was created in order to accommodate those students who desire to obtain a general scientific education and to include in their course the pharmaceutical studies, and with the hope of stimulating a broader pharmaceutical education. For the more applied courses special laboratories have been equipped.

Like the sister profession, medicine, pharmacy, is in need, not only of the general practitioner, but also of the specialist. To meet the demands of such, the University offers graduate courses. Graduates who desire to prepare themselves as chemists for manufacturing establishments, as analytical, food or sanitary chemists, or as bacteriologists, will find that the graduate work in the Course in Pharmacy, as well as the other departments of the University, offers excellent opportunities for advanced and more specialized study. Special lines of research can also be pursued in various departments by those who desire to work for a higher degree. The attention of advanced students is especially called to the graduate work. (See Index.)

Laboratories

A description of the various general laboratories of the University may be found by reference to the Index.

THE PHARMACEUTICAL LABORATORIES. These laboratories are located in the west wing of the second floor and the east wing of the third floor of the new Chemistry Building. Their equipment is similar to that of the other laboratories in the same building.

Collections

The collections of the University, including the drug cabinet, are described elsewhere. See Index under Collections.

Libraries

For a statement as to general library facilities at the University and in the city of Madison, see Index under Library. The department library for ready reference is now housed in the li-

brary of the new Chemistry Building; a large, well lighted and equipped room on the third floor, unusually well supplied with reference works and the best periodicals. The other department libraries, as well as the general library, are all on the same campus and, therefore, easy of access.

Terms of Admission

The requirements for admission to the several colleges of the University are described on previous pages. See Index under Admission.

The special requirements for admission to the two-year pharmacy course are herewith repeated.

I. Graduates from high schools are admitted without examination and without practical experience in a drug store.

II. Non-graduates are admitted if they comply with the following requirements:—

1. They must be at least eighteen years of age.

2. They must present satisfactory certificates of *at least* one year's attendance from some standard high school, or its equivalent from a similar educational institution.

3. The time intervening between the secondary education and the college course should have been spent in a drug store where physicians' prescriptions are regularly compounded.

Degrees

The first degrees given in pharmacy are that of *Graduate in Pharmacy*, upon completion of the two-year course, and that of *Bachelor of Science, Pharmacy Course*, conferred upon candidates who have successfully met the requirements of the four-year course.

The degree of *Master of Pharmacy* is conferred as a second degree upon graduates in pharmacy.

The degrees of *Master of Science* and *Doctor of Philosophy*, are conferred as higher degrees upon candidates who have a baccalaureate degree.

Fees and Expenses

The tuition and laboratory fees and an estimate of expenses for board and lodging are given on previous pages. (See Index.)

COURSES OF STUDY

Two-Year Course

FIRST YEAR. FIRST SEMESTER

Chemistry 3.* General Chemistry. The laboratory work accompanying this course is especially designed for pharmacy students. *Eight credits.* Mr. KAHLENBERG, Mr. WALTON, and Mr. DuMEZ.

Biology 1. General Biology.† Introductory to both botany and zoology, and required as preliminary to all work in either department. *Two recitations, or lectures, and eight hours' laboratory work a week. Five credits.* Mr. HARPER, Mr. ALLEN, and assistants.

Botany 35. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. *One credit.* Mr. DENNISTON.

Pharmacy 1. Laboratory Technique. The principles and practice of pharmaceutical operations, such as comminution, expression, decantation, filtration, maceration, percolation, diffusion, dialysis, crystallization and precipitation. *Three credits.* Mr. KREMERS and Mr. DuMEZ.

FIRST YEAR. SECOND SEMESTER

Chemistry 3. General Chemistry continued as a three credit study during the entire semester, with qualitative analysis as five credits during the first half of the semester. *Five and one-half credits.* Mr. KAHLENBERG, Mr. WALTON and Mr. DuMEZ.

Chemistry 15. Quantitative Analysis. *Second half of semester; daily.* Mr. LENHER and Mr. DuMEZ.

Chemistry 20b. Organic Chemistry for Pharmacy students. *Two credits.* Recitations and laboratory work. Mr. KOELKER and Mr. DuMEZ.

Botany 30. Morphology and Classification of the Flowering Plants. The life histories and ecology of seed plants, with a comparative study of the structure of the principal families and

* The figures refer to the numbers of the courses as given in the statements under departments of instruction.

† Students who have had a satisfactory high school course in Biology can substitute an elective for this semester's work.

the identification of common species. Field work will be an important feature. Excursions on Saturdays. *M., Tu., W., Th., F., 8 to 10. Five credits.* Mr. DENNISTON, Mr. MELHUS.

Pharmacy 1. Laboratory. Technique. Continuation of the work of the first semester. (See above.)

SECOND YEAR. FIRST SEMESTER

Chemistry 6. Advanced Inorganic Chemistry. Lectures and recitations, *Tu., Th., F., 10; laboratory work daily. Five credits.* Mr. KREMERS, Mr. MANN.

Chemistry 40. Plant chemistry. As a three credit study supplementary to pharmacognosy. Recitations, *M., 10; two laboratory periods.* Mr. KREMERS and Miss WAKEMAN.

Botany 5. Vegetable Histology. A systematic study of the tissues of the phanerogams and ferns. *Five credits.* Mr. DENNISTON, Mr. RUSSELL.

Botany 32. Pharmacognosy. This course presents to the student the main facts of the natural history of drugs, and the plants producing them. *Two credits.* Mr. DENNISTON.

Pharmacy 2. Pharmaceutical Technology. The study and manufacture of galenical and other preparations; waters, tinctures, fluid extracts, spirits, oleo-resins, etc.; also of pills, suppositories, ointments, plasters, etc. Lectures and recitations, *Tu., Th., 11; three laboratory periods. Five credits.* Mr. KREMERS and Mr. SIMONS.

Thesis. *Two credits.*

SECOND YEAR. SECOND SEMESTER

Chemistry 27. Advanced Organic Chemistry. Lectures and recitations, *Tu., Th., F., 10; laboratory work daily. Five credits.* Mr. KREMERS and Mr. MANN.

Chemistry 40. Plant Chemistry. Continued from first semester. Mr. KREMERS and Miss WAKEMAN.

Chemistry 45. Alkaloid Assay. *One credit.* Mr. FISCHER and Mr. SIMONS.

Botany 31. Microscopical Examination of Drugs and Food Products. The object of this course is to study and illustrate the methods of identifying powdered drugs and food products and detecting adulterations. *Three credits.* Mr. DENNISTON.

Botany 32. Pharmacognosy. Continuation of first semester's work. Mr. DENNISTON.

Pharmacy 3. Prescription Practice. The study of the prescription and of the materials that enter into it; practice in the compounding of physicians' prescriptions; also the study of physical, chemical and therapeutical incompatibilities. *Lectures and recitations, Tu., Th., 11; two laboratory periods. Four credits.* Mr. KREMERS and Mr. SIMONS.

Four-Year Course

Students who desire to include pharmaceutical studies as a part of their general college education will have to elect the prerequisite studies enumerated below to accomplish this end. Such a course, if to lead to the degree of *Bachelor of Science, Pharmacy Course*, must include courses 1, 2, and 3 in Pharmacy, and course 22 in Botany.

Basal sciences: Chemistry 3, 15, 20b or their equivalents. Botany 1 and 30 or its equivalent. Physics 1. These should be taken during the first and second years.

Advanced sciences: Chemistry 6 and 27. Botany 5 and 31. These courses should be taken during the third year, in order that the courses in Pharmacy and Pharmacognosy mentioned above may be taken during the fourth year.

The language requirements of this course are English 1, French 1, and German 2S, which should be taken during the first and second years.

The major study and thesis may be taken in chemistry, botany, pharmacy, or any department in which the student is sufficiently prepared to do such work. For the rules governing the major study and thesis see index under Major Study.

Additional electives sufficient to make 120 unit-hours may be chosen upon consultation with the adviser for Pharmacy students.

LIBRARY TRAINING COURSES

Experts are agreed that the best foundation for success in library work is a sound general education, and the ideal plan of preparation is a four years' college course followed by one or two years of technical training. But for those who are not able to afford so much time a joint course has been arranged at the University and State Library School, whereby a student of ability and energy can in four years, with the opportunities afforded by the summer session, take the degree of Bachelor of Arts and at the same time complete the technical training required by the State Library School. In the first two years, students take the regular freshman and sophomore work of the College of Letters and Science, choosing such courses as will enable them to pass the entrance examination of the Library School. All applicants, without exception, are required to take this examination, which is held on the second Friday in June of each year. In the junior and senior years, students substitute equivalent courses in the Library School for ten credits of University work each year. Of the twenty credits of Library School work accepted by the University, four may be counted towards an English major, if the candidate chooses that subject.

HOURS OF LECTURES

The Library School will arrange its lecture hours so as not to interfere with college courses. For the junior year the courses in the Library School will be on Tuesday and Thursday, for the senior year, on Monday, Wednesday, and Friday.

LIBRARY SCHOOL COURSES

Junior Year

First semester. Reference (2 credits), Loan (1), Classification (2). *Second semester.* Reference (2), Public Documents (1), Trade Bibliography and Binding (1), Children's Literature and Library Literature (1); with practice work, for which facilities will be offered by the Free Library Commission and in the Madison Free Library.

Senior Year

First semester. Cataloguing (3), Library Economy (1), Book Selection and Publishing Houses (1). *Second semester.* Book Selection (1), Administration (1), Library Economy (1), Subject Bibliography and Bibliography for thesis (2). The thesis will be under the direction of the University department in which the student chooses his major subject, and the bibliography included in it will be accepted by the Library School in satisfaction of its thesis requirements.

Field Practice

Two months of actual library work in an approved library, preferably a Wisconsin library, will be required by the Library School before its diploma is granted. This work, for which the Director of the school will arrange, can be done during the summer, following either the junior or senior year. If it is not done until the close of the senior year, and the student should secure a position at commencement time, the first three months of satisfactory work in this position will be accepted for the required field work, and the diploma granted.

Detailed information regarding the courses in the University and in the State Library School is given in a special bulletin entitled Library Training Courses.

The State Law Library in the Capitol numbers about 50,000 volumes.

Students are allowed to draw books from the Madison Free Library, located in its new building. This is a well selected collection of 22,000 volumes.

The excellence and extent of these libraries is such as to make Madison among the first, and in some departments the most important, of library centers west of the Alleghanies.

COURSE FOR THE TRAINING OF TEACHERS

EDWARD C. ELLIOTT, Director, Professor of Education.

GENERAL STATEMENT

In order to correlate and to provide for the further development of those several activities comprising the work of the University for the preparation of teachers, and to contribute to the improvement of the standards of teaching, especially in the secondary schools of the state, the special course for the training of teachers was established, February, 1908.

The course for the training of teachers is intended to prepare students for teaching and supervising instruction, particularly in the public high schools of the state. This preparation rests upon the basis of a sound general education, and consists, in addition, of the following principal parts: (1) special academic instruction in the subjects to be taught; (2) professional training by means of, (a) departmental teachers courses, and (b) courses in the departments of Education and Philosophy, accompanied by observation of teaching, under supervision, in selected schools, and in certain instances by practice teaching.

The demands made upon teachers under modern educational conditions render it highly desirable that preparation for teaching should include one year of graduate study in addition to the four years of college work. Where this is not possible, students are strongly recommended to take two summer sessions, or one semester, of advanced study, entitling them to the special certificate, of which particulars are given below. Provision is, however, made for a course to be completed during the four years of undergraduate study, embodying the features outlined above, and leading to the University Teachers Certificate.

UNDERGRADUATE COURSE FOR THE TRAINING OF TEACHERS

The Undergraduate Course for the Training of Teachers is designed to meet the needs of those students who, during the period of undergraduate study, desire to prepare themselves for teaching. For these students, provision is made for such a correlation of academic and professional study as will meet the minimum requirements for teaching.

ADMISSION AND REGISTRATION.—1. To become a candidate for the University Teachers Certificate, a student must before December first of the junior year, in addition to the usual registration, register in the Course for the Training of Teachers.

2. Each registrant must indicate for the joint approval of his major adviser and the director of the course, the subject or subjects, preparation for the teaching of which is contemplated. In no case will more than three *related* subjects be approved. (A major subject; a major and one minor subject; a major and two minor subjects.)

REQUIREMENTS FOR COMPLETION.—1. Satisfactory fulfillment of the requirements of preparation for teaching of either:

- (a) A major subject; or
- (b) A major subject and one minor subject; or
- (c) A major subject and two minor subjects.

2. To fulfill the requirements of preparation for the teaching of the selected *major* subject, a student must present a total of not less than *twenty* credits; and, in addition, credit for the departmental teachers course in such major subject. (See section, Departments of Instruction (p. 273), for the credit requirements prescribed by the different departments.)

3. To fulfill the requirements of preparation for the teaching of the selected *minor* subject or subjects, a student must present a minimum of *ten* credits in each minor subject. This minimum may not include any departmental teachers course. (See section, Departments of Instruction (p. 273), for the credit requirements prescribed by the different departments.)

4. In addition to the requirements for the major and minor subjects, the special requirements for the University Teachers Certificate, as indicated in the following section, must be completed.

University Teachers Certificate

The requirements for the University Teachers Certificate shall consist, in addition to the work done in the major subject and other work, of *twelve* credits, to be divided as follows: Psychology, (Philosophy 1), *three* credits; one departmental teachers course, *two* credits; Education, *seven* credits; including an option of *two* credits in a teachers course in a second department. (June 3, 1907.)

The requirement of Education is subject to the following conditions:

(a) Credits must be obtained from the following courses: Education 1, 6, 11, 13 and 41. These courses are the only ones in Education that may be elected in fulfillment of the requirements for the certificate, except as noted in (b).

(b) Graduates of normal schools are *not* permitted to elect Education 1, 6, 11, 13 or 41 in fulfillment of the requirements for the certificate.

Graduates of the long course in Agriculture presenting credit in the following special work will be entitled to receive the certificate. Psychology, *three* credits; Education, *three* credits; Agricultural Education, *two* credits.

Graduates of normal schools, candidates for the bachelor of arts degree, must obtain credit for the following special work in the University in order to receive the certificate. Education, *three* credits; one departmental teachers course, *two* credits.

A departmental teachers course may not be credited toward the certificate unless the subject concerned is offered as a major or minor.

5. Upon the fulfillment of the foregoing requirements a student will be recommended by the director of the course to the President of the University, to receive the certified statement prescribed by section 458b—2 of the Laws of Wisconsin. This certified statement indicating the subject, or subjects, the requirements for the teaching of which have been fulfilled, when presented to the state superintendent, entitles the holder to receive a license to teach in any public school in Wisconsin for one year. Graduates who have received this certificate and present satisfactory evidence of good moral character and one year of successful teaching after graduation, are entitled to receive from the state superintendent an unlimited state certificate.

PROFESSIONAL INSTRUCTION—DEPARTMENTAL TEACHERS COURSES

As stated above, this course rests upon the foundation of a sound general education obtained during the first two years of college work. Very naturally during these two years, the student will begin to direct his study along certain academic lines, until

by the beginning of the junior year, his tastes and capacities will enable him to focus his attention more directly upon those subjects, preparation for the teaching of which is contemplated. During the junior year, and in some instances earlier, opportunity will be found to elect certain of the required fundamental professional courses in Philosophy and Education.

The plan of the course involves a considerable concentration of professional study during the junior and senior years. In addition to the courses in Education, this professional training includes courses, within the selected academic departments, especially adapted to the professional needs of students preparing to teach. These departmental teachers courses place their chief emphasis upon the scope and method of presentation of the specific subject matter normally included within the curriculum of the high school and are in charge of instructors especially fitted for the work. They are open only to those students who have previously completed a certain prescribed minimum of academic courses in the subject, usually students of senior or graduate standing. At least one of these courses must be taken by students preparing to teach. Credit for such course is included in the maximum number of credits permitted for a major subject.

For the purpose of affording a practical concrete basis for the work of the several departmental teachers courses, and of the courses in Education, facilities are provided for the observation of teaching, and in some instances for practice teaching in elementary classes within the University.

The observation of teaching is carried on in the high and elementary schools of Madison, under a special agreement with the board of education of the city. By this agreement, a number of teachers in the Madison public schools have been specially designated to cooperate with the university instructors in making the departmental teachers courses and the observational work of the fullest value to the students.

During the year 1909-1910 the following teachers in the public schools of Madison have been in charge of the classes open for observational study by students of the University.

HIGH SCHOOL:—Volney G. Barnes, Physics; Sarah D. Jenkins, English and French; Marie McClernan, Latin; Julia A. Murphy, History; David Olson, Physical Geography; Martha E. Sell, His-

tory; Winnie C. Warning, Mathematics; Melvin J. White, History; Caroline M. Young, German.

ELEMENTARY SCHOOL—LYMAN C. DRAPER SCHOOL:—Adeline R. Marvin, *Principal*, Eighth Grade; C. Lorena Reichert, Seventh Grade; Elizabeth A. Sloane, Sixth Grade; Clara B. Leonard, Fifth Grade; Eva M. Wirth, Fourth Grade; Mary S. Huff, Third Grade; Alice M. Mihleis, Second Grade; Clare Dengler, First Grade.

WASHINGTON IRVING SCHOOL:—Mary L. Edgar, *Principal*, Eighth Grade; Renette Jones, Seventh Grade; Della J. Bowers, Sixth Grade; Florence Whitney, Fifth Grade; Mary L. Burdick, Fourth Grade; Helen F. Fitch, Third Grade; Jessie M. Clough, Second Grade; Florence Nelson, First and Second Grades; Dora Huber, First Grade; Cora A. Morgan, Kindergarten.

SPECIAL:—Max H. Bauman, Manual Training; Blanche M. Newton, Domestic Science; Vashti Skidmore.

DEPARTMENTS OF INSTRUCTION

Only such departments and courses of instruction are here indicated as are immediately related to the professional work mentioned within the Undergraduate Course for the Training of Teachers. The announcements of the several departments and colleges of the University should be referred to for more extended and detailed information regarding the courses of instruction open to those students intending to teach. The director of the course and the departments concerned should be consulted with reference to the fulfillment of the requirements for the Advanced Course for the Training of Teachers.

Agriculture

For detailed information concerning the equipment, and the courses offered in the College of Agriculture see index.

REQUIREMENTS FOR TEACHING AGRICULTURE AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—Graduates of the long course in Agriculture, preparing to teach, will be entitled to receive the University Teachers Certificate, upon the recommendation of fitness by the dean of the college of agriculture, and upon completing as a part of their elective work, the following special courses: Psychology, *three credits*; Education, *three credits*; The Teaching of Agriculture, *two credits*.

REQUIREMENTS FOR TEACHING AGRICULTURE AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—Beginning with the academic year 1910-11, students in the College of Letters and Science, will be permitted to offer Agriculture as a minor subject in connection with a major subject in physical or biological science. A minimum of *eighteen* credits will be required, including *ten* credits in Animal Husbandry 1, Agronomy 1, Dairy Husbandry 1, Horticulture 1; the remaining *eight* credits to be from *approved* and *related* courses from the following: Agricultural Chemistry 1, 2 and 4; Agricultural Economics 1 and 26; Agricultural Engineering 1, 2 and 4; Agronomy 2 and 20; Animal Husbandry 2, 20 and 21; Bacteriology 1, 20 and 22; Dairy Husbandry 2; Horticulture 2, 6, 7. (8 open to women); Soils 1, 2 and 20.

DEPARTMENTAL TEACHERS COURSE.—Agriculture. The Teaching of Agriculture. *Two credits. Second semester.* MR. HATCH.

Botany

For a detailed description of the courses offered in Botany, as a preparation for teaching, see index under Botany.

Students preparing to teach botany, either as a major or minor subject, are advised to elect courses in both structural and physiological botany, and also those that involve field work.

REQUIREMENTS FOR TEACHING BOTANY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits from the following courses: Biology 1; Botany 2, 3, 4, 5, 6, 7, 12, 13, 14, 17, 19, 20, 30, and 31.

REQUIREMENTS FOR TEACHING BOTANY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits from the following courses: Biology 1, Botany 2, 3, 4, 5, 6, 9, 12, 13, 20 and 30. Especial attention is called to course 9 which is adapted to the needs of those taking a teacher's minor in botany.

DEPARTMENTAL TEACHERS COURSE.—Botany 13. Botanical Methods. Prerequisite, courses 1, 2, 3, and 4. *Two credits. Second semester.* MR. HARPER, MISS BACHMAN.

Chemistry

For a detailed description of the courses offered in Chemistry, as a preparation for teaching, see index under Chemistry.

REQUIREMENTS FOR TEACHING CHEMISTRY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits, including courses 1, 20 (first semester) and 11 (at least five credits).

REQUIREMENTS FOR TEACHING CHEMISTRY AS A MINOR SUBJECT—
UNDERGRADUATE COURSE.—A minimum of ten credits.

DEPARTMENTAL TEACHERS COURSE.—Chemistry 5. The Teaching of Chemistry. Prerequisite, major requirements above indicated; course 11 may be taken simultaneously. *Two credits. Second semester.* Mr. WALTON.

Civics

See under Political Science.

Commerce

For detailed information concerning the courses offered in the Course in Commerce see index under Commerce.

The Course in Commerce affords adequate facilities for those students who wish to prepare themselves to teach commercial subjects in secondary schools. Such students are advised to consult with the director of the Course in Commerce in the arrangement of elective work. Special facilities for pedagogical practice will be given such students in connection with the courses in business administration, and work in addition to that prescribed may be arranged in subjects of especial importance to teachers.

Drawing

For a detailed description of the courses offered in Drawing, see index under Drawing.

REQUIREMENTS FOR TEACHING DRAWING AS A MINOR SUBJECT—
UNDERGRADUATE COURSE.—A minimum of nine credits in courses 1, 2, and 3.

Education

For detailed information concerning the equipment, and the courses offered in Education, see index under Education.

The following courses are open for election by those students fulfilling within the University, the requirements in education of the Undergraduate Course for the Training of Teachers. (See Index under University Teachers Certificate.)

Education 1. History of Modern Education. *Two or three credits. Repeated each semester.* Mr. SEARS.

Education 6. Public Education. *Two credits. First semester.* Mr. ELLIOTT.

Education 11. Mental Development. *Two or three credits. Repeated each semester.* Mr. O'SHEA,

Education 13. Principles of Education. *Two or three credits. Repeated each semester.* Mr. O'SHEA.

Education 41. Educational Psychology. *Two or three credits. Repeated each semester.* Mr. HENMON.

The above mentioned courses are not open for election by normal school graduates fulfilling the requirements for the University Teachers' Certificate. For courses open to such students see announcement of courses in the department of education.

English

For a detailed description of the courses offered in English, as a preparation for teaching, see index under English.

REQUIREMENTS FOR TEACHING ENGLISH AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-four credits, in addition to the thesis, and exclusive of course 1. Courses 30; 20a or 23 and 25; 50a and 50b must be included. A total of thirty-six credits, in addition to the thesis and course 1, may be taken.

REQUIREMENTS FOR TEACHING ENGLISH AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum, (in addition to course 1), of courses 30; and 50a, or 2, or 6 (first semester); and one of the following groups: (a) 34 and 35; (b) 36 or 36a; (c) 40.

DEPARTMENTAL TEACHERS' COURSES.—50a. The Teaching of English. *Two credits. First semester.* Mr. BASSETT.

50b. The Teaching of English. (Continuation of 50a.) *Two credits. Second semester.* Mr. BASSETT.

French

See under Romance Languages.

Geology

See under Physiography and Geography.

German

For a detailed description of the courses offered in German as a preparation for teaching, see index under German.

REQUIREMENTS FOR TEACHING GERMAN AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—Students beginning the study of German in the University with course 1 will generally not be able to prepare to teach German as a major subject. Students taking course 2 in the freshman year should as a minimum devote to German eight credits a year for the remaining three years, tak

ing thus, including the thesis, a total of twenty-four credits in advance of course 2. For the maximum number of credits that may be elected see p. 155. The following courses are required: courses 10 or 12, 14, 30 or 31, 50 and 51.

REQUIREMENTS FOR TEACHING GERMAN AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of course 10 or 12 (with prerequisite) and at least one course in German literature selected from courses 21 to 31 inclusive.

DEPARTMENTAL TEACHERS COURSE.—German 14. The Teaching of German. *Two credits. First semester.* Mr. EVANS.

Greek

For a detailed description of the courses offered in Greek as a preparation for teaching, see index under Greek.

REQUIREMENTS FOR TEACHING GREEK AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eighteen credits in courses 1a, 1b, 2a, 3, and either 5a and 5b or 6.

REQUIREMENTS FOR TEACHING GREEK AS A MINOR SUBJECT—A minimum of courses 1a, 1b, 2a and 3.

DEPARTMENTAL TEACHERS COURSE.—The Department of Greek does not offer a regular departmental teachers course. For those preparing to teach Greek, opportunity is provided to study the methods and aims of the instruction through the university classes in Elementary Greek.

History

For a detailed description of the courses offered in History as a preparation for teaching, see index under History.

REQUIREMENTS FOR TEACHING HISTORY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of thirty credits, of which at least fourteen must be in advanced courses and thesis.

REQUIREMENTS FOR TEACHING HISTORY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of sixteen credits, including at least four in advanced courses.

DEPARTMENTAL TEACHERS COURSES.—History 50. The Teaching of History. *Two credits. Each semester.* Mr. CHASE.

History 51. Supplementary Reading for High School Teachers of History. *Two credits. Second semester.* Mr. CHASE.

Home Economics

For a detailed description of the courses offered in Home Economics as a preparation for teaching, see index under Home Economics.

REQUIREMENTS FOR TEACHING HOME ECONOMICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum credit of courses 2, 3, 4, 5, 6, 7, 8, 9, 10 and 21.

DEPARTMENTAL TEACHERS COURSE.—Home Economics 21. Prerequisite courses, 2, 3, 4, 5, 6, 7, 8, 9, 10. *Two credits. Second semester.* Miss MARLATT.

Latin

For a detailed description of the courses offered in Latin as a preparation for teaching, see index under Latin.

REQUIREMENTS FOR TEACHING LATIN AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of thirty-two credits, including courses 1, 2, 3 or 5, and 4, or equivalents, and 16.

REQUIREMENTS FOR TEACHING LATIN AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-four credits, including courses 1, 2, 3 or 5, and 4, and one advanced course for one year.

DEPARTMENTAL TEACHERS COURSE.—Latin 16. The Teaching of Latin. *Two credits. Second semester.* Mr. SLAUGHTER

Manual Training

Beginning with the academic year 1910-11, the University proposes to establish, in the College of Engineering, and with co-operation with the several allied departments, courses appropriate for the preparation of teachers and supervisors of manual training.

Mathematics

For a detailed description of the courses offered in Mathematics as a preparation for teaching, see index under Mathematics.

REQUIREMENTS FOR TEACHING MATHEMATICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-five credits, including courses 5, 6, and 12 or 15, and the courses that necessarily precede them.

REQUIREMENTS FOR TEACHING MATHEMATICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of fifteen credits, inclusive of course 5.

DEPARTMENTAL TEACHERS COURSE.—Mathematics 22. The Teaching of Mathematics. *Two credits. Second semester.* Mr. SKINNER.

Music

For detailed information concerning the courses in music, as a preparation for teaching public school music, see index under Music.

The Department of Music has adequate facilities for the training of teachers of public school music. This training includes courses both for those who expect to combine the teaching of other branches with the subject of music in the grades or the high school (see in particular course 9); and for those who desire to fit themselves for the special work of supervision of music in the public schools (see in particular courses announced in public school music). Opportunity is also offered for cultural studies in appreciation of music, history of music, etc.

Attention is called to the special advantages offered in the School of Music for the private study of piano, voice, organ and violin for moderate tuition; also for choral practice in the large Choral Union which rehearses weekly throughout the academic year.

Philosophy

For detailed information concerning the courses offered in Philosophy open for election by students preparing to teach, see index under Philosophy.

The following course (Philosophy 1) must be completed by all students fulfilling the requirements of the Undergraduate Course for the Training of Teachers.

Philosophy 1. Psychology: Introductory Course. *Three credits. First semester.* Mr. JASTROW, Mr. SHARP, Mr. OTTO.

Physical Training

For detailed information concerning the courses in Physical Training as a preparation for teaching, see index under Physical Training. The Department of Physical Training for Men and the Department of Physical Training for Women, each offer special courses in the teaching of physical training.

REQUIREMENTS FOR TEACHING PHYSICAL TRAINING AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in gymnastics.

DEPARTMENTAL TEACHERS COURSES.—Physical Training. The Teaching of Physical Training: Men. *Two credits. Second semester.* Mr. ELSOM, Mr. MAIN, Mr. NESPOR.

Physical Training 6. The Teaching of Physical Training: Women. *Two credits. Repeated each semester.* Miss MAYHEW.

Physics

For a detailed description of the courses offered in Physics as a preparation for teaching, see index under Physics.

REQUIREMENTS FOR TEACHING PHYSICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in approved courses.

REQUIREMENTS FOR TEACHING PHYSICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in approved courses.

DEPARTMENTAL TEACHERS COURSE.—Physics 4. The Teaching of Physics. Prerequisite, courses 2a, 2b, 3a, and 3b. *Two credits. Second semester.* Mr. SNOW.

Physiography and Geography

For a detailed description of the courses offered as a preparation for teaching physiography and geography, see index under Geology.

REQUIREMENTS FOR TEACHING PHYSIOGRAPHY AND GEOGRAPHY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in approved courses in the department of geology.

REQUIREMENTS FOR TEACHING PHYSIOGRAPHY AND GEOGRAPHY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in approved courses in the department of geology.

DEPARTMENTAL TEACHERS COURSE.—Geology 10. The Teaching of Physical Geography. *Two credits. First semester.* Mr. WHITBECK.

Physiology

For a detailed description of the courses offered in anatomy, physiology, bacteriology and hygiene as a preparation for teaching Physiology, see index under Anatomy, Physiology, Bacteriology, Hygiene.

The departments of Anatomy, Physiology and Bacteriology and Hygiene, acting conjointly, have outlined the following as a preparation for teaching human physiology.

REQUIREMENTS FOR TEACHING PHYSIOLOGY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-three credits in the following courses: physiological chemistry 4 (prerequisite, organic chemistry) four credits; anatomy 5 (prerequisite, biology 1) three credits; anatomy 15, three credits; physiology 5, nine credits; bacteriology 1, three credits; general hygiene 7, one credit.

In order to fulfill these requirements, physics 1, chemistry 1, and biology 1, should be completed before the beginning of the junior year.

REQUIREMENTS FOR TEACHING PHYSIOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eight credits in the following courses: physiology 1 and 1a (four credits); bacteriology 1 (three credits); general hygiene 7 (one credit); physics 1, chemistry 1, and biology 1 should be taken.

Political Science

For a detailed description of the courses offered in Political Science as a preparation for teaching, see index under Political Science.

REQUIREMENTS FOR TEACHING GOVERNMENT AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-one credits, in addition to the thesis, in approved courses, and including course 29.

REQUIREMENTS FOR TEACHING GOVERNMENT AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of sixteen credits in approved courses.

DEPARTMENTAL TEACHERS COURSE.—Political Science 29. The Teaching of Government. *Two credits. Second semester.* Mr. Bailey.

Romance Languages

For a detailed description of the courses offered in French as a preparation for teaching, see index under Romance Languages.

Students preparing to teach Spanish or Italian, should consult with the chairman of the department of Romance Languages.

REQUIREMENTS FOR TEACHING FRENCH AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in advance of course 10. The following courses are required: courses 35 or 36, or one credit of each; one two-credit composition or conversa-

tion course, or two one-credit courses of such work. At least one of the courses dealing with an extended period of French literature, as for example, courses 21, 22, 23, 25, 26, 28, 31, 32, or 34, and course 38 in French pronunciation should be taken. For those taking more than the minimum, courses 40 or 41 are recommended.

REQUIREMENTS FOR TEACHING FRENCH AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eight credits in advance of course 10. At least one course in conversation or composition, and one course in some extended period of French literature, as for example, courses 21, 22, 23, 25, 26, 28, 31, 32, or 34, and course 38 in French pronunciation should be taken. The requirements for preparation to teach French as a minor will vary greatly, depending upon the acquirements of the student in first and second year work. All such students are advised to consult with the chairman of the department of romance languages during their second year's work in French.

DEPARTMENTAL TEACHERS COURSES.—French 35. The Teaching of French. *One or two credits. First semester.* Mr. SMITH, Miss GAY.

French 36. The Teaching of French. *One or two credits. Second semester.* Mr. SMITH, Miss GAY.

Zoology

For a detailed description of the courses offered in zoology as a preparation for teaching, see index under Zoology.

REQUIREMENTS FOR TEACHING ZOOLOGY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits from the following courses: biology 1; zoology 2a, 2b, 4, 9, and 20.

REQUIREMENTS FOR TEACHING ZOOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits from approved courses in the list above indicated.

DEPARTMENTAL TEACHERS COURSE.—Zoology 20. The Teaching of Zoology. *One credit. First semester.* Mr. HOLMES.

ADVANCED COURSE FOR THE TRAINING OF TEACHERS

The Advanced Course for the Training of Teachers is designed to meet the needs of those students who desire a more intensive preparation for teaching than that provided for by the Undergraduate Course. As planned at the present time, the

special advanced study may be accomplished during one semester of resident graduate work or through work during two summer sessions.

ADMISSION AND REGISTRATION.—1. Any student eligible to graduate standing in the University, may, upon the recommendation of the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers. Provided, that the previous preparation of the student contains an amount of professional study equivalent to that specified in paragraph 4 of the requirements indicated for the completion of the Undergraduate Course for the Training of Teachers.

2. Any student eligible for entrance to graduate standing in the University, whose previous preparation does not contain an amount of professional study equivalent to that specified in paragraph 4 of the requirements indicated for the completion of the Undergraduate Course for the Training of Teachers, may, upon the recommendation of the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers; provided, that such student must complete, in addition to the indicated requirements of the Advanced Course, an equivalent of such deficiency.

3. Any student who has completed the work of the junior year of any of the colleges of the University, may, upon the recommendation of the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers, during the following summer session. Under ordinary conditions the requirements for the completion of the Advanced Course may be fulfilled during a second summer session, it being understood that the requirements for the completion of the Undergraduate Course are also fulfilled.

REQUIREMENTS FOR COMPLETION.—1. The satisfactory completion of an amount of work equal to at least twelve credits, in addition to the requirements prescribed for the bachelor's degree and for the Undergraduate Course for the Training of Teachers.

2. For those students making special preparation for high school teaching, the twelve credits shall be divided as follows:

Academic subject or subjects..... 8 credits.

Education 4 credits.

3. For those students making special preparation for the work

of school superintendents*and principals, the twelve unit-hours shall be divided as follows:

Education	8 credits.
Academic subject	4 credits.

4. In connection with the requirements in Education noted under (2) and (3) the student must fulfill such special requirements regarding the observation of teaching, visitation of schools and practice teaching as may be indicated by the department of Education.

5. For those students making special preparation for the work of critic teachers in normal schools, or of instructors in Education in normal schools or universities, the entire twelve credits may be taken within the Department of Education.

Special Certificate

Upon the fulfillment of the requirements indicated above, and upon the joint recommendation of "fitness" by the Department of Education and the other departments concerned, the student shall be recommended by the director of the course to the President of the University, to receive *The Certificate in the Advanced Course for the Training of Teachers*.

University Summer Session

The announcement of the summer session should be referred to for detailed information regarding the courses open to students in the Advanced Course for the Training of Teachers.

GRADUATES OF NORMAL SCHOOLS

Graduates of the advanced course of the normal schools of the state, admitted to the University, may obtain the University Teachers Certificate, or the certificate in the Advanced Course for the Training of Teachers, by fulfilling the specified requirements in their university course. Such normal school graduates, when candidates for the bachelor of arts degree must present a minimum of three University credits in education.

SPECIAL LECTURERS

In order that the Course for the Training of Teachers may be maintained and developed in close relation with the practical educational interests of the state, the University aims each year to enlist the cooperation of presidents and professors of the normal schools, superintendents, principals and others engaged in educational work as special lecturers.

THE COLLEGE OF ENGINEERING

FREDERICK E. TURNEAURE, Dean, Professor of Engineering.

ORGANIZATION OF THE COLLEGE

The College of Engineering is organized in the belief that a thorough-going fundamental training is the first essential to a successful engineer, but that this fundamental training may be best secured not alone by theoretical study, but by giving attention as well to the practical application of the principles involved. It is further a leading thought that after the fundamental principles have been mastered, a certain measure of specialization in the main lines of engineering is advisable because of the great development of engineering in recent years, and the various phases which it is rapidly assuming. It is the endeavor of the college to combine a reasonable amount of specialization during the later years of its courses with a thorough grounding in the fundamentals during the earlier portions; and in carrying out this plan, it endeavors to make the mathematical and theoretical courses strong in the earlier years, while the drawing and shop courses continue progressively from the beginning to the end. It also introduces sufficient foreign language to enable its graduates to read the professional German and French literature, and aims to give so much of a mastery of the English language as to enable its graduates to present professional subjects with ease, clearness and effectiveness.

REQUIREMENTS FOR ADMISSION TO THE COURSES LEADING TO THE B. S. DEGREE

Students are admitted either upon examination at the University or upon certificates from accredited schools, except that students from other colleges and universities and adult special

The College of Engineering Circular giving detailed information concerning the college, may be obtained upon application to the Registrar of the University.

students are admitted in accordance with the provisions stated on pages 96 and 97.

The requirements for the admission of regular students are stated fully on page 73.

Preparation in Algebra for Engineering

All students entering the College of Engineering will be tested in Algebra by class work and examination at the beginning of the first semester. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the beginning of their course*, and it is the purpose of the test to secure this by requiring a review of the subject shortly before entering the University. Students failing the test can not continue with regular Freshman mathematics, but will be required to take a review of preparatory algebra during the first semester. A special course is provided for this purpose.

In performing the fundamental operations of algebra, such as multiplication and division, the use of parentheses, the solving of numerical and literal equations of the first and second degree, the simplification of fractions and radicals, and the putting of problems into equations, it is of the first importance that the student should have distinct notions of the meaning and reasons for all that he does, and be able to state them clearly in his own language. He should be able to perform all these operations, even though somewhat complex, with rapidity, accuracy and neatness. In his preparatory studies the student is advised to solve a great many practical problems and to describe fully the reasons for the steps taken.

REQUIREMENTS FOR ADMISSION TO THE ADVANCED COURSES LEADING TO THE PROFESSIONAL DEGREE

Students entering the advanced four-year courses leading to the professional degree must present credits for at least thirty semester hours of work of college grade, taken in the College of Letters and Science of the University or in a college of recognized standing having entrance requirements similar to those of the University of Wisconsin. This college work must include a full year of each of the following studies: Mathemat-

ics, English, and French or German. The exact number of credits to be offered in these studies is not specified, it being expected that the work will follow the usual curriculum of colleges requiring a four-year high school course for admission. Students who take chemistry in their college year will substitute work in the College of Letters and Science of the University for an equivalent amount of chemistry required in the course.

STUDENT ADVISERS

In the selection and arrangement of studies, all students are under the supervision of advisers. It is the duty of the advisers to issue class cards at the opening of each semester, admitting students to their classes, to receive the regular semester reports from instructors, and special reports on deficient students, and to report to the faculty all cases requiring special action.

Reports to parents or guardians on the work of students, are sent from the Registrar's office at the end of each semester.

FEES AND EXPENSES

Tuition for residents of the State of Wisconsin.....	FREE
Tuition for non-resident students—per semester.....	\$25 00
General fee per semester.....	17 00
General fee for four weeks summer term, shop or field work	7 00
Engineering periodical fee for the year.....	1 00

A laboratory fee of \$2 per unit-hour (two hours per week of actual work) per semester is charged in all the engineering laboratories, and for the use of surveying instruments in the field. Students taking laboratory theses are charged a fee of \$5.

Students working in any of the other laboratories of the University are also required to pay a fee or to make a deposit to cover the cost of the materials and repairs to instruments used by them.

At the beginning of the freshman year, students must be prepared to meet an expenditure of about \$70 for laboratory fees, drawing instruments, text-books, and military uniform. For the second semester these expenses will not exceed \$10. For

subsequent years the fees and text-books will amount to from \$15 to \$20 per semester.

Rooms, furnished and unfurnished, can be obtained in the city at reasonable rates. The cost of board in clubs is from \$3.00 to \$3.50 a week; in private families from \$3.00 to \$4.50 a week.

EQUIPMENT

Buildings

The work of the college is carried on in four large buildings. The main building is a four-story structure built for the special use of the College of Mechanics and Engineering. It contains the offices, recitation and drawing rooms, and laboratories for work in mechanical engineering, hydraulics, and the testing of materials. A second large building of simple construction contains the main electrical laboratories and the various departments for shop instruction. A third building contains the laboratories for chemical engineering, electrical testing and photometer rooms. Laboratory work in hydraulics is provided for in a large concrete building situated on the shore of Lake Mendota.

For chemistry the engineering students go to the Chemical Building, for physics and other natural sciences to Science Hall, and for language, mathematics, and other similar work, to the literary halls of the University. In this way the students of engineering come into daily contact with the students in the other courses, to the great advantage of all classes.

Libraries

For a general account of the library facilities of the University see Index. The College of Mechanics and Engineering subscribes for about one hundred and seventy-five technical periodicals, and also purchases duplicate copies of standard engineering works of reference, one set of which, with the engineering periodicals, are kept in the engineering reading room, on the first floor of the Engineering Building, in order to facilitate the frequent use of them by the engineering students. The bound files of technical periodicals in the library are unusually complete, and additions are made every year.

Laboratories and Apparatus

The engineering laboratories are well equipped for purposes of instruction and investigation.

BACTERIOLOGICAL LABORATORIES.—For a description of these see Index.

THE BRIDGE ENGINEERING DEPARTMENT owns several autographic extensometers and a deflectometer for determining bridge stresses under moving train loads. The department also possesses a large French model of a skew arch bridge, several large size iron models of bridge joints, a good collection of stereotomy models, and a large number of photographs, drawings, and lantern slides illustrating details, erection methods, and complete structures of a great variety of design.

CHEMICAL ENGINEERING AND APPLIED ELECTROCHEMISTRY LABORATORIES.—In the Chemical Engineering Building are laboratories for instruction in chemical technology and applied electrochemistry. Two rooms are equipped for technical gas and fuel examinations, the equipment comprising all standard forms of analytical apparatus, gas and fuel calorimeters, and pyrometers. Steam stills, evaporators, centrifugals, vacuum dryers, digesters, vacuum and pressure pumps, melting, roasting, and calcining furnaces and other similar apparatus are installed for the study of chemical manufacture.

In the crushing and grinding room are various commercial types of coarse and fine crushers and disintegrators for treatment of ores and other raw materials. Magnetic, electrostatic, and other forms of separators are included in the equipment.

The applied electrochemistry equipment comprises a great variety of electrochemical appliances, a complete electroplating and refining room, battery room, two electric furnace rooms with various types of furnaces, and source of power both alternating and direct aggregating over 250 horse-power.

THE ELECTRICAL LABORATORIES comprise a dynamo laboratory, a high potential laboratory, a photometry laboratory, and a standardizing laboratory. The equipment of these laboratories is unusually complete, and the department of electrical engineering cooperates with the Wisconsin Railroad Commission in the use of its laboratories for standardizing work.

A further description of these laboratories may be found in the separate bulletin issued by the College of Engineering.

THE ENGINEERING MUSEUM contains a collection of models illustrating problems in descriptive geometry, stereotomy and kinematics, besides many models of bridges and hydraulic structures. There are also numerous industrial exhibitions of engineering interest and value.

THE HYDRAULIC LABORATORY, which occupies its own special building, is located on the shore of Lake Mendota. The facilities, therefore, are especially good for studying problems where large quantities of water under low heads are required. The university water works pumping station and pressure storage tank house which immediately adjoin the hydraulic laboratory provide a water supply under heads up to about 170 feet. The laboratory is unusually well equipped. It has a thirty-inch centrifugal pump furnishing up to 35,000 gallons per minute, five concrete measuring chambers with a total capacity of about 10,000 cubic feet, various weir boxes and weirs, pipes of different materials and sizes, Venturi, and meters of the disc and piston type, turbines, overshot and tangential wheels, pumps of various types, including two air lift pumps, hydraulic rams, and a full supply of apparatus designed for experimental purposes.

THE MACHINE SHOP affords excellent facilities for mechanical practice. It embraces a main machine room properly equipped; a carpenter shop supplied with wood-working machines; a forge room provided with forges and their equipment with blast and exhaust fan and annealing and case-hardening furnace; a foundry room whose equipment consists of a cupola, brass furnace, and core oven, with the necessary small tools, a wood-work room supplied with benches, carpenter tools, and wood turning lathes; and a pattern room furnished with the requisite tools.

MINING AND METALLURGICAL LABORATORIES.—Construction work has been begun upon the new ore-dressing, assay and metallurgical laboratories as announced last year, and it is expected that they will be completed during the spring of 1910, so that they may be in service before the end of the current academic year. Further description of these laboratories will be given in forthcoming bulletins.

PAVING MATERIAL MUSEUM.—A beginning has been made toward securing an exhibit of paving supplies and samples of both old and new pavements for use in the course on Roads and Pavements.

THE STEAM AND GAS ENGINEERING LABORATORY.—This laboratory is well equipped with a variety of steam and gas engines, specially arranged for experimental work, and for demonstration of the principles discussed in the class room. The most important of these are a fifty horse-power cross compound steam engine, and a sixty horse-power, three cylinder, vertical gas engine.

There is also installed a fifteen-ton refrigerating plant, consisting of a Corliss engine direct connected to a horizontal double-acting ammonia compressor. With the above compressor there are installed double pipe condensers and brine coolers, brine tanks, brine coils, and ventilating coils for the cooling of rooms.

This laboratory also contains a new twenty-five kilowatt steam turbine, a fifty horse-power two stage air compressor directly connected to a compound condensing engine equipped with the Meyer valve gear; also various other types of steam, gas, gasoline, and hot air engines. The laboratory is also well equipped with a large variety of smaller apparatus and appliances for fuel, gas, oil testing, etc.

Transmission dynamometers, belt testing machines, gear transmissions, friction testing machines etc. are provided for experimental work in the transmission of power.

Excellent facilities are also provided for carrying on engineering research work. Special facilities are available to graduate students who wish to pursue advanced research work.

THE SURVEYING LABORATORY.—By an agreement with the director of Washburn Observatory, the surveying laboratory shares in the free use of the extensive apparatus belonging to that observatory, including, in addition to the large equatorial telescope and the meridian circle collimators, transit micrometers, chronograph, sidereal and meantime clocks, zenith telescopes, a transit instrument of the broken type, chronometers, an altazimuth, a universal instrument of the

German type, spherometer calipers, and a complete set of meteorological instruments.

In addition to this equipment the surveying laboratory contains all the portable, astronomical, and field instruments needed for extensive triangulation, topographic, hydrographic and railroad surveys, including theodolites, altazimuth, tidal gauge, heliotropes, Kern precise-level and new U. S. C. & G. S. precise-level outfits, sounding apparatus, base-line apparatus, including a new "invar" type, current meters, transits, compasses, levels, plane-tables, telemeters, and such special instruments as plani-meters pantographs, sextants, computing machines, aneroid barometers, etc.

THE TESTING LABORATORY is supplied with a 600,000 pound hydraulic universal testing machine (designed in the laboratory) taking tension and compression specimens 10 feet and beams 20 feet long; a Riehlé torsion machine taking shafts 15 feet long and 3 inches in diameter; a 50,000 pound Johnson beam machine taking beams 18 feet long; 6 Olson and Riehlé universal machines from 10,000 to 100,000 pounds capacity; a Thurston torsion machine; a Russell impact machine; several small beam and wire machines; a refrigerator and a gas furnace for freezing and heating tests; a Smith concrete mixer, a good equipment for tests of plain and reinforced concrete, and appliances for testing road-building material.

THE CEMENT LABORATORY contains a full supply of necessary apparatus for making standard tests; baths, self-recording thermometers, Boehme hammer, complete one-thousand-pound Riehlé and Fairbanks testing machines, etc.

COURSES OF STUDY AND DEGREES

Courses Leading to the B. S. Degree

The College of Engineering offers six systematic four-year courses leading to the B. S. degree.

CIVIL ENGINEERING.

MECHANICAL ENGINEERING.

ELECTRICAL ENGINEERING.

APPLIED ELECTROCHEMISTRY.

CHEMICAL ENGINEERING.

MINING ENGINEERING.

Students who complete any of the above four-year courses are graduated with the degree of *Bachelor of Science*, the diploma containing a specific designation of the course taken

Advanced Courses Leading to the Professional Degree

Four advanced four-year courses leading to the professional degree are offered. Students are admitted to these courses on presentation of the equivalent of the freshman year in the College of Letters and Science as specified on page 108. These courses are as follows:

CIVIL ENGINEERING.

MECHANICAL ENGINEERING.

ELECTRICAL ENGINEERING.

CHEMICAL ENGINEERING.

Graduates of these advanced courses will receive the professional degrees of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, and *Chemical Engineer*.

Graduate Work

The graduate work in the College of Engineering is a part of the Graduate School of the University and is in charge of an Administrative Committee. Excellent opportunities are offered in the various departments for advanced theoretical work and for research. A special fund is available to be devoted exclusively to experimental work in the engineering laboratories.

The degrees of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, and *Chemical Engineer* are conferred as second degrees upon Bachelors of Science in the Civil, Mechanical, Electrical, and Chemical Engineering courses respectively, (1) who pursue advanced professional study at the University for one year, and present a satisfactory project or thesis; or (2) who present suitable evidence of three years of professional work, of which one must be in a position of responsibility, and present a satisfactory thesis.

The degrees of *Master of Science* and *Doctor of Philosophy* are conferred upon graduates of the engineering courses under the same requirements as apply to graduates of the College of Letters and Science. For a statement of these requirements see Index under Degrees.

Six-Year Courses Leading to the Degree of A. B. and an Engineering Degree

By properly arranging their elective studies students in the College of Letters and Science secure their *B. A.* degree at the end of four years, and the *B. S.* degree in engineering in two additional years. These students will register in the College of Letters and Science during the first four years of residence. They will elect during their collegiate course the studies of the first two years of the engineering course which they plan to pursue later, with the exception of shop work. This may be taken as an extra study, or may be taken during vacation time. Upon receiving the *B. A.* degree they will be admitted as juniors in the College of Engineering.

By utilizing the opportunities offered in the summer session students may in most cases secure the professional degree at the end of the sixth year.

Modern Language Requirements in all Engineering Courses *

1. When the entrance language requirement is fulfilled (see Index): There are required 8 semester hours in French or German. (When French or German is offered for entrance, then the same language should preferably be continued in the University.)

2. When the entrance language requirement is not fulfilled: Students who present the required number of units for entrance and who are graduates of accredited schools will be admitted without a preparation in language, but subject to a condition in the same. In this case there are required 16 semester hours in French or German. If French be taken and an average mark of 85, or over, be made in the first 8 hours, then the remaining 8 hours may be taken in another language.

Summer Vacation Work

All engineering students are required to take summer vacation work in addition to the work of the four academic years. For civil engineering students this work consists of four

* For satisfactory reasons, the Faculty will permit the substitution of Spanish for French or German.

weeks field work, following either the sophomore or junior year. For mechanical, electrical and chemical engineers four weeks shop work is required. The mining engineers are required to take six weeks surveying, following either the freshman or sophomore year, and class work in mining and geology, following the junior year.

Inspection Trips

An inspection trip is made by the junior class during the week of the Easter recess. In this tour the great manufacturing establishments and other important private and public engineering works in Chicago, Milwaukee, and elsewhere are visited and written reports submitted. These tours are made under the guidance of the professors, and are required of all juniors, unless excused by the faculty. Students who may be excused are required to present a report at the opening of the senior year on assigned work of a similar character.

Non-Resident Lecturers

It is the practice of the college to invite each year a number of prominent engineers to deliver one or more lectures before the student body on various phases of engineering practice. The purpose of these lectures is to enliven the interest of the student and to broaden his horizon rather than to give specific instruction.

OUTLINE OF ENGINEERING COURSES*

CIVIL ENGINEERING COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
German (2E) or French (5E).....	4	German (2E) or French (5E).....	4
English (1).....	3	English (1).....	3
Mathematics (101) (Algebra).....	5	Mathematics (102) (Trigonometry and Analytical Geometry).....	5
Chemistry (2).....	3	Chemistry (2).....	3
Drawing (1).....	3	Drawing (2).....	3
Topographical Engineering (2)....	1	Topographical Engineering (2)....	1

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	5	Physics (101).....	5
Topographical Engineering (1) (3).....	5	Mechanics (1) (2).....	5
Drawing (3).....	3	Topographical Engineering (1) (4).....	4
		Railway Engineering (1).....	2

† Topographical Engineering (6).... 4 weeks.

Junior Year

Mechanics (3) (4) (5).....	7	Mechanics (5).....	2
Structural Engineering (1).....	2	Railway Engineering (3) (10).....	4
Railway Engineering (2a) (2b)....	5	Structural Engineering (5a) (7a)..	7
Hydraulic Engineering (1).....	3	Steam and Gas Engineering (27)..	1
a { Steam and Gas Engineering (7)	2	Hydraulic Engineering (10).....	2
{ Steam and Gas Engineering		Railway Engineering (6).....	2
(27).....	1	a { Astronomy (6) or Topographi-	
or # b { Chemistry (11).....	3	cal Engineering (5).....	3
		or # b { Chemistry (14).....	5

Senior Year

Structural Engineering (4) (7b)....	8	Railway Engineering (11).....	1
Hydraulic Engineering (11).....	3	Hydraulic Engineering (14).....	1
Electrical Engineering (5) (6)....	3	Electrical Engineering (5) (18)...	3
§ Electives.....	6	Contracts and Specifications (1)..	2
		§ Thesis and Elective.....	11

NOTE:—In reckoning the hours per week required for the various studies, two hours of laboratory, drawing room, field, or shop work count as one hour of class-room work, which is the unit in this outline.

† May be taken at the end of either the sophomore or junior year.

* Option b should be selected by students specializing in sanitary engineering.

§ Bacteriology (1) and (8), 6 unit hours to be taken by students specializing in sanitary engineering.

ADVANCED CIVIL ENGINEERING COURSE

LEADING TO THE C. E. DEGREE.

The equivalent of the freshman year in the College of Letters and Science is required for admission to this course. See p. 108.

First Year

FIRST SEMESTER

Subject and course number	Credits
Mathematics (02) (Trigonometry and Analytical Geometry).....	5
Chemistry (1).....	5
Drawing (1).....	3
Physics (101).....	5
Topographical Engineering (2)....	1

SECOND SEMESTER

Subject and course number	Credits
Mathematics (104).....	5
Chemistry (1).....	5
Drawing (2).....	3
Physics (101).....	5
Topographical Engineering (2)...	1

Second Year

Mathematics (105).....	4	Railway Engineering (1).....	2
Mechanics (1) (2).....	5	Mechanics (3) (4) (5).....	7
Drawing (3).....	3	Structural Engineering (5a).....	4
Topographical Engineering (1) (3).....	5	Topographical Engineering (1) (4).....	4
Steam Engineering (7).....	2	Steam and Gas Engineering (27).....	2
Steam and Gas Engineering (27).....	1		
Topographical Engineering (6)....	4 weeks		

Third Year

Hydraulic Engineering (1) (2)....	3	Hydraulic Engineering (10).....	2
Railway Engineering (2a) (2b)....	5	Railway Engineering (3) (6) (10).....	6
Economics (1).....	3	Economics (3).....	3
Structural Engineering (1).....	2	Structural Engineering (7a).....	3
Electrical Engineering (5) (6)....	3	Electrical Engineering (18).....	3
Mechanics (5).....	2	Applied Electromagnetism (5).....	1
Electives.....	2	Astronomy (6) or Topographical Engineering (5).....	3

Fourth Year

Structural Engineering (4) (7b)....	8	Railway Engineering (11).....	1
Hydraulic Engineering (11).....	3	Hydraulic Engineering (14).....	1
Elective and Thesis.....	5	Contracts and Specifications (1).....	2
Free Electives*.....	3	Elective and Thesis.....	10
		Free Electives*.....	9

*To be taken preferably in the College of Letters and Science.

MECHANICAL ENGINEERING COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
German (2E), or French (5E).....	4	German (2E), or French (5E).....	4
English (1).....	3	English (1).....	3
Mathematics (101).....	5	Mathematics (102).....	5
Drawing (1).....	3	Drawing (2).....	3
Chemistry (2).....	3	Chemistry (2).....	3
Shop.....	1	Shop.....	1

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	6	Physics (101).....	5
Drawing (3).....	3	Mechanics (1) (2).....	5
Shop.....	5	Machine Design (1).....	4

Junior Year

Mechanics (3) (4) (5).....	7	Mechanics (5).....	1
Machine Design (3).....	5	Machine Design (3).....	5
Steam and Gas Engineering (21).....	1	Steam and Gas Engineering (22).....	2
Steam and Gas Engineering (1).....	5	Steam and Gas Engineering (2).....	4
Shop.....	2	Shop.....	3
		Hydraulic Engineering (1).....	3
		Elective.....	2 or 3

Senior Year

Steam and Gas Engineering (5).....	2	Steam and Gas Engineering (5).....	2
Commercial Engineering (1).....	3	Commercial Engineering (2).....	2
Electrical Engineering (3) (5).....	5	Electrical Engineering (15) (17).....	5
Steam and Gas Engineering (23).....	2	Steam and Gas Engineering (24).....	1
Hydraulic Engineering (4).....	3	Contracts (1).....	2
Elective and Thesis.....	5	Elective and Thesis.....	8

There is also required four weeks summer shop work which may be taken during any vacation period.

ADVANCED MECHANICAL ENGINEERING COURSE

LEADING TO THE M. E. DEGREE

The equivalent of the freshman year in the College of Letters and Science is required for admission to this course. See p. 108.

First Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
Mathematics (102).....	5	Mathematics (104).....	5
Chemistry (1).....	5	Chemistry (1).....	5
Drawing (1).....	3	Drawing (2).....	3
Physics (101).....	5	Physics (101).....	5
Shop.....	1	Shop.....	1

Second Year

Mathematics (105).....	4	Machine Design (1).....	4
Mechanics (1) (2).....	5	Mechanics (3) (4) (5).....	7
Drawing (3).....	3	Shop.....	3
Shop.....	4	Elective.....	*5
Topographical Engineering (8)....	3		

Third Year

Machine Design (3).....	5	Machine Design (3).....	5
Steam and Gas Engineering (1)...	5	Steam and Gas Engineering (2)...	3
Shop.....	3	Hydraulic Engineering (1).....	3
Mechanics (5).....	1	Electrical Engineering (15) (17)...	5
Steam and Gas Engineering (21)...	1	Steam and Gas Engineering (22)...	2
Electrical Engineering.....(3) (5)	5	Elective.....	2

Fourth Year

Steam and Gas Engineering (5)...	2	Steam and Gas Engineering (5)...	2
Commercial Engineering (1)...	3	Commercial Engineering (2)...	2
Economics (1).....	3	Economics (1).....	3
Hydraulic Engineering (4).....	3	Contracts.....	2
Steam and Gas Engineering (23)...	2	Steam and Gas Engineering (24)...	1
Elective and Thesis.....	4	Elective and Thesis.....	5
Free Elective.....	3	Free Elective.....	3

There is required four weeks summer shop work which may be taken during any vacation period.

* Mathematics 110, three hours, recommended.

ELECTRICAL ENGINEERING COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
German (2E), or French (5E).....	4	German (2E), or French (5E).....	4
English (1).....	3	English (1).....	3
Mathematics (101) (Algebra).....	5	Mathematics (102) (Trigonometry and Analytical Geometry).....	5
Drawing (1).....	3	Drawing (2).....	3
Chemistry (2).....	3	Chemistry (2).....	3
Shop.....	1	Shop.....	1

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	5	Physics (161).....	5
Machine Design (1).....	4	Mechanics (1) (2).....	5
Chemistry (12).....	3	Chemistry or Surveying.....	2
Shop.....	2	Drawing (3).....	3

Vacation work, 4 hours.

Junior Year

Mechanics (3) (4) (5).....	7	Steam and Gas Engineering (22).....	2
Physics (104) or Mathematics (110).....	3	Electrical Engineering (1) (2).....	4
Steam Engineering (6).....	3	Steam Engineering (6).....	3
Machine Design (2).....	3	Machine Design (2).....	2
Electrical Engineering (1).....	4	Electrical Engineering (11).....	3
		Hydraulic Engineering (1).....	3
		Elective.....	3

Senior Year

Hydraulic Engineering (4).....	3	Contracts.....	2
Steam and Gas Engineering (23).....	2	Electrical Engineering (12) (13).....	5
Thesis.....	1	Thesis and Elective.....	8
Elective.....	2	Electrical Engineering (21).....	5
Electrical Engineering (12) (13).....	5		
Electrical Engineering (2) (4).....	2		
Electrical Engineering (21).....	5		

Electrical Engineering 25, is required but may be taken either semester.

ADVANCED ELECTRICAL ENGINEERING COURSE

LEADING TO THE E. E. DEGREE

The equivalent of the freshman year in the College of Letters and Science is required for admission to this course. See p. 108.

First Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
Mathematics (102).....	5	Mathematics (104).....	5
Chemistry (1).....	5	Chemistry (1).....	5
Drawing (1).....	3	Drawing (2).....	3
Physics (101).....	5	Physics (101).....	5
Shop.....	1	Shop.....	1

Second Year

Mathematics (105) (110).....	7	Drawing (3).....	
Mechanics (1) (2).....	5	Mechanics (3) (4) (5).....	
Machine Design (1).....	4	Topographical Engineering (8).....	
Chemistry (12).....	3	Mathematics (110).....	
		Shop.....	

Vacation work, 4 hours.

Third Year

Electrical Engineering (1).....	4	Electrical Engineering (1) (2).....	4
Steam Engineering (1) (2).....	5	Steam Engineering (1) (2).....	3
Machine Design (2).....	3	Machine Design (3).....	2
Mechanics (5).....	1	Electrical Engineering (11).....	3
Economics (1).....	3	Hydraulic Engineering (1).....	3
Physics (104).....	3	Steam and Gas Engineering (22).....	2
		Economics.....	3

Fourth Year

Electrical Engineering (2) (4).....	2	Electrical Engineering (12) (13)...	5
Electrical Engineering (12) (13)...	5	Contracts.....	2
Steam and Gas Engineering (23)...	2	Electrical Engineering (21).....	5
Hydraulic Engineering (4).....	3	Thesis and Elective.....	8
Electrical Engineering (21).....	5		
Thesis and Elective.....	3		

Electrical Engineering 25, is required but may be taken either semester.

CHEMICAL ENGINEERING COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER			SECOND SEMESTER		
Subject and course number	Credits		Subject and course number	Credits	
German (2E), or French (5E).....	4		German (2E), or French (5E).....	4	
English (1).....	3		English (1).....	3	
Mathematics (101) (Algebra).....	5		Mathematics (102) (Trigonometry and Analytical Geometry).....	5	
Drawing (1).....	3		Drawing (2).....	3	
Chemistry (2).....	3		Chemistry (2).....	3	
Shop	1		Shop	1	

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	5	Physics (101).....	5
Drawing (3).....	3	Mechanics (1) (2).....	5
Chemistry (11).....	5	Machine Design (1).....	4

Summer course in chemistry or its equivalent in industrial work.

Junior Year

Mechanics (3) (4) (5).....	7	Mechanics (5)	1
Steam and Gas Engineering (6)...	3	Steam and Gas Engineering (6)...	3
Machine Design (2).....	3	Steam and Gas Engineering (25)...	2
Chemistry (20).....	5	Physical Chemistry (30).....	4
Physical Chemistry (30).....	2	Electrical Engineering.....	2
		Chemical Technology (11).....	2
		Chemical Technology (12).....	2
		Elective.....	4

Inspection tour through industrial establishments.

Senior Year

Electrical Engineering (5).....	2	Contracts and Specifications (1)...	2
Steam and Gas Engineering (26)...	1	Chemical Technology (13a) (13b)	
Chemical Technology (15) (16) (18)	6	(14) (16).....	7
Thesis and Electives.....	11	Thesis and Electives.....	9
		Machine Design (4).....	2

Courses from which electives may be chosen.

Applied Electrochemistry.
Chemical Technology.
Advanced Physical Chemistry.
Advanced Inorganic Chemistry.
Advanced Organic Chemistry.
Geology.
Mineralogy.

Assaying.
Bacteriology.
Steam Engineering.
Structural Engineering.
Hydraulic Engineering.
Electrical Engineering.
Mining Engineering.
Shop (14).

ADVANCED CHEMICAL ENGINEERING COURSE

LEADING TO THE CH. E. DEGREE

The equivalent of the freshman year in the College of Letters and Science is required for admission to this course. See p. 108.

First Year

FIRST SEMESTER		SECOND SEMESTER	
Subject and course number	Credits	Subject and course number	Credits
Mathematics (102).....	5	Mathematics (104).....	5
Drawing (1).....	3	Drawing (2).....	3
Chemistry (1).....	5	Chemistry (1).....	5
Physics (101).....	5	Physics (101).....	5
Shop.....	1	Shop.....	1

Second Year

Mathematics (105).....	4	Drawing (3).....	3
Machine Design (1).....	3	Mechanics (3) (4) (5).....	7
Chemistry (20).....	5	Chemical Technology (11).....	2
Mechanics (1) (2).....	5	Electrical Engineering (6).....	2
Chemistry (11).....	3	Elective.....	5

Summer course in chemistry, or its equivalent in industrial work.

Third Year

Physical Chemistry (30).....	2	Physical Chemistry (30).....	4
Mechanics (5).....	1	Steam and Gas Engineering (6).....	3
Steam and Gas Engineering (6).....	3	Steam and Gas Engineering (25).....	2
Alternating Currents (8).....	2	Machine Design (4).....	3
Electrical Engineering (5).....	2	Economics (1).....	2
Machine Design (2).....	3	Chemical Technology (12).....	2
Economics (1).....	3	Elective.....	3
Elective.....	4		

Inspection tour through industrial establishments.

Fourth Year

Steam and Gas Engineering (26).....	2	Chemical Technology (13a) (13b) (14) (16).....	7
Chemical Technology (15) (16) (18).....	8	Contracts (1).....	2
Applied Electrochemistry (1).....	5	Elective and Thesis.....	10
Structural Engineering (11).....	2		
Elective and Thesis.....	3		

APPLIED ELECTROCHEMISTRY COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER			SECOND SEMESTER		
Subject and course number	Credits		Subject and course number	Credits	
German (2E), or French (5E).....	4		German (2E), or French (5E).....	4	
English (1).....	3		English (1).....	3	
Mathematics (101) (Algebra).....	5		Mathematics (102) (Trigonometry and Analytical Geometry).....	5	
Drawing (1).....	3		Drawing (2).....	3	
Chemistry (2).....	3		Chemistry (2).....	3	
Shop.....	1		Shop.....	1	

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	5	Physics (101).....	5
Drawing (3).....	3	Mechanics (1) (2).....	5
Chemistry (11).....	5	Machine Design (1).....	4

Summer course in chemistry, or its equivalent in industrial work.

Junior Year

Mechanics (3) (4) (5).....	7	Mechanics (5).....	1
Electrical Engineering (1).....	4	Electrical Engineering (1) (2).....	4
Chemistry (20) (31).....	9	Chemistry (31).....	4
		Electrical Engineering (15).....	2
		Chemical Technology (12).....	2
		Electrical Engineering (17).....	3
		Elective.....	4

Inspection tour through industrial establishments.

Senior Year

Applied Electrochemistry (1).....	5	Applied Electrochemistry (2) (6).....	5
Chemical Technology (15) (16).....	4	Chemical Technology (11) (14).....	4
Steam Engineering (7).....	2	Contracts and Specifications (1).....	2
Steam and Gas Engineering (27).....	2	Thesis and Elective.....	9
Thesis and Elective.....	7		

MINING ENGINEERING COURSE

LEADING TO THE B. S. DEGREE

Freshman Year

FIRST SEMESTER			SECOND SEMESTER		
Subject and course number	Credits		Subject and course number	Credits	
German (2E), French (5E), or Spanish (2EC).....	4		German (2E), French (5E) or Spanish (2EC).....	4	
English (1).....	3		English (1).....	3	
Mathematics (101).....	5		Mathematics (102).....	5	
Mechanical Drawing (1).....	3		Mechanical Drawing (2).....	3	
Topographical Engineering (2)...	1		Topographical Engineering (2)...	1	
Chemistry (2).....	3		Chemistry (2).....	3	

Summer School Surveying, six weeks.

Sophomore Year

Mathematics (104).....	5	Mathematics (105).....	4
Physics (101).....	4	Physics (101).....	4
Chemistry (11).....	5	Mining (20).....	3
Geology (6).....	5	Geology (6).....	5
		Mechanical Drawing (3).....	3

Junior Year

Mechanics (1) (2a).....	5	Mechanics (2) (3) (4).....	5
Steam and Gas Engineering (6) ..	3	Steam and Gas Engineering (11) ..	2
Steam and Gas Engineering (27) ..	2	Hydraulics (1).....	3
Geology (1).....	5	Geology (2).....	5
Mining (1).....	3	Mining (2).....	3
Railway Engineering (4).....	2	Electrical Engineering (6).....	2

Summer work in mining and geology, six weeks.

Senior Year

Mechanics (5).....	2	Structural Engineering (9).....	2
Electrical Engineering (5).....	2	Electrical Engineering (18).....	3
Geology (11).....	3	Geology (11).....	3
Geology (7a).....	3	Contracts.....	2
Mining (3, 4, 5), and Thesis.....	7	Mining (5) (7), and Thesis.....	7
Mining (22).....	3	Mining (23).....	5

COMBINATION ENGINEERING AND COMMERCE COURSE

By electing the following group of studies in economics, students pursuing the five-year course may get all the essential studies of the Course in Commerce, together with a full engineering course.

First Year: Physiography and Physical Geography, 3 credits.

Second Year: Elementary Economics, 3 credits; Commercial Geography, 3 credits for each of two semesters.

Third Year: Money and Banking and Transportation, 3 credits; Commercial Law, 3 credits.

Fourth Year: Group in Banking and Finance, Transportation, or the Manufacturing Industries, 3 credits; Business Administration, 2 credits.

Fifth Year: Business Administration, 2 credits; Group and Thesis, 4 credits (if the thesis is taken in Commerce).

Elective for Students in the College of Letters and Science

Students who plan to graduate in engineering, after taking a degree in the College of Letters and Science, should aim to make the following elections during the undergraduate course, in order that the engineering course may be completed in two additional years:

Mathematics 101 to 105; Physics 1 or 101; Chemistry 1 or 2; Mechanical Drawing, 1, 2, and 3; Topographical Engineering 2, 3, and 4, or Machine Design 1; Applied Mechanics 1, 2.

It is well also to elect some or all of the freshman and sophomore shop work, as an extra study.

Graduation in More than One of the Engineering Courses

Graduates in any of the engineering courses may graduate in any other engineering course after one year of additional study. Students who contemplate doing this should, however, make their elections, especially in the senior year, with this end in view.

DEPARTMENTS OF INSTRUCTION

The unit of reckoning is one hour of class-room work per week, making a one-hour study. Two hours of drawing, laboratory, field, or shop work (which requires no outside preparation) count as one hour of recitation.

COURSES GIVEN IN THE COLLEGE OF LETTERS AND SCIENCE

ASTRONOMY

For detailed description of courses see Astronomy, College of Letters and Science.

PROFESSOR COMSTOCK.

6. Astronomical Practice. Theory and use of the simpler instruments used in astronomical and geodetic field work. Determination of time, latitude, and the direction of the meridian, together with drill in numerical computations. *Second semester; until May 1, twice a week at an hour to be arranged; after May 1, three evening meetings a week.*

Elective for juniors in Civil Engineering.

7. Advanced Field Astronomy. Spherical astronomy, the method of least squares, theory and practice of the more refined methods for the determination of time, latitude, and azimuth. *Throughout the year; two credits.*

Open to election by students who have completed course 6.

BACTERIOLOGY AND HYGIENE

For detailed information regarding these courses, see Department of Bacteriology, College of Letters and Science.

Primarily for Undergraduates

1. General Bacteriology.

For Undergraduates and Graduates

8. Biology and Chemistry of Water Supplies.

CHEMISTRY

For detailed information regarding these courses, see Department of Chemistry, College of Letters and Science.

2. General Chemistry and Quantitative Analysis. For freshmen.
11. Quantitative Analysis. Required of sophomores in electrical, electrochemical, chemical and mining engineering.
12. Quantitative Analysis.
13. Gas Analysis.
14. Water Analysis.
- 14a. Water Analysis. For engineering students.
16. Industrial Analysis.
17. Chemical Preparations.
20. Organic Chemistry. Lectures and laboratory work.
24. Advanced Organic Chemistry.
30. Physical Chemistry.
31. Electrochemistry.
32. Thermal Chemistry.
35. Advanced Physical Chemistry.
37. Research Work in Physical Chemistry.
51. Advanced Inorganic Chemistry.

ENGLISH

See English, College of Letters and Science.

1. Freshman English.

FRENCH

See French, College of Letters and Science.

- 5E. Elementary French for Engineers.

GEOLOGY

See Geology, College of Letters and Science.

1. General Geology.
2. Applied Geology.
- 2a. Short Course in Geology.
3. Short Course in Geography.
4. Physiography and Geography.
- 4a. Physical Geography for Commerce Students.
5. Regional Geography.

6. General Mineralogy.
7. Short Course in Mineralogy.
- 7a. Short Course in Petrology.
8. Petrology.
9. Advanced Physiography.
10. The Teaching of Physical Geography.
11. Economic Geology.
12. Historical Geology.
14. Principles of Structural Geology.
15. Metamorphism.
16. Metamorphic Laboratory.
17. Principles of Pre-Cambrian Geology.
18. Lake Superior Geology.
19. Petrology of Lake Superior Rocks.
20. Advanced Mineralogy.
21. Paleontology.
22. Research Work for Graduates.
23. Geological Seminary.
24. Advanced map study.
25. Field work for Advanced Students.

GERMAN

See German, College of Letters and Science.

2E. *First semester*: Review of grammar.

Second semester: One drama and critical prose.

MATHEMATICS

Engineering Mathematics

PROFESSOR SLICHTER; ASSOCIATE PROFESSOR MASON; DR. BUCHANAN, DR. BURGESS, MR. CHANEY, DR. DRESDEN, DR. WOLFF, MR. GRIMES, MR. MOOTS, MR. MOULTON.

Note: All the following courses, except 110 and 201 are repeated each semester.

101. Algebra, Trigonometry, and Graphic Methods. This course includes a variety of work in algebra, trigonometry, and analytic geometry, combined with drill in computation methods. *First semester*; M., Tu., W., Th., F. Required of freshmen in engineering.

102. Analytical Geometry and Trigonometry. In this course trigonometry is completed and further work in plane and solid analytic geometry is given. *Second semester; M., Tu., W., Th., F.* Required of freshmen in engineering.
104. Calculus. Differential and Integral Calculus. For all courses. *First semester; M., Tu., W., Th., F.*
105. Calculus. Continuation of 104 for all courses. Elementary work in differential equations is given in this course. *Second semester; M., Tu., W., Th.*
110. Higher Mathematics. Differential Equations, Definite Integrals, Fourier Series, and other subjects of immediate importance to engineering students are studied in this course. Elective to juniors, seniors, and graduate students. *Throughout the year; three credits.*
201. Elementary Practical Mathematics. A combined course in statics and trigonometry. Required of sophomores in agriculture. *Second semester; three credits.* Mr. WOLFF.

METEOROLOGY

1. General Meteorology. First semester.
2. Climates of the United States. (Omitted 1910-11.)
4. Climates of the World. (Omitted 1911-12.)

For details and other courses in Meteorology see announcements of the Department in the College of Letters and Science.

PHYSICS

See Physics, College of Letters and Science.

101. General Lectures and Introductory Laboratory Practice. Required of sophomores in engineering.
104. Laboratory Course in Electrical and Magnetic Measurements.
105. Advanced Electrical Measurements.
 7. High Temperature Measurements.
 9. Thesis.

SPANISH

See Spanish, College of Letters and Science.

- 2EC. Elementary Spanish.

Courses 7C and 8C (see Index under French) are also open to students in engineering.

COURSES GIVEN IN TECHNICAL DEPARTMENTS

CHEMICAL ENGINEERING

Applied Electrochemistry and Electrometallurgy

PROFESSORS BURGESS, DR. WATTS; MR. ASTON.

1. Electrolytic Phenomena, and their application in the electro-deposition of metal for plating, electrotyping and refining, and in electrochemical generation and storage of electrical energy. Class-room and laboratory instruction. Prerequisite, courses in chemistry. *First semester; three lectures and four hours in the laboratory. Five credits.* Mr. WATTS.

Required of seniors in Applied Electrochemistry. Open to seniors and graduates.

2. Industrial Applications of Electrochemistry. A study of the various electrochemical and electrothermal products and processes which have become of technical importance, dealing especially with the electric furnace. *Second semester; one lecture and four hours in the furnace room. 3 credits.* Mr. WATTS, Mr. ASTON.

Required of seniors in Applied Electrochemistry. Open to all students who have completed course 1.

3. Laboratory Work. Lines of experimental investigation in Electrochemistry assigned by instructors, together with occasional conferences and written dissertations. *Throughout the year; three or five times a week.* Mr. BURGESS, Mr. WATTS, Mr. KOWALKE, Mr. ASTON.

Elective for students who have completed courses 1 and 2 and Chemistry 31.

4. Short Course, dealing with principles of electrochemistry and their various industrial applications. *First semester; one lecture and two hours in laboratory; two credits.* Open to juniors and seniors. Mr. BURGESS, Mr. WATTS.
6. Batteries, Construction, testing and operation of primary and storage cells. Open to all juniors and seniors. *Second semester; one recitation and one laboratory period a week.* Mr. WATTS.

Chemical Technology

PROFESSOR BURGESS; MR. KOWALKE, MR. ASTON.

11. Chemical Machinery and Appliances. Crushing, grinding, separation by the wet and dry methods, filtration, distillation, evaporation, drying, and refrigeration. *Second semester; two credits.* Mr. BURGESS.
12. Technical Fuel, Gas, and Oil Analysis. Laboratory instruction in the calorimetry and technical analysis of fuels, illuminating and fuel gases and oils, products of combustion, etc. *First or second semester; two credits each.* Prerequisite, chemistry (2) and (11). Mr. KOWALKE.
- 12a. Short laboratory course for mechanical and electrical engineers. *Either semester, one credit.* Mr. KOWALKE.
13. Manufacture and Distribution of Gas.
- 13a. Lectures on municipal gas manufacture and distribution. *Second semester; two credits.*
- 13b. Lectures on the chemistry of power and fuel gas manufacture and distribution. *Second semester; one credit.* Prerequisite, chemistry (2). Mr. KOWALKE.
14. Chemical Manufacture. Laboratory practice co-ordinate with course 11. *Second semester; two credits.* Mr. KOWALKE, Mr. BURGESS.
15. Industrial Chemistry. Class-room work relating to more important chemical industries. *First semester; two credits.* Prerequisite, chemistry (2). Mr. BURGESS.
16. Applied Thermal Chemistry. Chemical and metallurgical processes from the standpoint of the heat energy involved. *Throughout the year. Two credits per semester.* Prerequisite, chemistry (2), (11). Mr. KOWALKE.
17. Technical Pyrometry. Laboratory instruction in technical pyrometry. Prerequisite, chemistry (2), physics 101. *First semester; two credits. Second semester; one or more credits.* Mr. KOWALKE.
18. Metallurgy of Iron and Steel. Ores, fuels and refractory materials. The manufacture of iron and steel. Rolling mill and foundry practice. Properties of special steels. Required of seniors in chemical engineering. Elective for others. Prerequisite, general physics and chemistry. *First semester; 2 credits.* Mr. ASTON, Mr. BURGESS.

19. Metallography. Laboratory work in the microscopic examination of metals and alloys with occasional lectures on the effect of heat and mechanical treatment on the structure. Prerequisite, general chemistry and physics. *Either semester; two or more credits.* Mr. ASTON, Mr. BURGESS.
20. Constitution of Alloys. Theory of the solidification of alloys based on the solubility relations. Freezing point curves and the application of the phase rule. Supplementary laboratory work in the microscopic examination of metals and alloys. Prerequisite, general chemistry and physics. *Second semester; two or more credits.* Mr. ASTON.
21. Laboratory Work in Chemical Technology. Experimental investigation on lines assigned by instructors, together with conferences and written reports. This work follows, and is based upon preparation offered in courses in chemical technology 13, 14, 16, 17, 18, 19, 20. Mr. BURGESS, Mr. KOWALKE, Mr. ASTON.

COMMERCIAL MECHANICAL ENGINEERING

PROFESSORS MACK, THOMAS; ASSOCIATE PROFESSOR THORKELSON;
ASSISTANT PROFESSOR VOSSKUEHLER; SUPERINTENDENT STEEN.

1. A study of the commercial side of mechanical engineering including; patent practice, and application of patent record research to engineering; the principal factors controlling costs, methods of determining the depreciation of machinery and industrial plants, inventories and valuations of existing properties. A series of lectures is given by Professor GILMAN on corporate organization and cost keeping. *First semester; three credits.*
2. A study of the principles underlying the selection of power units, including load curves, fixed and operating charges, etc., accompanied by lectures on power plant buildings, design and estimates. Each student is required to prepare complete designs and estimates in the drawing room for a small direct current power plant. A course of lectures is also given on shop equipment and layout for manufac-

turing a given product in a certain quantity. Each student makes a layout of the machinery for a typical plant. These lectures include shop management, methods of remunerating labor and the effects upon the cost of production. *Second semester; two credits.*

DRAWING

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR; MR. ORTH, MR. WOOD, MR. IVES, MR. BERRY.

1. Elements of Drawing. Working drawings; Third angle projection. Lettering, Tracing, and Blue Printing. *First semester; three two-hour drawing periods weekly; three credits.* Mr. PHILLIPS, Mr. ORTH, Mr. WOOD and Mr. IVES. Required of freshmen in engineering.
2. Elements of Drawing. Working drawings; Lettering and Sketching. Isometric and Cabinet drawing. *Second semester; three two-hour drawing periods weekly; three credits.* Mr. PHILLIPS, Mr. ORTH, Mr. WOOD and Mr. IVES. Required of freshmen in engineering.
3. Descriptive Geometry. Problems relating to the point, line and plane. The generation and classification of lines and surfaces; tangent planes to surfaces; plane sections, intersections and developments. Phillips' and Millar's *Descriptive Geometry*. Repeated each semester. One recitation, one lecture and two two-hour drawing periods weekly; three credits. Mr. MILLAR and Mr. BERRY. Required of sophomores in engineering.
4. Freehand Lettering. A continuation of the lettering work in courses 1 and 2. *Second semester; two one-hour periods weekly; one credit.* Mr. BERRY. Elective for engineering students.
5. Perspective. Freehand sketching of machine parts in approximate perspective, involving perspectives of circles; common geometric solids; plane sections and intersections of surfaces. *Second semester; two two-hour drawing periods weekly; two credits.* Mr. ORTH. Elective for engineering students.

ELECTRICAL ENGINEERING

PROFESSOR BEEBE; ASSOCIATE PROFESSOR BENNETT; ASSISTANT PROFESSORS SHUSTER, WATSON; MR. BLAKE, MR. DISQUE, MR. HIGSON, MR. HOVEY, MR. JOHNSON, MR. KARTAK, MR. PRICE, MR. SANFORD, MR. SMITH.

1. Electromagnets and Dynamos. A discussion of the simple forms of electromagnets; the development of the laws of magnetization by electric currents; the laws of simple magnetic circuits and the winding of electromagnets; the practical design, construction, management and testing of dynamos. *Throughout the year. First semester; four credits. Second semester; two credits.* Mr. WATSON, Mr. SMITH.
2. Testing Direct-Current Dynamos. Laboratory work with generators, motors, and accessory apparatus. For undergraduates. *Throughout the year.* Mr. PRICE and laboratory instructors.
3. Electrical Machinery and Appliances. A short course in the theory, construction, management and testing of direct-current generators, motors and sundry appliances. *First semester; three credits.* Mr. BEEBE.
4. Design and Construction of Large Direct-Current Dynamos. This course includes the working out of complete designs. *First semester; one credit.* Mr. WATSON, Mr. SMITH.
5. Testing Direct-Current Machinery. A short laboratory course primarily for mechanical and civil engineers. *First semester.* Mr. PRICE and laboratory instructors.
6. Elements of Electrical Engineering. A short course dealing with direct current machinery and systems. *Repeated each semester; two credits.* Mr. SHUSTER, Mr. SANFORD.
11. An introductory course dealing with the fundamental laws of alternating currents. *Second semester; three credits.* Mr. WATSON.
12. Testing Alternating Current Machinery and Appliances. The testing and operation in the laboratory of alternating current generators, motors, transformers, meters and other appliances. *Throughout the year; two credits.* Mr. PRICE and laboratory instructors.

13. Alternating Current Machinery. A course dealing with the characteristics and operation of alternating-current generators, motors and transformers. *Throughout the year; three credits.* Prerequisite, course 11. Mr. BEEBE and Mr. DISQUE.
14. Alternating Current Laboratory work. An advanced course. *First semester; two credits.* Mr. PRICE.
15. Alternating Current Laboratory. A short course, primarily for mechanical engineers. *Second semester; two credits.* Mr. PRICE and laboratory instructors.
16. Alternating Currents. An advanced course dealing with the properties of alternating-current circuits and machinery. *Three credits.* Mr. BENNETT.
17. Elementary Applied Alternating Currents. A short course in the theory, construction, management, and testing of alternating current machinery and appliances. *Second semester; three credits.* Mr. DISQUE.
Prerequisite Electrical Engineering 3 or 6.
18. Elements of Electrical Engineering. A short course dealing with alternating current machinery and systems. Prerequisite Electrical Engineering 3 or 6. *Repeated each semester; two credits.* Mr. SHUSTER and Mr. SANFORD.
21. A combined course in electrical applications is offered including the following subjects:
 - a. Illumination and photometry.
 - b. Central stations.
 - c. Transmission and distribution.
 - d. Insulation.
 - e. Electrochemistry.
 - f. Telegraphy and telephony.
 - g. Electric railways.
 - h. Industrial applications.

The course is required of senior electrical engineers and aims to present the fundamental principles underlying each of the subjects mentioned. *Five credits.* Arrangements may be made for further work in any one of the subdivisions of this course and such advanced work may be combined with thesis work at the discretion of the class adviser and the instructor in charge of the particular subdivision in which the advanced work is selected.

22. Electrical Testing. Laboratory course in general testing of telephones, telegraph and electrical signaling devices, etc. Location of faults and grounds in cables, transformers and dynamos. Calibration of various types of electrical measuring instruments by engineering methods. This is a companion course to Electrical Installations 1, but the former is not a prerequisite. *First semester; one or two credits.* Mr. KARTAK.
25. Conference. A seminary course for the presentation and discussion of papers dealing with the various problems of electrical engineering. Once a month a joint meeting is held with the Madison section of the American Institute of Electrical Engineers. *Throughout the year; two credits.* Mr. BENNETT, Mr. DISQUE.
Open to seniors and graduates.
29. Inspection Tours. An inspection tour to the large industrial centers is made during the Easter recess and is required of juniors. The tours comprise visits to Milwaukee, Chicago, Pittsburg, Niagara Falls, Schenectady, and other manufacturing centers, for the purpose of inspecting manufacturing plants and great engineering works under operation or construction.

ENGINEERING CONTRACTS AND SPECIFICATIONS

PROFESSOR PENCE.

1. The law of contracts as applied to engineering work, including the preparation of engineering specifications. *Second semester; two credits.*

HYDRAULIC AND SANITARY ENGINEERING

PROFESSOR MEAD; ASSISTANT PROFESSOR DAVIS; MR. WEIDNER, MR. GARNER.

1. Hydraulics. The elementary principles of the mechanics of fluids and the theory, calibration and use of instruments for hydraulic measurements. Recitations, lectures and laboratory work. Prerequisite, Mechanics 1 and 2. *Repeated each semester. Three credits.* Mr. DAVIS, Mr. WEIDNER.

2. Experimental Hydraulics. Practice in the precise measurement of flowing water, the analysis of data and the determination of experimental coefficients and empirical formulas. Laboratory work and assigned readings and problems. Prerequisite, course 1. *Repeated each semester. One credit.* Mr. DAVIS.
3. Hydraulic Laboratory. Research and thesis work. Prerequisite, courses 1, 2. Mr. MEAD, Mr. DAVIS.
4. Water Power. Stream flow, hydraulic power development and test of motors and appliances. Prerequisite, course 1. *First semester. Three credits.* Mr. MEAD, Mr. GARNER.
5. Hydraulic Machinery. Water wheels, motors, pumps and other machines. Prerequisite, course 1. *Second semester. Two credits.* Mr. MEAD, Mr. GARNER.
10. Hydrology. Physiography, hydrogeology, and hydrography in relation to water power, water supply and sanitary works. *Second semester. Two credits.* Mr. MEAD, Mr. GARNER.
11. Water Supply Engineering. Prerequisite, courses 1, 10. *First semester. Three or four credits.* Mr. MEAD, Mr. GARNER.
12. Sewerage, Drainage, and Irrigation. Prerequisite, course 1. *Second semester. Two credits.* Mr. MEAD, Mr. DAVIS, Mr. GARNER.
13. Hydraulic Design. Design of various features of hydraulic and sanitary works. *Four hours drawing per week.* Prerequisite, courses 1, 10. *One or both semesters. Two credits.* Mr. MEAD.
14. Rivers and Canals. River and harbor improvement and construction. Prerequisite, course 1. *Second semester. One credit.* Mr. MEAD.

MACHINE DESIGN

PROFESSOR MACK; ASSISTANT PROFESSORS KEOWN, VOSSKUEHLER.

1. Mechanism. The relative motions of machine parts, including belting, toothed gears, cams, chains, ratchets and linkages. *Repeated each semester.* Prerequisite, Mechanical Drawing, 1 and 2. *Four credits.* Mr. KEOWN.

2. Machine Design for Electrical Engineering. A study of mathematical and empirical methods for the design of machine parts and complete machines, with a parallel drawing course conforming to the requirements of modern drawing practice. Prerequisite, Machine Design 1, Mechanics 1, 2. *First semester three credits; second semester two credits.* Mr. VOSSKUEHLER.
3. Machine Design for Mechanical Engineering. A continuation of mechanical drawing and kinematics as applied to design. A study of the application of the principles of mechanics to the design of machine elements and complete machines. Prerequisite, Machine Design 1, Mechanics 1 and 2. *Five credits each semester.* Mr. MACK and Mr. VOSSKUEHLER.
4. Machine Design for Chemical Engineering. A study of and practice in the design of pumping, filtration, sugar, oil, and other machinery used in the chemical engineering industries. Prerequisite, First semester of Machine Design 2. *Second semester; two credits.* Mr. VOSSKUEHLER.
5. Machine Design. Continuation of course 3. Design of special and automatic machinery, jigs and fixtures. Elective for students who have had course 2 or 3. *Two credits.* Mr. MACK.
6. Patent Office Drawing. A course giving practice in the preparation of drawings required by the U. S. Patent Office. Prerequisite, Mechanical Drawing 1, 2. *Time arranged upon consultation. One credit.* Mr. MACK.
7. Special and Automatic Machinery. *Two credits.* Mr. KEOWN.

Students in Civil Engineering electing special work in Machine Design, should have the same prerequisites as noted in course 4.

MECHANICS

PROFESSOR MAURER; ASSISTANT PROFESSORS BURNSIDE, WITHEY; MR. JOHNSON, MR. KOMMERS, MR. MCCULLOUGH, MR. MILLER.

1. Statics. Treated, as are all the following courses, with special reference to the requirements of engineers. *First ten weeks of each semester; three credits.*

May be taken only by students who have completed or are fulfilling the last semester requirement in Mathematics and Physics for engineering students.

2. Mechanics of Materials. *Last eight weeks of each semester; two credits.*
3. Mechanics of Materials, continued. *First ten weeks of each semester; three credits.*
4. Dynamics. *Last eight weeks of each semester; two credits.*
5. Materials of Construction. Principally laboratory work; assigned readings and reports; also the preparation and manufacture of materials. Prerequisite, Mechanics 2; may be begun either semester as a two-hour course. Additional credits can be obtained only in a succeeding semester.
6. Advanced Mechanics of Materials. Inertia circle and ellipse; kern; beams of unsymmetrical section; curved beams; principle of least work; flat plates; thick cylinders, etc. *Second semester; two credits.* Mr. MAURER.

Elective for students who have had courses 2 and 3 or their equivalent.

7. Advanced Technical Mechanics. A review and extension of the principles and equations of dynamics as presented in course 4 with applications especially to harmonic motion, vibrations and balancing of machines, whirling shafts, and rotating disks; dynamical stability, as of flying machines. *First semester; two credits.* Mr. MAURER.

Elective for students who have had courses 1 and 4 or their equivalent.

8. Materials of Construction. Laboratory research. Work in the following lines will be given as described, and other work may be arranged for in either semester.
 - a. Iron and Steel.—Comparative study of methods of testing, testing machinery, and specifications. Open to seniors. *First semester; one credit.*
 - b. Concrete.—Plain: *first semester; one credit.* Reinforced: *second semester; two credits.* Mr. WITHEY.
 - c. Brick.—Complete tests of several varieties, including sand-lime brick, and comparison of results. Open to students who have had one semester of Mechanics 4. *Throughout the year; one credit.* Mr. McCULLOUGH.

MINING AND METALLURGY

PROFESSOR HOLDEN; ASSISTANT PROFESSOR HAVARD.

1. Excavation and Quarrying. Earth excavation and dredging, support of excavations and disposal of material, plant and methods. Explosives, their composition, manufacture, properties and use. Rock excavation and quarrying, plant and methods. *First semester; three credits.* Prerequisites, Chemistry 2, Physics 1, Topographic Engineering 2. Mr. HOLDEN.
2. Tunneling, Boring and Shaft Sinking. Driving, ventilating and supporting railway, submarine and mining tunnels. Boring: Equipment and methods for boring and core drilling; deviation and survey of bore holes. Shaft sinking: in earth, solid rock, quick-sand and heavy ground; hoisting, pumping, timbering and lining shafts. *Second semester; three credits.* Prerequisite, Mining 1. Mr. HOLDEN.
3. Prospecting and Mine Development. Mining geology and its relation to methods of exploration; surface prospecting, boring, prospecting shafts and drifts. Development: Location and character of openings, systems of development, proving and blocking out ore, equipment. *October and November; one credit.* Prerequisite, Geology 1, Mining 2. Mr. HOLDEN.
4. Exploitation of Mines. Methods of working veins, beds and masses of different dimensions, dips and values; methods of handling material and supporting workings. Hydraulic and dredge mining. Coal mining: Longwall and pillar methods; coal cutting and blasting; maintenance of entries and air-ways; salt and sulphur mining. *December, January, February; two credits.* Prerequisite Mining, 3. Mr. HOLDEN.
5. Mine Engineering. The design, installation and operation of drainage, ventilation, lighting, haulage, hoisting and signalling systems in mines: Surface plant, power generation and transmission, buildings, roads and water supply. Mine surveying; mine accidents, their causes and prevention; rescue of men and recovery of workings; safe-

guards and safety devices. Examination, sampling and valuation of mines. Engineers' reports. *Throughout the year; two credits.* Prerequisites, Steam and Gas 3, Mining 4. Mr. HOLDEN.

7. Ore Dressing and Coal Washing. Principles and practice of ore dressing; hand dressing, crushing, sizing, jigging, classifying, concentration, log washing, magnetic, electrostatic, oil and flotation processes of separation. Mechanical engineering of concentrating mills. Coal breakers and washers. *Second semester; three credits.* Prerequisite, Mining 5.
8. Gold and Silver Milling and Cyanidation. Stamp-milling; plate, pan, arrastra and patio amalgamation; cyanidation of sands and slimes. Tube-mills. Methods of treatment, filtration, precipitation and recovery of the precious metals. Special mechanical equipment of cyanide plants. *Hours to be arranged.* Prerequisite Mining 7.
11. Mining Thesis. The development and equipment of a mine, including the design and working drawings of the principal structures and machines, with a detailed report.
20. Assaying. Laboratory practice with accompanying lectures covering the assay of ore, matte, bullion, slag and cyanide plant solutions. *Second semester; three credits for mining students, two credits for chemists.* Mr. HAVARD.
22. General Metallurgy. Introductory course covering the chemistry applied and the mechanical equipment used in metallurgical processes. Refractories, fuels, fluxes, and metallurgical products. Calorimetry and pyrometry. *First semester, three credits.* (Prerequisite Chemistry 11.) Mr. HAVARD.
23. Metallurgy. The Metallurgy of Copper, Lead, Silver, Gold, Zinc, Tin, Antimony, Arsenic, Quicksilver, Bismuth, Cadmium and the less common metals. *Second semester, three credits.* (Prerequisite course 22.) Mr. HAVARD.
24. The Metallurgy of Iron and Steel. *First semester, two credits.* (Prerequisite, course 22.) Mr. HAVARD.

RAILWAY ENGINEERING

PROFESSOR PENCE; MR. CURTIS, MR. BURRITT, MR. MUEHLSTEIN.

1. Railway Curves. An introductory course in the computation and field location of simple, compound and spiral curves. *Second semester; two credits.* Mr. BURRITT.
- 2a. Railway Location and Construction. The theory of field and office work necessary to survey and construct a new railway line and to improve or reconstruct an old one. *First semester; lectures and computations; two credits.* Mr. PENCE, Mr. BURRITT.
- 2b. Practice in Field and Office Work. In connection with course 2a. *First semester, six hours per week, field and office work; three credits.* Mr. CURTIS, Mr. BURRITT, Mr. MUEHLSTEIN.
3. Maintenance of Way. A course in railway maintenance. *Second semester; two credits.* Mr. PENCE.
4. Railway Engineering. A brief course in railway location, construction and maintenance. An elective for students in electrical and mining engineering who have previously had practice in surveying. *First semester; two credits.* Mr. CURTIS.
5. Railway Economics. The economics of railway location and improvements; dealing with train resistance, momentum, grades and related matters. *Second semester; two credits.* Mr. PENCE, Mr. BURRITT.
6. Railway Design. A course in the design of track standards and minor railway structures, with field work in yard resurveys, staking out structures, etc. In connection with course 3. *Second semester; four hours per week drawing and field work; two credits.* Mr. CURTIS, Mr. MUEHLSTEIN.
7. Advanced Railway Design. The design of railway yards and terminals, shops, buildings, etc. *First semester; four hours per week; two credits.* Mr. PENCE.
8. Signaling and Interlocking. A study of railway signaling and train control. *Second semester (second half); twice a week; one credit.* Mr. PENCE.

10. Masonry Construction. Theory governing the design of masonry structures and foundations. *Second semester; two credits.* Mr. CURTIS.
11. Substructures. Ordinary and deep foundation work; lectures, problems and library work. *Second semester (first half), twice a week; one credit.* Mr. PENCE.
12. Estimates and Valuations. A study of the methods of valuing railway and public utilities properties. *Second semester; twice a week; two credits.* Mr. PENCE.

For course in railway transportation, see courses under the head of Political Economy. This course is offered as an elective to seniors and graduates in Civil Engineering.

ROADS AND PAVEMENTS

ASSOCIATE PROFESSOR SMITH.

1. Location, Specifications and Construction of Highways and City Pavements. Text, Baker's *Roads and Pavements*. *First semester; two credits.*

SHOP WORK

SUPERINTENDENT STEEN; MR. DABNEY, MR. DORRANS, MR. GABRIEL, MR. LOTTES, MR. PAYTON, MR. SLADKY, MR. MATTERN.

1. Bench Work in Wood. *Each semester; one credit.*
2. Wood, Lathe, Pattern, and Foundry Work. *Each semester; one credit.*
3. Bench Work in Iron. Instruction in the use of the chisel, file and scraper. *First semester; one-half credit.*
4. Pipe Fitting, Maintenance of Belting, Babbiting, and Soldering. *First semester; one credit.*
5. Lathe Work in Metals. *First semester; two credits in Mechanical Engineering course; one credit in Electrical Engineering course.*
6. Planing and Milling. *Each semester; one credit.*
7. Forge Work. *First semester; one and one-half credits in Mechanical Engineering course; one credit in Electrical Engineering course.*
8. Chipping and Filing, Maintenance of Belting, and Soldering. *First semester; one credit.*

9. Tool Making, Grinding, Jigs and Fixtures. *First semester; two credits.*
10. Turret Lathe Operation. Forms of tools and methods of operation for production of duplicate parts. *Second semester; one credit.*
11. Machine Construction. *Each semester; four credits in Mechanical Engineering course; two credits in Electrical Engineering course.*
12. Advanced Foundry Practice. Loam, sweep, and dry sand molding; management of cupola. *Second semester; one credit.*
13. Elective for Civil Engineering Students. Wood work; trusses, trestle work, and concrete molds. Forge practice; forging, welding, and tool dressing. Machine shop; lathe work drilling, use of hand tools, punching, riveting, and instrument repairs. *Second semester; three credits.*
14. Elective for Chemical Engineering students. (Wood work; scaffolding, machine framing, concrete molds.) Forge practice; forging, welding, brazing, soldering, and tool dressing. Machine shop; lathe work, drilling, use of hand tools, pipe fitting, maintenance of belting and shafting, sheet metal construction, lead and copper working. *Second semester; three credits.*

Required for Mechanical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12; total, 16 credits.

Required for Electrical Engineering Course, Nos. 1, 2, 5, 6, 7, 8, 11; total, 8 credits.

Note:—Four credits in each of the above lists of required courses must be taken during vacation periods. Opportunity is offered to do this work in the University shops, but credit for same may be obtained for not less than four weeks' work in industrial establishments when a satisfactory equivalent can be obtained.

STEAM AND GAS ENGINEERING

PROFESSOR THOMAS; ASSOCIATE PROFESSOR THORKELSON; ASSISTANT PROFESSOR CHRISTIE; MR. SHEALY, MR. BLACK, MR. KUNZE, MR. ROWSE.

1. Elementary thermodynamics of perfect gases and vapors as applied to the study of compressed air, gas engines steam engines, steam turbines and boilers, followed by a detailed study of fuels, the principles of combustion, boilers, auxiliaries and engines. *First semester five credits.* Mr. THORKELSON.
2. Continuation of course 1 including a detailed analysis of the efficiency and economy of various types of steam engines, steam turbines, gas engines and a study of valve gears. *Second semester. Four credits.* Mr. THORKELSON.
5. Steam and Gas Engine Calculations. A course devoted to the calculations used and problems met in determining sizes and the more important details of steam engines, turbines, gas engines, producers, boilers, etc. Problems are assigned and discussed, and solved in the drawing room. *First and second semesters; two two-hour periods; two credits.* Prerequisite, courses 1 and 2. Required of senior Mechanicals. Mr. THOMAS and Mr. THORKELSON.
6. Special Course in Thermodynamics. A special course in the theory and principles underlying the construction, designs and operation of steam engines, gas engines, and boilers of various types. *First and second semesters; three credits.* Prerequisite, Sophomore Engineering Physics, and Mathematics. Required of junior Electrical and Mining Engineering students. Mr. THOMAS, Mr. THORKELSON, Mr. SHEALY.
7. Course in Steam Engineering for Civil Engineers. An informational course covering the more important types of engines and boilers. *First semester; two credits.* Prerequisite, Sophomore Engineering Physics and Mathematics. Required of Junior Civil Engineers. Mr. SHEALY, Mr. BLACK, Mr. KUNZE.

8. Heating and Ventilation. An elective study open to all students who have completed courses 1 and 2 or course 6. This study covers the principles and theory of modern systems of heating and ventilating buildings of various types and is accompanied by problems involving the design and specifications for such systems. *First semester; three credits.* Mr. SHEALY.
9. Internal Combustion Engines. An elective study open to all students who have completed courses 1 and 2, or course 6. This study covers the theory and design of gas and gasoline engines, gas producers and such details as the carburetor, governor, ignition device, etc. *Second semester; two credits.* Mr. THOMAS.
11. Compressed Air and its Application. An elective study open to students who have completed courses 1 and 2, or course 6 or 7, and devoted to the theory and principles governing the economical production and various applications of compressed air. *Second semester; two credits.* Mr. SHEALY.
12. Steam Turbines. An elective study open to students who have completed courses 1 and 2 or course 6. Lectures and drawing room work on the theory and design of the principal types of steam turbines. *First semester; two credits.* Mr. THOMAS.
13. Refrigeration and Refrigerating Machinery. An elective study open to students who have completed courses 1 and 2, or course 6. The principles and methods of producing low temperatures artificially are studied together with the construction, operation, and application of refrigerating machinery. *Second semester; two credits.* Mr. SHEALY.

Laboratory Courses

21. Efficiency of machine elements including screw and gear friction, belt and similar transmission devices, hoisting machines, transmission dynamometers, friction and oil testing, etc. Course to accompany class work in Machine Design. *First semester, one credit.* Required of juniors in Mechanical Engineering.

22. Calibration of instruments and the determination of the efficiencies, losses and characteristics of simple heat engines. Gas and fuel analysis (Chem. Tech. 2a). *Second semester, 2 credits.* Required of Juniors in Mechanical Engineering. *Second semester, one credit.* Required of Juniors in Electrical Engineering.
23. Continuation of Course 22 covering more complex types of heat engines including air compressors, refrigeration machinery, gas producers and engines, superheated steam, steam turbines, boiler plants and other power plants. *First semester, two credits.* Required of seniors in Mechanical and in Electrical Engineering.
24. Advanced Engineering Testing consisting of special tests of heat engines, transmission machinery, heating and ventilating installations, power plant and other commercial tests. *Second semester, one credit.* Required of seniors in Mechanical Engineering.
25. Calibration of instruments, adjustment and testing of simple heat engines. *Second semester, two credits.* Required of Juniors in Chemical Engineering.
26. Continuation of Course 25 dealing with adjustment, operation and efficiency tests of heat engines of various classes, including boiler and power plant tests. *First semester, one credit.* Required of seniors in Chemical Engineering.
27. Abridged Course. Calibration of Instruments, adjustment, operation, determination of losses and efficiencies of heat engines including the principal types of steam and internal combustion engines and including power plant tests. *First semester, one credit. Second semester, one credit.* Required of Juniors in Civil Engineering. *First semester, two credits.* Required of Seniors in Applied Electrochemistry. *First semester, two credits.* Required of Juniors in Mining Engineering.
28. Advanced Laboratory Work. Advanced courses are offered in various lines of experimental work. Stress is laid on original research and investigation. Credit and hours to be arranged according to work taken. Open throughout the year to graduate students, and to other students upon arrangement with their advisers and with the department.

STRUCTURAL ENGINEERING

PROFESSOR TURNEAURE, ASSISTANT PROFESSOR KINNE, MR. PARKER,
MR. GLAETTLI.

1. Structural Details. The designing of simple forms of members and of joints in wood and iron, and wooden roof and bridge trusses. *Two credits. First semester; two drafting periods, two hours each.* MR. KINNE, MR. PARKER, MR. GLAETTLI.
4. Reinforced Concrete, Arches, and Dams. Theory and design of reinforced concrete structures and analysis of arches, dams and similar structures. *Four credits. First semester. Lectures; Tu., Th., 9; one four-hour drafting period.* MR. TURNEAURE, MR. PARKER.
- 5a. Bridge Stresses. Simple bridge trusses. *Four credits. Second semester. Four recitations.* MR. KINNE, MR. PARKER.
- 5b. Bridge Stresses. Suspension, swing, cantilever, and arch bridges. *Two credits. Prerequisite, course, 5a. First semester. Recitations M., W., 12.* MR. KINNE.
6. Bridge Design. Theoretical considerations. *First semester. One lecture Th., 8. Given as a part of 7b.* MR. KINNE.
7. Designs and Estimates. In this course each student makes a complete design of one structure of each class mentioned below, prepares detail drawings, and makes an estimate of the quality of material and cost; complete working drawings are made of at least one structure.
- 7a. Roof Trusses, and Plate Girders. *Three credits. Prerequisite, course, 5a. Second semester. Two drafting periods, three hours each.* MR. KINNE, MR. PARKER, MR. GLAETTLI.
- 7b. Riveted and Pin-Connected Trusses. *Four credits. Prerequisite, courses 5a and 7a. First semester. Two drafting periods, four hours each.* MR. KINNE.
- 7c. Swing Bridges. Design of truss, turntable, and operating machinery. *Two credits. Prerequisite, courses 5a, 5b, 7a, and 7b. Second semester. One four-hour drafting period.* MR. KINNE.

Elective for seniors and graduates in Civil Engineering.

8. Advanced Theory and Experimental Work. Higher structures, secondary stresses, and tests on bridges under moving loads. *Two credits*. Prerequisite, courses 5a and 5b. *Second semester. Two recitations.* Mr. TURNAURE.
Open to seniors and graduates.
9. Structural Design. A short general course in the designing of roofs and buildings designed for students in Mechanical, Electrical, and Mining Engineering. *Three credits. Two drafting periods, three hours each.* Mr. KINNE.

TOPOGRAPHIC AND GEODETIC ENGINEERING

ASSOCIATE PROFESSOR SMITH; MR. OWEN, MR. CUTLER.

1. Topographic Drawing and Mapping. This work includes work in pen and water color topography and the platting of the field notes taken in T. E. 3 and T. E. 4. *Throughout the year; 64 hours in drawing room; one credit each semester.*
2. Elementary Surveying. Johnson's *Surveying* and Smith's *Field Manual*. *Throughout the year; first half of first semester and last half of second semester; one credit each semester.*
3. Elementary Surveying. A continuation of course 2, and includes the field and office work of a variety of practical problems in the use of the engineer's transit and level. Special emphasis is placed on methods of computation and arrangement of data. *First semester; recitations two hours a week; field work first nine weeks, 72 hours; four credits.*
4. Advanced Surveying. A continuation of course 3, and includes a study of the higher instruments of precision, and their use in topographic city, and hydrographic and mining surveys. *Second semester; recitations two hours a week, first twelve weeks; field work, 56 hours, last eight weeks; three credits.*
5. Elementary Geodesy. A general treatment of the adjustment and use of theodolites and precise levels. Computations for the adjustment of a quadrilateral, latitude and

longitude etc. are based on the field work in course 6. Johnson's Surveying. *Second semester; two credits.* One additional credit for field work can be taken if desired.

6. Trigonometrical Survey. Field work for illustrating course 5. Each year a portion of the region in the vicinity of Portage, Wisconsin, will be covered by an accurate triangulation, and also by a topographic and hydrographic survey. Survey begins the Monday of Commencement week, and continues for four weeks (240 hours). Mr. SMITH, Mr. OWEN, Mr. CUTLER, Mr. PARKER.
7. Advanced Geodesy. Lectures, assigned readings, field work. Wright's *Adjustment of Observations*. *First semester; two credits.*
Elective for students who have taken courses 2, 3, 4, and 5, or their equivalents.
8. Short Course in Surveying. Planned to meet the demands of Mechanical Engineering and Electrical Engineering students for a general study of the subject including the use of both transit and level. *Repeated each semester; three credits.*
9. Rapid Topography. Adapted for training topographers for the United States Geological Survey. Use of the plane table and aneroid barometer in sketching topography. *Second semester; two credits.*
10. City Planning and Surveying. Topographic and Cadastral. Lectures, assigned readings and field work. *Second semester; two credits.*

THE LAW SCHOOL

H. S. RICHARDS, Dean, Professor of Law.

History

Plans for the organization of the Law School were formulated in 1857, but owing to lack of funds the actual organization was not effected until 1868. The instructional staff was composed of members of the Dane County bar and the judges of the supreme court.

The course of study covered but one year, and no requirements as to admission were exacted. In 1874 candidates for admission were required to pass examinations in the ordinary English branches. In 1881 the course of study was extended to two years, and candidates were required to have a fair English education. In 1894 the course was extended to three years. In 1896 the requirements for admission were made the same as in the College of Letters and Science. In 1905 candidates for degrees were required to present additional credits equivalent to the freshman year of the College of Letters and Science. In 1907 the present requirements of credit equivalent to the freshman and sophomore years of the College of Letters and Science became effective. In April, 1907, the regular summer session of the Law School was established. In 1909 by act of the Legislature, the name of the College of Law was changed to Law School to conform to the uniform nomenclature adopted by the Association of American Universities, which provides that the term school shall be applied to any department conferring professional or technical degrees that requires at least two years of college work as preliminary to professional study. At the time of its organization the college occupied rooms in the capitol building. It now occupies a building especially erected for its use in 1893.

Objects of the Course

The Law School offers a course of study covering a period of three years. It is designed to teach the fundamental principles of the English and American law in a thorough manner, and to fit the student for the active practice of the profession.

Admission

Students applying to the Law School may be admitted as are students in other departments by either of two methods:—

First, on certificates from accredited schools or colleges.

Second, on examination at the University.

Applicants for admission to the Law School as candidates for a degree must satisfy the general requirements of the University (see Index under Admission), and in addition, must present credits equivalent to the freshman and sophomore years in the College of Letters and Science. The above requirements may be satisfied by work done in any reputable college or university. Graduates of the regular course in the several state normal schools of Wisconsin will be admitted as candidates for a degree.

Applicants for admission who can satisfy the general entrance requirements will be admitted as special students and entitled to all the privileges of the school in the way of instruction. An opportunity is thus afforded to prepare for the bar examinations in this and other states. In exceptional cases, special students may become candidates for the degree. (See Requirements for Graduation.)

The examinations are conducted at the same time and by the same members of the faculty as the examination of candidates for admission to the College of Letters and Science.

In addition to the other entrance requirements, all candidates for admission to the Law School, whether graduates of accredited high schools or not, are required to take the regular entrance examination in English, required for admission to the College of Letters and Science (see Index under Admission), except,

(a) Students of the university who have already passed such examination;

(b) Graduates of other approved colleges and universities. But the faculty may require any student to take additional work in English, if, in their judgment, it is necessary.

Those intending to apply for examination for admission to the first year class, or for advanced standing, should notify the Registrar of the University before the beginning of the year, and apply for directions, as examinations cannot be taken later.

Examinations for admission to the first year class will be held on June 16-17, and September 27-28, beginning at 9 o'clock.

Pre-Legal Courses

The following courses approved by the Association of American Law Schools are suggested for students preparing for the study of law, where only two years is devoted to such work: English (Rhetoric and Composition), two years; Latin or Greek, two years; German or French, two years; Mathematics, or a natural or physical science, one year; History (including English and American Constitutional History), two years; Psychology. If three or more years be devoted to such preparation, additional courses in History, Natural Science, and courses in Philosophy, Political Science, Economics, and Sociology are suggested.

Advanced Standing

Candidates for advanced standing who can comply with the general entrance requirements of the school as above set out will be given equivalent credit for satisfactory work done in other law schools in good standing having a three-year course, upon presenting properly authenticated certificates of such work. The right is reserved to require examinations in all cases where the credits presented are not regarded as equivalent.

Students who have been graduated from the College of Letters and Science, and who, while students in that college, have elected and earned twenty credits in the Law School, will be admitted to the second year. To meet the above requirement, the student must elect courses offered in the first year of the law course.

All persons who intend to apply for advanced standing under the above rules should forward or present their credentials to the dean of the school at least one week before the opening of the particular session which the student desires to attend.

Graduation

The degree of Bachelor of Laws will be conferred upon all candidates of good character and of at least twenty-one years of age, who have complied with the following conditions:

(1) Credit for at least seventy-two credit hours (a credit is the equivalent of one hour a week for a semester).

(2) Residence of at least three years in a law school of good standing, having a three-year course, one year of which must have been in this school.

(3) Preparation and presentation of a satisfactory thesis of not less than 3,000 words on some legal subject selected with the approval of the faculty. The subject shall be chosen and the work begun thereon, under the supervision of the instructor in charge, not later than December 1st, and completed by April 15th, preceding the Commencement at which the candidate will apply for his degree. Two unit-hours' credit is given for thesis.

(4) Students completing the course with distinguished ability and presenting a thesis of unusual merit will be recommended for the degree with honor.

(5) Unclassified students who have completed seventy-two credits and who have been in residence for three years may, provided they have displayed unusual ability in their work, by special action of the faculty, be recommended for a degree.

Admission to the Bar

The statutes of the state provide that any resident graduate of the Law Department of the University of Wisconsin shall be admitted to the bar of any court upon the presentation of his diploma, and may be admitted to the supreme court when not in session by an order signed by one of the justices thereof and filed with the clerk. (R. S. Wis., sec. 2586.)

Under this statute and a rule of the federal court, it is customary for the graduating class, on motion of a member of the faculty, to be admitted to the supreme court of the state, and to the district and circuit courts of the United States, immediately upon graduation. This entitles them to admission to the bar of any court of record in Wisconsin and all federal courts.

COURSES OF INSTRUCTION

The courses of instruction are arranged to present as far as possible, the fundamental topics of the law during the first year, and the specialized subjects during the second and third years. Unless otherwise indicated, the courses extend throughout the year.

FIRST YEAR

CONTRACTS. Williston's Cases on Contracts. *Six credits.* Mr. SCOTT.

CRIMINAL LAW AND PROCEDURE. Beale's Cases on Criminal Law. Four credits. Mr. HUBERICH. Summer session, 1910. Mr. COOK.

EQUITY I. Ames' Cases on Equity. *Three credits. Second semester.* Mr. RICHARDS.

HISTORY OF THE COURTS AND THEIR JURISDICTION. Lectures and assigned readings (by members of the faculty). Designed as introductory to the study of law.

LAW OF PERSONS. Paige's Cases. *Two credits.* Mr. JONES.

PROPERTY I. Gray's Cases on Property. Vols. I, II (2nd ed.) *Four credits.* Mr. OLIN. Summer session, 1910. Mr. MOORE.

TORTS. Ames' and Smith's Cases on Torts. *Five credits.* Mr. GILMORE.

SECOND YEAR.

ADMINISTRATIVE LAW I. Selected Cases on Administrative Law. *Three credits. Second semester.* Mr. COOK.

ADMINISTRATIVE LAW II. Selected Cases and Smith's Cases on Municipal Corporations. *Two credits.* (Omitted 1909-10). Summer session, 1910. Mr. COOK.

ADMINISTRATIVE LAW III. Goodnow's Cases on Taxation. *Two credits. Second semester.* (Omitted 1909-10). Mr. COOK.

AGENCY. Wambaugh's Cases on Agency. *Three credits. Second semester.* Mr. GILMORE.

BANKRUPTCY. Williston's Cases on Bankruptcy. *Two credits. First semester.* Mr. MOORE.

BILLS OF EXCHANGE AND PROMISSORY NOTES. Huffcut's Cases on Negotiable Instruments. *Four credits.* Mr. MOORE.

COMMON LAW PLEADING. Ames' Cases on Pleading. *Two credits. First semester.* Mr. COOK.

DAMAGES. Beale's Cases on Damages. *Two credits. Second semester.* (Omitted 1909-10.) Mr. RICHARDS.

EQUITY I. Ames' Cases on Equity. *Three credits. First semester.* Mr. RICHARDS.

EQUITY II. Ames' Cases on Equity. *Three credits. Second semester.* Summer session, 1910. Mr. RICHARDS.

EQUITY PLEADING. Selected Cases. *One credit. Second semester.* Mr. COOK.

EVIDENCE I. Jones on Evidence and selected cases. *Two credits.* Mr. JONES.

INSURANCE. Wambaugh's Cases on Insurance. *Three credits. Second semester.* Mr. MOORE.

INTERNATIONAL LAW. Scott's Cases. *Four credits.* Mr. REINSCH.

PROPERTY II. Gray's Cases on Property. Vols. II, III (2nd ed.) *Four credits.* Mr. OLIN.

PUBLIC SERVICE COMPANIES. McClain's Cases on Carriers, and selected cases. *Three credits. Second semester.* Mr. GILMORE. (Omitted 1909-10.)

QUAS-CONTRACTS. Keener's Cases on Quasi-Contracts. *Three credits. First semester.* Mr. GILMORE.

SALES. Williston's Cases on Sales. *Three credits. Second semester.* Mr. GILMORE. Summer session, 1910.

TRUSTS. Ames' Cases on Trusts (2nd ed.) *Four credits. Second semester.* Mr. COOK.

THIRD YEAR

ADMIRALTY. Ames' Cases on Admiralty. *Two credits. First semester.* (Omitted 1909-10.) Mr.

CODE PLEADING. Hinton's Cases on Code Pleading. *Four credits.* Mr. COOK. Summer session, 1910. Mr. HINTON.

CODE PRACTICE. Wisconsin Statutes and Decisions. *Four credits.* Mr. SANBORN.

CONFLICT OF LAWS. Beale's Cases on Conflict of Laws. *Three credits. Second semester.* Mr. HUBERICH.

CONSTITUTIONAL LAW. Thayer's Cases on Constitutional Law. *Four credits.* Mr. HUBERICH.

CORPORATIONS. Smith's Cases on Corporations. *Four credits.* Mr. RICHARDS.

EVIDENCE II. Jones on Evidence. *Two credits.* Mr. JONES.

MORTGAGES. Kirchwey's Cases on Mortgages. *Two credits. First semester.* Mr. COOK.

PARTNERSHIP. Gilmore's Cases on Partnership. *Two credits. First semester.* Mr. GILMORE. Summer session, 1910.

PROPERTY III. Gray's Cases on Property, Vols. V, VI. *Four credits.* Mr. MOORE.

SURETYSHIP. Ames' Cases on Suretyship. *Two credits. First semester.* Mr. MOORE.

Required and Elective Courses

Candidates for the degree are required to take all the subjects of the first year, twelve hours of work in the second year, and twelve hours in the third year. The work of the second and third years is elective. Second year students may elect not less than twelve nor more than fourteen hours in courses offered in the second year. Second year students who are graduates of the College of Letters and Science, and who have not completed all the courses of the first year, will be required to include such omitted courses in their list of electives. Third year students may elect not less than twelve nor more than fifteen hours in courses offered in the third year and in courses not already taken by them when second year students. No student is permitted to count more than twelve hours of work in any one semester towards the total hours required for the degree. Elections in all cases are subject to the approval of the dean.

Procedure and Practice Courses

Courses in Procedure and Practice extend throughout the last two years and comprise Common Law Pleading, two credits, Code Pleading, four credits, Equity Pleading, one credit, and Code Practice, four credits. The purpose of the courses is to instruct the student in the principles of pleading and practice at common law and under the codes, by duplicating as far as possible the steps taken by an active practitioner in the preparation and trial of cases at law and in equity throughout the entire field of litigation. The student is required to prepare pleadings in assigned cases, and to carry through the various steps in a cause from its inception to the final judgment.

Elective Studies

Students of the Law School will be permitted to pursue studies in other departments of the University, but not for credit.

Students in the College of Letters and Science will be permitted to elect, as a part of their undergraduate course, studies in the Law School for which see Index, under Election.

Resources of the Law School

The Law School is maintained from appropriations made for the purpose by the Regents, and from matriculation fees.

By the will of the late Judge Mortimer M. Jackson, funds to the amount of \$20,000 were bequeathed to the University to found and maintain a professorship of law. Through the generosity of J. M. Pereles of Milwaukee, the Pereles scholarship in law was established in 1909. This scholarship is awarded annually to the student holding a baccalaureate degree, primarily on the basis of scholastic rank attained during two years of residence in the Law School.

Library

The library of the Law School contains 17,000 bound volumes, comprising the official reports of the various states and territories and of the United States; a complete set of English, Irish, and Canadian reports; the reporter system; the various series of selected cases, as American Decisions, American Reports, American State Reports, Lawyers Reports Annotated; duplicates of the more important reports; complete sets of the leading law periodicals; the leading encyclopedias of law and other works of reference; a large collection of text-books, statutes, digests, etc.

Students are allowed free access to the books. The library is open each week day from 8 A. M. to 10 P. M.

For information concerning the other libraries accessible to students, see Index under Library.

Advantage of Location

Unusual facilities for observing the practice of the various courts are offered the students of the Law School, from the fact that the supreme court of the state is in session during most of the academic year, and the students have opportunity to listen to arguments by some of the ablest lawyers of the country.

Two terms of the United States district and circuit courts are held here annually, and important cases, both in law and equity, are tried, illustrating the procedure in the federal courts.

The circuit court of Dane county holds three terms annually, giving the students opportunity to observe the details of the practice under the code system.

The municipal court of Dane county sits daily for the trial of criminal causes.

The legislature of the state holds biennial sessions

The University

Students of the Law School may pursue studies for which they are prepared in other departments of the university without additional fees in so far as such studies do not interfere with their work in the Law School. Before registering in other departments, the student must obtain permission from the Dean of the Law School.

Societies

The Forum-Columbia is an incorporated literary society composed entirely of law students. Weekly meetings for debates and other literary exercises are held.

Fees and Expenses

All fees are payable in advance at the office of the Secretary of the Regents. (See Index under Tuition and Fees.) Admission to membership in the classes is not permitted until the fees are paid. No deductions are made for absences, nor for failure to begin at the opening of the year, nor is extension of time allowed for payment of fees. Fees must in all cases be paid in advance.

Receipts showing the payment of tuition must be filed with the dean within ten days after entry.

It is most desirable that each student should provide himself with his own text-books and books of selected cases which are designated in the program of instruction. These books may be obtained from the University Co-operative Society at a considerable discount from the quoted prices. The books required for the first year can be obtained for about \$35 and for the second and third years for about \$65,

The expenses of living are moderate. (See Index under Expenses.)

Students desiring information in regard to boarding places, or general information as to expenses, should address their inquiries to the Secretary of the Regents.

A careful perusal of this general statement, it is believed, will supply all needed information; but should further inquiries as to admission, examination, etc., be necessary, they should be addressed to the Dean of the Law School, Madison, Wis.

SUMMER SESSION

The summer session established in 1907 is a regular session of the school. The courses offered are not review courses or abbreviations of the subjects presented during the regular session. The lectures are given by regular members of the faculty assisted by experienced teachers from other law schools. Full credit toward the degree in law is given for all work successfully completed. An opportunity is thus afforded to those who for any reason are unable to attend the regular session to obtain thorough and systematic legal instruction. By taking advantage of the summer sessions regular students of the school can materially shorten the calendar period of residence required for the degree.

During the session of 1910 the members of the regular faculty will be assisted in the work of instruction by Professor Edward W. Hinton, Professor of Law, University of Missouri.

Time of Opening

The session for 1910 begins June 27th and continues until September 2nd.

Courses of Instruction

FIRST YEAR

PROPERTY I. Gray's Cases on Property, Vols. I and II. (2nd ed.)
Five and one-half credits. Mr. MOORE.

CRIMINAL LAW. Beale's Cases on Criminal Law. *Two and two-thirds credits.* Mr. COOK.

SECOND AND THIRD YEARS

ADMINISTRATIVE LAW. Smith's Cases on Municipal Corporations.

Two and two-thirds credits. Mr. COOK.

CODE PLEADING. Hinton's Cases on Code Pleading. *Two and two-thirds credits.* Mr. HINTON.

EQUITY II. Ames' Cases on Equity Jurisdiction (specific performance). *Two and two-thirds credits.* Mr. RICHARDS.

PARTNERSHIP. Gilmore's Cases on Partnership. *Two and two-thirds credits.* Mr. GILMORE.

SALES. Williston's Cases on Sales. *Two and two-thirds credits.* Mr. GILMORE.

THE COLLEGE OF AGRICULTURE

H. L. RUSSELL, Dean.

GENERAL INFORMATION

The College of Agriculture is one of the general divisions of the University and instruction in the general sciences, languages and mathematics is given to agricultural students along with students in other colleges, but for the purely agricultural subjects separate buildings, equipment and staff of instructors are maintained. Agricultural students enter the University with the same standing as students in other colleges and have the advantages incident to a great university such as the general laboratories, libraries and student organizations. Aside from the purely instructional work of the College the facilities for research in agriculture afford special opportunities for both regular and advance students to secure a knowledge of the best methods of agricultural science.

BUILDINGS

The group of seven buildings occupied by the College of Agriculture are located at the west end of Observatory Hill adjacent to the University Farm, which extends still further westward. These buildings have been erected with particular attention to the needs of the various departments which occupy them.

Agricultural Hall, a four story building, 200 by 64 feet, accommodates the administrative offices of the College and Experiment Station, Farmers' Institutes and offices and laboratories for the departments of Agricultural Chemistry, Animal Husbandry, Agricultural Bacteriology, Agricultural Economics and Poultry Husbandry. An auditorium, with 750 seats is provided in an octagonal wing, 66 feet in diameter, to the north of the main structure. The first floor of this wing is occupied by the agricultural library and reading room.

Hiram Smith Hall provides facilities for the Dairy Department including instructional and research work. The main

structure includes three stories, 100 by 84 feet and houses the offices, principal lecture room and laboratories for the Dairy Department as well as the University creamery, pasteurizing plant, refrigerator and cheese making rooms. At the rear an addition, 40 by 80 feet in size, provides additional laboratories and lecture rooms for instruction in butter and cheese making. A modern ammonia plant supplies both buildings with refrigeration. In the creamery, operated by the Dairy department, over 4,000,000 pounds of milk, from more than 200 farms, is annually made into pasteurized milk and cream, print and package butter and several varieties of cheese and sold in the leading dairy markets. North of the Hiram Smith Hall stands the Dairy Machinery laboratory, which includes modern equipment for instruction with dairy and creamery machinery boilers, gas and steam engines.

The Soils building is a three story brick structure with six greenhouses adjoining, which provides lecture rooms and laboratories for instruction and research work, etc., for the Soils department as well as offices and laboratories for the State Soil Survey. As soon as vacated by the Horticultural department, quarters will be provided for the department of Economic Entomology. The greenhouses are especially equipped with improved devices for testing soils in various ways and a thoroughly equipped laboratory for soil physics is to be found on the first floor of the building. The portion of this building, formerly occupied by the Horticultural department, has been remodelled to provide a special research laboratory and a general student laboratory. A tract of about 12 acres of the University Farm is controlled by the Soils department for instruction and research in irrigation, drainage and fertilizer tests.

The Horticultural building, in process of erection, will include offices, laboratories and class rooms for the departments of Horticulture and Plant Pathology. It will be provided with every modern equipment for instruction and research in these subjects and the adjoining greenhouses and potting house are modern in both design and construction. The grounds of the Horticultural department include some 12 acres of orchards and extensive experimental plantations.

The Agronomy building, entirely devoted to the Agronomy department, is a modern fire proof structure 98 by 48 feet in

extent. It includes thoroughly equipped laboratories for seed testing, seed inspection, grain curing and cleaning, and storage of seed grains. A large grain judging room, which will accommodate several hundred students and another smaller lecture room are provided. Offices for the Agronomy department and a museum for farm crops are also included. A portion of the University farm is used by the Agronomy department for the development of seed grain for experimental and dissemination purposes.

The Agricultural Engineering building is devoted entirely to this department, being fully equipped with modern farm machinery. The structure is of fire-proof reinforced concrete and brick construction, 150 by 50 feet in extent with three floors. The laboratories includes an extensive power laboratory in which are installed modern gasoline and steam engines, electric dynamos and motors, gasoline and steam traction engines, threshing outfits and other heavy farm machinery. On the second floor is another large machinery laboratory containing such tools as grain binders, mowers, manure spreaders, plows, harrows, corn planters, etc., while on the top floor a third laboratory provides room for smaller farm tools and implements. The building includes two large lecture rooms and drawing rooms for rural architecture and road building. A large laboratory especially designed for research and instructional work with concrete is also provided in addition to offices for the staff of the department.

The Live Stock Pavilion is a concrete and brick structure, 212 by 115 feet in size, containing two stories and an attic. The building includes a large arena in the form of an ellipse, 66 by 164 feet, covered with tanbark, with seating arrangements for 2,500 people. This room may be divided into separate compartments by movable curtains for use with classes of students. Beneath the amphitheatre seats are 15 box stalls and 22 standing stalls for the use of horses belonging to the University Farm. Offices are also provided for the Veterinary and Horse Breeding departments and Farm Superintendent, as well as an operating room and dispensary. The attic provides storage facilities for 600 tons of roughage and several hundred bushels of grain.

The University Farm buildings include barns for the horses, cattle, sheep and swine as well as two large stock judging rooms. Modern outbuildings are provided for storing farm machines and manure as well as silos, hog houses and a tobacco curing shed.

FARM LANDS

The College of Agriculture is provided with two farms, the "University Farm," adjacent to the campus, including about 300 acres of tillable land, while two miles to the westward is located the "Hill" Farm, including about 290 acres devoted to experiments with farm crops, fertilizers, tillage, drainage, etc. The latter farm is equipped with a modern barn and is operated to facilitate both instructional and research work in agriculture.

LIVE STOCK

The University herds and flocks include representatives of the leading breeds of horses, cattle, sheep and swine valued at \$35,000. The principal breeds of dairy cattle, beef cattle, draft horses, swine and sheep are represented. These animals include many individuals that are well-known prize winners and are used for both instructional and research purposes. Through its own live stock equipment supplemented by animals secured during the college year, the University provides live stock ample for all requirements.

LIBRARY

The Agricultural College library includes about 11,000 bound volumes and thousands of pamphlets distinctly agricultural in character. This library is a part of the general University library, but is kept in special quarters in Agricultural Hall so as to be readily available to students in this College. It is especially strong in the files of scientific agricultural journals, both American and foreign, and the record books of pure-bred animals. A trained librarian is in attendance to assist students.

ORGANIZATIONS

Three societies are maintained by the Long Course, Short Course and Dairy students which meet weekly to discuss questions related to their special interests. These organizations are for drill in parliamentary practice, training in declamation, de-

bate, and essay writing, as well as for the discussion of scientific and practical questions along agricultural lines. The Hoard Press Club is conducted by those students interested in agricultural journalism. The Grafters' Club includes students particularly interested in horticulture; the Agricultural Engineers' Club, those who are specially studying agricultural machinery and a Live Stock Club is maintained to discuss the interests of various breeds of cattle.

Students of the College of Agriculture, former and present, engaged in farming in Wisconsin, maintain an Agricultural Experiment Association, with a paid membership of about 1,600, for the purpose of co-operating with the College and Experiment Station in advancing the agriculture of the commonwealth. Practical experiments, planned by station officials and a committee of the association, are carried out on the farms of the members. Especial attention is given to testing promising new varieties of farm grains and forage crops, and to multiplying and disseminating the desirable varieties. By means of this organization, the members of which are located in all sections of the State, the college is in close touch with the great body of Wisconsin farmers. The State appropriates \$2,000 annually to the work, and prints 5,000 copies each year of the annual report of the association.

SPECIAL FACILITIES FOR RESEARCH

In several departments of the Agricultural College special lines of work are conducted with which students may come in contact and secure training of a special character along certain lines of agricultural science. The Chemistry department is by state law placed in charge of the licensing and analyzing of commercial feed stuffs and fertilizers sold in the state. The department of Economic Entomology is in charge of the State Nursery and Orchard Inspection. The Agricultural Bacteriology department is associated with the State Live Stock Sanitary Board in matters relating to animal diseases. The department of Horse Breeding has charge of the licensing of stallions used in the state. The Soils department conducts extensive drainage, fertilizer and soil tests and also directs the work of the State Soils Survey. The Agronomy department has charge of the State Seed Inspection. The Agricultural Engineering depart-

ment conducts tests with various farm machines and implements. The Dairy department operates a large commercial creamery. The department of Agricultural Economics conducts farm management investigations. Other lines of work of national importance are conducted by several members of the staff with which students frequently come in contact.

THE ACCREDITED FARM SYSTEM

The College of Agriculture has inaugurated a movement for the establishment of a system of accredited farms. Advanced or graduate students who have had the preparatory practical work on the farm will have an opportunity to secure more comprehensive training and experience with successful, progressive farmers. For further particulars address Prof. D. H. Otis, Chairman of Committee on Accredited Farms.

PLAN OF THE COLLEGE ACTIVITIES

The work of the College of Agriculture is conducted on a three-fold basis. Each department is directly concerned:

First, to develop agricultural science through investigation and experiment.

Second, to give instruction to students at the University, and

Third, to disseminate agricultural information among the farmers of the state by means of publications, farmers' courses, institutes and the agricultural extension service. Students in the College of Agriculture have ample opportunities to become acquainted with these three lines of work.

FEES AND EXPENSES

For tuition and fees, see Index.

The expenses of resident students in the graduate and long courses are practically the same as for those pursuing other University courses.

The expenses of resident Short Course and Dairy students will vary from \$85 to \$100 for the term for room, board, washing, and necessary books.

COURSES OF INSTRUCTION

The following courses have been arranged to meet the needs of students of various classes.

The Graduate Courses offer to advanced students opportunities for professional training and original investigation, made possible through an active Experiment Station, associated with numerous scientific laboratories. The special lines of study will be left largely to the selection of the student, subject to the approval of the agricultural faculty. Students may participate in experiments in progress, and after suitable experience, conduct independent investigations. When contributions of knowledge of permanent value are made they may be published through the bulletins of the Experiment Station with proper credit to the contributor.

The Long Course offers scientific training in agricultural chemistry, soils, horticulture, animal husbandry, poultry, dairying, agricultural bacteriology, agronomy, agricultural engineering, agricultural economics, economic entomology, plant pathology, agricultural education and agricultural journalism. This course also embraces general training in chemistry, physics, biology, bacteriology, and other branches which have an application in agriculture. The field is so broad, however, that it is impossible for the student in four years to pursue all the courses offered in addition to acquiring the necessary fundamental studies, and hence much liberty of selection is allowed.

The Middle Course. This course of two full college years embraces essentially the work of the first two years of the Long Course, with the exception of foreign language and mathematics. Considerable work in the basal sciences is required to lay a foundation for the distinctively agricultural work. Practical subjects may be elected during the second year.

Courses for the Training of Teachers in Agriculture are offered through an arrangement whereby agricultural students may take six credits in the Course for the Training of Teachers in the College of Letters and Science and receive the University Teachers' Certificate upon graduation.

The Summer Session Courses include work in Agricultural Education, Agronomy, Animal Husbandry, Dairying, Home Economics, Horticulture and Soils. For details see index under Summer Session.

The Short Course for two years of fourteen weeks each is provided for those who can devote only a limited time to study, and who wish to return at once to the active operations of the

farm, and therefore desire the greatest amount of directly useful knowledge that can be acquired in the brief time allowed. This course begins early in December and closes in March. An illustrated circular describing this course may be had on request to Prof. D. H. Otis, College of Agriculture, Madison, Wis.

The Winter Dairy Course is open to persons who have had at least six months experience in a creamery or cheese factory and covers one term of twelve weeks, beginning about November 1. The course is designed to train creamery buttermakers and factory cheesemakers in the science and practice of their respective lines. Certificates are given to those who satisfactorily complete the full course and have worked in a creamery or cheese factory for two seasons of not less than seven months each, one of which is before and the other after the period spent in the dairy course. An illustrated circular describing this course in detail will be sent upon application to Prof. E. H. Farrington, College of Agriculture, Madison, Wis.

The Summer Dairy Course. This course is intended for beginners or those having little practical knowledge of creamery or dairy work. Students are admitted at any time during the spring and summer after March 1. They are expected to remain at least ten weeks, although they may continue the work longer, if desirable. Under the supervision of instructors, laboratory exercises and theoretical instruction are given as required.

EXTENSION COURSES GIVEN AT UNIVERSITY

The Farmers' Course in Agriculture. This is a popular course of addresses, demonstrations and exercises covering a period of 10 days, designed to give busy farmers the most useful instruction and practice in the science of agriculture in the shortest possible time at a season when they can be away from home for a brief period. The course is given during February by the staff of the College of Agriculture assisted by other speakers. Programs may be had upon application to College of Agriculture, Madison, Wis.

The Women's Course in Home Economics. This course for one week is designed to give the women practical and helpful instruction in the various phases of home economics. The plan of instruction includes lectures and demonstrations on such subjects as cooking, serving and nursing. The course is held at the

same time as the Farmers' Course to afford an opportunity for farmers' wives and daughters to attend. Detailed information will be furnished upon request to Prof. Abby L. Marlatt, Madison, Wis.

The Special Dairy Course. This is a week's course of lectures, conferences and demonstrations designed to meet the needs of creamery and cheese factory operators and managers and to give them advanced instruction in connection with problems of the management of their establishments as well as to inform them on recent advances in the science of dairying. The course is held at the time of the Farmers' Course. Detailed programs may be secured upon application to Prof. E. H. Farrington, College of Agriculture, Madison, Wis.

The Boys' Corn and Seed Grain Course is a week's course of lectures, demonstrations and exercises in grain growing and judging, selection and testing of seeds and other subjects relating to farm life which are interesting to farm boys. The course covers one week, during the Farmers' Course. For further information address Prof. R. A. Moore, College of Agriculture, Madison, Wis.

TERMS OF ADMISSION

GRADUATE COURSES IN AGRICULTURE.—Graduates of this University and of other colleges and universities in good standing are admitted to this course without examination.

LONG COURSE IN AGRICULTURE.—The requirements for admission to this course are given under Admission to University. (See Index.)

ADULT SPECIAL STUDENTS IN AGRICULTURE.—For terms of admission for adult special students, see Index under Admission.

THE MIDDLE COURSE IN AGRICULTURE. Requirements for admission are same as for Long Course.

SHORT COURSE IN AGRICULTURE.—Students in this course must be at least sixteen years of age and have a good common school education. No entrance examinations are required.

DAIRY COURSES.—The requirements for admission to the Winter Dairy Course are the same as for the Short Course excepting that the candidates must have had not less than six months experience in a creamery or cheese factory before entering the course. For admission to the Summer and Special Courses no previous experience is required.

FARMERS' AND WOMEN'S COURSES.—No examinations are required for admission to these courses, but the candidate must be at least twenty-five years of age to be admitted to the Farmers' Course.

FELLOWSHIPS AND SCHOLARSHIPS

Two Fellowships and two Scholarships are offered graduate students in this college. These are granted to those candidates best fitted for the work selected. The Fellowships return \$400 per year each and the Scholarships \$225 per year each. Application for these honors must be made to the Registrar of the University on proper forms.

Two J. Ogden Armour Scholarships, \$250 each, will be available to students who enter this college in 1910. For details address Prof. G. C. Humphrey, Madison, Wis.

DEGREES

The degree of Bachelor of Science (Agriculture) is conferred upon students who successfully complete the Long Course in agriculture.

The degree of Bachelor of Science (Home Economics) upon those completing the long course in Home Economics.

The title of Graduate in Agriculture will be conferred upon students who complete the Middle Course in satisfactory manner.

The degree of Master of Science is conferred upon agricultural graduates who complete one year of advanced study at the University and present an acceptable thesis on a topic approved by the College Faculty.

CERTIFICATES

Students who complete in a satisfactory manner the Short Course or Dairy Course, will be granted appropriate certificates.

OUTLINE OF LONG COURSE IN AGRICULTURE

Note.—In calculating the hours per week for the various studies, two hours of laboratory, field, or barn practice count as one hour of class room work, which is the equivalent of one credit in this outline. Required subjects outside the College of Agriculture (Marked L. & S.) will be found catalogued under the College of Letters and Science.

Freshman Year

FIRST SEMESTER	Credits.
English 1 (L. & S.)	3
German 2S, (L. & S.)	4
Chemistry 1 (L. & S.)	5
Agronomy 1, first half semester	2½
Animal Husbandry 1, last half semester	2½
Military Drill	2
Gymnastics	2

SECOND SEMESTER	Credits.
English 1 (L. & S.)	3
German 2S (L. & S.)	4
Chemistry 1 (L. & S.)	5
Dairy Husbandry 1, first half semester	2½
Agricultural Engineering 1, last half semester	2½
Military Drill	2
Gymnastics	2

Sophomore Year

FIRST SEMESTER	Credits.
Bacteriology 1 (L. & S.)	3
Chemistry 11a (L. & S.)	4
Biology 1 (L. & S.)	5
Horticulture 1, first half semester	2½
Animal Husbandry 2, last half semester	2½
Military Drill	2
Gymnastics	2

SECOND SEMESTER	Credits.
Agricultural Bacteriology 20	4
Agricultural Chemistry 1 and 2	5
Soils 1	5
Mathematics 201 (Engineering)	3
Military drill	2
Gymnastics	2

Junior Year

FIRST SEMESTER	Credits.
Physics 1 (L. & S.)	5
Agricultural Economics 1	3
Botany 20 (L. & S.)	2
Electives (3 required in the College of Agriculture)	6

SECOND SEMESTER	Credits.
Physics 1 (L. & S.)	5
Botany 6 (L. & S.)	4
Agricultural Economics 1	2
Electives (3 required in the College of Agriculture)	6

Senior Year

FIRST SEMESTER	Credits.
Major, including Thesis	5
Minor, assigned	5
Electives (3 required in the College of Agriculture)	6

SECOND SEMESTER	Credits.
Major, including Thesis	5
Minor, assigned	5
Electives (3 required in the College of Agriculture)	6

The thesis must represent some phase of the student's work in his major study, four credits being given. The professor in whose department the major is taken, will select a minor. The assigned minor may be taken outside the College of Agriculture. The total requirements for graduation are 133 credits in addition to military drill and gymnastics. Before graduation, the student must also have had at least six month's practical farm experience. Sixteen to eighteen credits exclusive of drill and gymnastics may be elected each semester, with the privilege of increasing the electives to twenty credits, provided the student has received a standing of 85 per cent. in all studies for the preceding semester. This rule also applies to the Middle Course students.

OUTLINE OF MIDDLE COURSE IN AGRICULTURE

Freshman Year

FIRST SEMESTER	Credits.
English 1 (L. & S.)	3
Chemistry 1 (L. & S.)	5
Agronomy 1, First half semester	2½
Animal Husbandry 1, last half semester	2½
Electives in College of Agriculture	3
Military Drill	2
Gymnastics	2

SECOND SEMESTER

	Credits.
English 1 (L. & S.)	3
Chemistry 1 (L. & S.)	5
Dairy Husbandry 1, first half semester	2½
Agricultural Engineering 1, last half semester	2½
Electives in College of Agriculture	3
Military Drill	2
Gymnastics	2

Sophomore Year

FIRST SEMESTER	Credits.
Biology 1 (L. & S.)	5
Bacteriology 1 (L. & S.)	3
Horticulture, 1, first half semester	2½
Animal Husbandry 2, last half semester	2½
Electives in College of Agriculture	3
Military Drill	2
Gymnastics	2

SECOND SEMESTER

	Credits.
Agricultural Chemistry 1	3
Agricultural Bacteriology 20	2
Soils 1	3
Soils 2	3
Electives (3 required in College of Agriculture)	5
Military Drill	2
Gymnastics	2

Students taking the Middle Course and desiring to transfer to the Long Course, must be prepared to spend more than the usual four years, in order to complete the requirements.

DEPARTMENTS OF INSTRUCTION

THE LONG AND MIDDLE COURSES IN AGRICULTURE

AGRICULTURAL CHEMISTRY

PROFESSORS BABCOCK, HART, WOLL; ASSISTANT PROFESSOR MCCOLLUM;
MR. STEENBOCK, MR. TOTTINGHAM, MR. PETERSON AND MR.
JURREJENS.

The courses offered in this department are intended to give a broad view of farm chemistry, useful to the general agricultural student, and to develop men fitted for instructional or experimental work in the various fields of chemical activity applied to agriculture. Courses 1 and 2 are general and are open to students who have completed General Chemistry 1, and have had at least one semester's work in qualitative and quantitative analysis. These courses must precede all other courses in the department. Courses 3 to 5 are for undergraduate students desiring a more detailed knowledge of the special subjects treated and are preliminary to greater specialization. These courses should be preceded or accompanied by work in Physics and Biological Science. Course 5 should be preceded or accompanied by a course in Organic Chemistry. Physiology is a desired prerequisite. Course 4 is a prerequisite to thesis work in Dairy Chemistry and courses 3 and 5 should precede the preparation of a thesis on topics relating to Plant and Animal Chemistry. A general course in Microscopic Technique is a prerequisite to course 21. All other advanced courses in this department are open to undergraduates and graduates who have had the necessary preliminary training.

Primarily for Undergraduates

1. Agricultural Chemistry. A general discussion of chemistry applied to the farm, including the chemistry of plants and animals and the processes involved in their growth. *Three credits; second semester; lectures; Mr. HART.*

2. Agricultural Analysis. Analytical chemistry applied to agricultural materials, including quantitative analysis of fertilizers, manures, soils, feeding stuffs, dairy products, insecticides. *Two credits; second semester; two laboratory periods.* Mr. TOTTINGHAM and Mr. STEENBOCK.
3. Plant Chemistry. For students desiring a fuller consideration of the growth and composition of the principal farm crops. Select methods in the analysis of plant materials and processes of growth will be studied. *Two or five credits; first semester; two lectures; two three-hour laboratory periods.* Mr. HART and Mr. TOTTINGHAM.
4. Dairy Chemistry. The study of the chemistry of milk and its products, including the detection and quantitative estimation of adulterants. *Two or five credits; first semester; two lectures; two three-hour laboratory periods.* Mr. HART and Mr. TOTTINGHAM.
5. Animal Chemistry. The chemistry of feeding stuffs, the processes of digestion, the use of nutrients and the metabolic changes involved in the nutrition of animals. *Two or five credits; first semester; two lectures; laboratory work by arrangement.* Mr. MCCOLLUM and Mr. STEENBOCK.
6. Household Chemistry. The composition and physical properties of foods and a discussion of the main factors affecting their nutritive value, chemistry of the home, cleaning materials, dyes, etc. *Five credits; first semester; two lectures; three laboratory periods.* Mr. HART and Mr. PETERSON.
19. Thesis Work in Agricultural Chemistry. The thesis may be taken in Plant or Animal Chemistry or in Dairy Chemistry. *Throughout the year; two credits.* Mr. HART, Mr. WOLL and Mr. MCCOLLUM.

For Graduates and Undergraduates

20. Advanced Bio-Chemical Analysis. Examination of plant and animal products, including quantitative work on the proteins, carbohydrates and fats, and such enzymic processes as are involved in the nutrition of plants and animals. *Five credits; either semester; conferences, assigned reading, and laboratory work by arrangement.* Mr. BABCOCK, Mr. HART and Mr. MCCOLLUM.

21. Detection of Adulteration of Concentrated Feeding Stuff. Includes chemical and microscopical examinations. *Two credits; second semester; two laboratory periods.* Mr. WOLL.
22. Sugar Beet Analysis. A course intended for chemists in sugar factories. *Two credits; first semester; two laboratory periods.* Mr. WOLL and Mr. JÜRRENS.

Primarily for Graduates

30. Plant Nutrition. The influence of various fertilizers upon the development and composition of plants, to include field and pot experiments. *Throughout the year; five credits; conferences, assigned reading, and laboratory work by arrangement; five laboratory periods.* Mr. BABCOCK, Mr. HART and Mr. TOTTINGHAM.
31. Animal Nutrition. Composition and digestibility of foods and their influence upon growth, production of milk, etc. *Throughout the year; five credits; conferences, assigned reading, with laboratory and barn work by arrangement; five laboratory periods.* Mr. HART, Mr. WOLL and Mr. McCOLLUM.
32. Advanced Dairy Chemistry. The approximate analysis of milk and its products, and a study of the changes which occur in the manufacture of dairy products. *Throughout the year; five credits; conferences and laboratory work by arrangement; five laboratory periods.* Mr. BABCOCK and Mr. HART.
33. Seminar in Agricultural Chemistry. Original articles of importance will be studied in detail, with a view to broaden and deepen the understanding and to act as a stimulus to further research. *Throughout the year; once every two weeks.* Mr. BABCOCK, Mr. HART, Mr. WOLL and Mr. McCOLLUM.

AGRICULTURAL ECONOMICS

PROFESSOR TAYLOR, PROFESSOR OTIS, AND MR. VALENTINE.

The courses in Agricultural Economics are intended to give the student a knowledge of the economic principles which relate to the agricultural industry and the application of these principles to practical problems which confront the farmer.

Courses 1, 8, and 10 are designed to meet the needs of students who wish to prepare themselves for practical work as farm managers and as citizens interested in state activities affecting agriculture.

Courses 27 and 28 are offered especially for students who wish to prepare for positions as teachers and research workers in the field of agricultural economics. Such students will need to elect courses in the department of Political Economy in order to round out their work. Courses 1b, 5, 8, 21, 30, 35, 51, 52, 53, and 60 are available for this purpose.

Primarily for Undergraduates

1. Outlines of Agricultural Economics. A study of economic principles in their application to (1) the organization of agricultural production, (2) the marketing of farm products, (3) the purchase of land, equipments, and other supplies, and (4) state activities affecting the economic interests of the farmer. *Three credits, first semester; two credits, second semester.* Mr. TAYLOR.
8. Farm Accounting. A course designed to give the student such training in bookkeeping and accounting as will enable him to determine the financial results of his farm operations. *Two credits; second semester.* Mr. VALENTINE.
10. Farm Management. A study of farm practice as related to the application of economic principles to the business management of the individual farm. Visits will be made to farms of successful farmers and others for the purpose of studying methods of farm management. *Two credits, second semester; lectures and field work.* Mr. OTIS.
19. Thesis Work. *Two credits; throughout the year.* Mr. TAYLOR, Mr. OTIS, and Mr. VALENTINE.

For Undergraduates and Graduates

27. Historical and Comparative Agriculture. A sketch of the development of agriculture and an attempt to find an explanation of historical changes and geographical differences in methods of farm organization. *Two credits; first semester.* Mr. TAYLOR.

28. Research Work in Agricultural Economics. Opportunity is given for advanced students to do research work on selected problems in agricultural economics. *Two credits; second semester.* Mr. TAYLOR.

AGRICULTURAL ENGINEERING

ASSISTANT PROFESSOR OCOCK, AND MR. WHITE

The courses given in this department are designed to prepare students for instructional or investigational work as well as for practical farm work.

Course 1 covers the fundamental work of the department in a general way. Courses 2 and 4 cover many of the general and specific problems that arise in connection with the construction of farm buildings and fences. Courses 3 and 5 enable the operator to obtain the maximum efficiency and durability with the principal farm machines. It is important that the student bring to the work a fund of practical experience. It is desired that courses 3 and 5 be preceded by shop work (courses 1 and 7 in Mechanical Engineering).

Primarily for Undergraduates

1. General Agricultural Engineering. A general course in farm power, tillage and harvesting machinery; construction and ventilation of farm buildings; demonstrations of the uses of concrete for farm purposes; farm engineering. *Two and a half credits; second half; second semester; lectures and laboratory work.* Mr. Ocock and Mr. WHITE.
2. Rural Architecture. The location of farm buildings with reference to general convenience and sanitation; construction of the farm house, barns, silos, etc.; heating and ventilation; platting home grounds, paddocks and fields. Prerequisite course 1 or its equivalent. *Two or three credits; first semester; lectures and laboratory practice; two three-hour periods.* Mr. Ocock.
3. Power Machinery. The construction, efficiency and operation of horse powers, windmills, gasoline and traction engines, electrical farm motors, pumps, feed grinders, etc. May be elected only by juniors and seniors. *Three credits; first semester, lecture and laboratory practice; three two-hour periods.* Mr. Ocock.

4. Cement Work. Instruction in concrete for farm purposes. Prerequisite course 1 or its equivalent. *Two credits; second semester; lectures and laboratory practice; two two-hour periods.* Mr. Ocock.
5. Farm Machinery. Tools and machinery for preparing the seed bed, sowing or planting, tilling and harvesting crops. Prerequisite course 1. *Three credits; second semester; lectures and laboratory practice; three two-hour periods.* Mr. Ocock and Mr. WHITE.
6. Farm Machinery. For students preparing themselves for field experts. Prerequisite, courses 3 and 5 and Mechanical Engineering 1 or their equivalents. *Three credits; second semester; lectures and laboratory practice.* Mr. WHITE.
7. Road Building. The construction of earth, macadam, and stone roads; practical work with the King road drag, road graders, etc. Field work in road drainage, leveling, etc. Prerequisite, course 1. *Two credits; second semester; lectures and laboratory practice.* Mr. Ocock.
19. Thesis and Research Work. This course varies in the subject matter, according to the lines in which the thesis is written. *Two credits; throughout the year.* Mr. Ocock.

AGRICULTURAL EDUCATION

ASSISTANT PROFESSOR HATCH.

The course in Agricultural Education is required of students in the College of Letters and Science who take the Course for the Training of Teachers and minor in Agriculture and of those in the College of Agriculture who take the Courses for the Training of Teachers in Agriculture.

1. Agricultural Education:—Origin and development of the movement for agricultural education, with special reference to the teaching of agriculture in elementary and secondary schools. *Two credits; second semester; hours to be arranged.* Mr. HATCH.

AGRICULTURAL JOURNALISM

MR. MARQUIS.

* Students in agricultural journalism have favorable opportunities for studying methods of issuing technical and popular experiment station bulletins in connection with the office of the Agricultural Editor. Practical experience in journalism may be secured on *The Student Farmer*, an agricultural publication issued by students in the College of Agriculture. The Hoard Press Club, an organization of students maintained primarily to discuss questions relating to agricultural publishing and publicity, holds weekly meetings which are addressed by prominent editors and advertising managers.

Primarily for Undergraduates

1. Agricultural Journalism:—The best practices in technical writing, editing and publishing as related to the needs of agricultural teachers, investigators or journalists are presented in lectures and practicums. *Two credits; second semester; lectures and assigned writing.* MR. MARQUIS.
2. Seminar in Practical Editing:—A conference on editing and publishing, circulation and advertising with special reference to *The Student Farmer*. *Throughout the year; bi-weekly meetings, open to staff of Student Farmer and students taking Agricultural Journalism 1.* MR. MARQUIS.

AGRONOMY

PROFESSOR MOORE; ASSISTANT PROFESSOR NORGORD; AND MR. STONE.

Courses 1 and 2 in Agronomy train the student to judge competitive displays of grains and forage plants and to understand the best methods of farm crop production. The instruction given is designed to fit the students to grow pure bred seed grains intelligently or to operate general farms.

As a prerequisite for courses 20 and 30, the student should first complete courses 1 and 2 in Agronomy and a course in Systematic Botany.

Primarily for Undergraduates

1. Cereals. Includes a systematic study of the judging of corn and small cereals grown in Wisconsin. The testing, planting, cultivation, harvesting, storing, and marketing of grain crops receive special attention. *Two and a half credits; first half first semester; laboratory work.* Mr. NORGORD and Mr. STONE.
2. Forage Plants. A study of forage plants for seed and feed production. The testing, judging and sowing of their seeds, and best methods of rotation and curing the crops. *Three credits; second semester; lectures and laboratory work.* Mr. MOORE and Mr. STONE.
3. Root, Soiling and Silage Crops:—A study of beets, turnips, rutabagoes, mangels, etc., for various uses and the growing of forage crops for soiling and silage purposes. *Two credits; first semester; lectures.* Mr. NORGORD.
19. Thesis. Original work and investigation on some assigned topic, bearing upon farm crops. Actual experiments will be required as far as practicable in the thesis work. *Four credits; throughout the year.* Mr. MOORE.

For Undergraduates and Graduates

20. Grain Inspection and Weed Control. Embraces a thorough study of grain, grass and legume seed identification and inspection, including germination and purity tests. The common and noxious weeds and their seeds will be studied with reference to their classification, to their injurious influences on the crops mentioned, and to the best means of prevention and eradication. *Three credits; first and second semesters; lectures, assigned readings and laboratory work.* Mr. STONE.

Primarily for Graduates

30. Breeding Grains and Forage Plants. A study of the methods pursued by plant breeders, supplemented by field work in the propagation of new varieties of grains and forage plants. *Three credits; second semester; conferences, assigned readings and laboratory work.* Mr. MOORE.

ANIMAL HUSBANDRY

EMERITUS PROFESSOR HENRY

PROFESSOR HUMPHREY, PROFESSOR ALEXANDER, ASSISTANT PROFESSOR FULLER; MR. KLEINHEINZ, MR. TORMEY AND ASSISTANTS.

Primarily for Undergraduates

1. Elementary Live Stock Judging. A study of the points and characteristics of the various breeds of cattle, horses, sheep and swine. *Two and one-half credits; last half first semester, five laboratory periods.* Mr. TORMEY.
2. Live Stock Practice. Approved methods in managing farm animals and the recognition and first aid treatment of their common ailments. *Two and one half credits; last half first semester, Lectures M., W., F., 8; two laboratory periods.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, Mr. KLEINHEINZ and assistants.
19. Thesis work. *Two credits.* Mr. ALEXANDER, Mr. HUMPHREY, Mr. FULLER, and Mr. TORMEY.

For Undergraduates and Graduates

20. Breeds of Live Stock. A study of the origin and characteristics of the breeds of live stock. *Three credits; first semester. Lectures, M., W., F., 10.* Mr. FULLER.
21. Elements of Veterinary Science. The rudiments of histology, anatomy, and physiology, with practical applications to the selection and care of animals in health and disease. *Three credits; second semester; three lectures.* Mr. ALEXANDER.
23. Advanced Live Stock Judging. Practical applications of the principles and standards governing the judging of live stock. Prerequisite, course 1. *Five credits; first semester; five laboratory periods.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY and Mr. KLEINHEINZ.
24. Science and Art of Breeding. A study of the laws, principles and approved methods relating to the breeding of live stock. Prerequisite, courses 1, 20. *Three credits; second semester; lectures.* Mr. HUMPHREY.

25. Veterinary Science. A lecture and text book course on hygiene, and diseases of animals, with illustrations and practical demonstrations. *Two credits; second semester; two lectures.* Mr. ALEXANDER.
26. Live Stock Feeding. A study of the feeding of farm animals and the composition of feeding stuffs. Prerequisite for Long Course students courses 1 and 2. Agr. Chemistry. *Three credits; throughout the year; text-book work and lectures.* Mr. TORMEY.
27. Live Stock History. A study of leading individuals and families of live stock including records and pedigrees. Prerequisites, courses 1 and 20. *Three credits; second semester.* Mr. FULLER.

Primarily for Graduates

30. Live Stock Problems. A study of problems relating to Animal Husbandry. Prerequisites, courses 1, 20, 24, 26. *Three to five credits; assigned reading or research work; conferences weekly.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, and Mr. TORMEY.

BACTERIOLOGY

PROFESSOR RAVENEL; ASSOCIATE PROFESSOR FROST; ASSOCIATE PROFESSOR HASTINGS; MR. FULLER, MR. WRIGHT, MR. BROWN, MR. NELSON, MR. ELDREDGE, MISS ARMSTRONG AND MR. NEUMANN.

The courses in agricultural bacteriology are planned to meet the needs (1) of students wishing to obtain a general idea of the relation of bacteria to agricultural processes; (2) of students intending to devote themselves to dairy husbandry, soils or to veterinary medicine; (3) of students wishing to fit themselves for instructional or research work in general and applied bacteriology.

Primarily for Undergraduates

1. General Bacteriology. The general morphology and physiology of bacteria. Laboratory training in cultural and microscopical technique. *Three credits; first semester; lectures, Tu., Th., 11; two laboratory periods.* Given in the College of Letters and Science. Mr. FROST, Mr. FULLER, MISS ARMSTRONG AND MR. NELSON.

3. Thesis. Detailed study of some special problem in dairy or soil bacteriology, or in animal diseases. Prerequisite, courses 1, 20, and either 2, 21, or 23. *Two credits.* Mr. RAVENEL and Mr. HASTINGS.

For Undergraduates and Graduates

2. Medical Bacteriology. The consideration of the relation of bacteria to disease processes in man and animals. Prerequisite, course 1. *Five credits; second semester; lectures, Tu., Th., Sat., 11; three laboratory periods.* Given in the College of Letters and Science. Mr. RAVENEL and Mr. BROWN.
20. Agricultural Bacteriology. A consideration of the relation of bacteria to agricultural processes. Prerequisite, course 1. *Four credits; second semester; lectures, Tu., Th., 9; two laboratory periods.* Mr. RAVENEL, Mr. HASTINGS and Mr. WRIGHT.
21. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter and cheese. Prerequisite, courses 1 and 20. *Three credits; first semester; lecture, W., 11; two laboratory periods.* Mr. HASTINGS and Mr. WRIGHT.
22. Transmissible Diseases of Animals. A study of relation of bacteria to disease processes in animals. Prerequisite, courses 1 and 20. *Three credits; second semester; lectures; Tu., Th., Sat., 11.* Mr. RAVENEL.
23. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, courses 1 and 20. *Three credits; first semester; lecture, W., 10; two laboratory periods.* Mr. HASTINGS and Mr. WRIGHT.

Primarily for Graduates

30. Advanced Bacteriology. A detailed study of special problems in agricultural bacteriology. Prerequisite, courses 1, 20 and either 2, 21, or 23. *Three or five credits; conferences and laboratory work.* Mr. RAVENEL and Mr. HASTINGS.

DAIRY HUSBANDRY

PROFESSOR FARRINGTON; ASSISTANT PROFESSOR SAMMIS, ASSISTANT PROFESSOR LEE; MR. BENKENDORF AND ASSISTANTS.

This department offers instruction in the theory and art of manufacturing dairy products.

Course 1 is designed to give instruction in the handling of milk and the manufacture of butter from a farm dairyman's standpoint.

Courses 1, 2, 3, 4, 5, and 6 are arranged to fit persons to become teachers of dairy manufacturing processes, investigators of dairy problems, operators, inspectors, or managers of large creameries, cheese factories and city milk plants.

Courses 1 and 2 are prerequisite to all courses but 6; course 3 to 21; course 4 to 22.

Primarily for Undergraduates

1. General Farm Dairying. An elementary study of milk and of methods employed for testing and manufacturing farm dairy products. *Two and one-half credits; first half of second semester; lectures, M., W., 9. Mr. FARRINGTON; laboratory, Tu, Th., F., 8-10. Mr. BENKENDORF.*
2. Milk Inspection. A supplementary course including advanced work with the various methods of determining fat, acidity, etc., of dairy products and the detection of physical adulterations. *Four credits; first semester; lecture; Tu., 10. Mr. FARRINGTON; laboratory, Tu., Th., 2-5, Mr. BENKENDORF.*
3. Creamery Butter Making. A course in the theory and practice of cream separation and butter manufacture under commercial conditions. *Three credits; second semester; lecture, F., 10; Mr. FARRINGTON; laboratory, F., 8-10 and 2-4, Mr. LEE.*
4. Cheese Making. Practical and experimental work in making, curing and scoring cheese. Lectures and laboratory work on special topics. Cheddar cheese, cottage, butter-milk, cream, and foreign cheese are made and studied during the year. *Three credits; lecture, S., 8; laboratory period, S., 9-1; Mr. SAMMIS and Assistants.*

5. Pasteurization. A study of the various methods of pasteurization of milk and cream under commercial conditions. *Two credits; second semester; laboratory; S., 9-1.* Mr. BENKENDORF.
6. Dairy Machinery. Shop practice with engines, boilers, artificial refrigerating machinery, pipe fitting, etc. *Three credits; second semester; laboratory M., W., 2-5.* Mr. BENKENDORF and assistant.
19. Thesis. The thesis may be written on assigned topics in the department. *Throughout the year; two credits.* Mr. FARRINGTON and Mr. SAMMIS.

For Undergraduates and Graduates

20. Milk Inspection and Testing. Methods used at farms, factories, and city supply stations, including the inspection of a number of farm dairies. *Throughout the year. Three or five credits, conferences, laboratory and field work.* Mr. FARRINGTON and Mr. BENKENDORF.
21. Butter Yield and Quality. A study of various factors in the process of buttermaking for advanced students. *Throughout the year. Three to five credits; conferences, laboratory and field work.* Mr. LEE.
22. Cheese Making and Curing. (a) The recovery and utilization of cheese factory wastes. (b) The standardization of materials and methods in cheese making. *Three or five credits; throughout the year; conferences and laboratory work.* Mr. SAMMIS.

ECONOMIC ENTOMOLOGY

PROFESSOR SANDERS

The plan is to offer general and special courses for which there is a most urgent demand. Other special courses will be added later as the situation warrants.

Course 1 is intended for the general student; course 3 for those students majoring in Horticulture.

Course 6 is offered primarily for students in Home Economics.

Primarily for Undergraduates

1. General Economic Entomology. A general survey of insects in their economic relation to agriculture, horticulture and public health. *Three credits; first semester; lectures and laboratory.* Mr. SANDERS.
3. Horticultural Entomology. A study of insects affecting horticulture. Prerequisite, course 1. *Three credits; second semester; one lecture and two laboratory periods.* Mr. SANDERS.
6. Household Insects. A general consideration of the insects of importance in the household. *One credit; second semester; lectures and laboratory.* Mr. SANDERS.

For Undergraduates and Graduates

20. Research Work. Special economic problems for advanced students. Prerequisite course 1. *Throughout the year. Credit by special arrangement.* Mr. SANDERS.

EXPERIMENTAL BREEDING**ASSOCIATE PROFESSOR COLE**

General courses, primarily for undergraduates, in the principles of breeding particularly adapted to the needs of students in biology and in the applied branches of animal or plant life will be announced at the opening of the next college year. Advanced courses for graduate students will be developed as the situation warrants. This department will conduct researches in the underlying principles of heredity, animal breeding, etc., with which students may become familiar.

HORTICULTURE

ASSISTANT PROFESSOR J. G. MOORE; MR. MILWARD, MR. ROGERS AND MR. JOHNSON

The courses offered in this department are designed to give the student a thorough working knowledge of the principles and practices of the most important lines of horticultural work.

Primarily for Undergraduates

1. Principles of Fruit Growing. An introductory course designed to cover the principles of fruit growing and their application to our common fruits. *Two and one-half credits; second half of first semester; five lectures a week.* Mr. MOORE.
2. Fruit Growing. Practical work with spraying, pruning, cultivation and various other orchard practices, including construction of fruit packages, plans for storage houses, etc. Prerequisite course 1. *Two credits; second semester; two laboratory periods a week.* Mr. ROGERS.
3. Vegetable Gardening. Designed to cover the principles and practices involved in the growing of vegetables. Includes practical work in the gardens, hot bed and cold frame construction, and manipulation. *Three credits; second semester; three lecture or laboratory periods.* Mr. ROGERS.
4. Vegetable Forcing. A discussion of forcing house construction and heating; principles involved in growing vegetables under glass with practical work in the forcing houses. *Two credits; throughout the year; first semester prerequisite to second.* Mr. MOORE.
6. Landscape Gardening. Principles of decorative planting, planning, mapping and planting of grounds. Study and identification of ornamental plants. *Three credits; second semester; one lecture and two laboratory periods.* Mr. MOORE.
7. Plant Propagation. Instruction in the various methods of propagating horticultural plants. *Two credits; second semester; one lecture and one laboratory period.* Mr. MOORE.
8. Floriculture. The propagation and care of greenhouse, garden, and lawn plants with special reference to home floriculture. Designed for women. *Two credits; second semester; lectures and laboratory work.* Mr. MOORE.
19. Thesis. Based on research or experimental work in the department. *Two credits.* Mr. MOORE and Mr. ROGERS.

For Undergraduates and Graduates

20. Plant Breeding. A study of the various laws relating to plant breeding and their application to horticulture. Prerequisite, Botany 20. *Two credits; first semester; two lectures and one laboratory period.* Mr. ROGERS.
21. Experimental Horticulture. Planning of experiments, keeping records, and experimental work in the laboratory, greenhouses, or orchards. *Throughout the year. Two to five credits; two or more laboratory periods.* Mr. MOORE and Mr. ROGERS.
22. Pomology. Advanced course in the study of the classification and identification of our common fruits. Students electing this course should have had courses 1 and 2. *Three credits; first semester; one lecture and two laboratory periods.* Mr. MOORE.

PLANT PATHOLOGY

PROFESSOR JONES

Primarily for Undergraduates

2. Plant Pathology. A general consideration of the nature and causes of plant diseases and of remedies for the same, followed by specific discussion and laboratory study of a series of typical diseases of nonparasitic origin, bacterial diseases and those due to parasitic fungi. *Three or five credits; second semester; prerequisites, general botany 1, and bacteriology 1; lectures and laboratory work.* Mr. JONES.
19. Thesis. *Credits and hours to be arranged.* Mr. JONES.

For Undergraduates and Graduates

20. Seminar in Plant Pathology:—For advanced and graduate students who wish acquaintance with the more important original publications, current literature, and methods of research of plant pathology. *Credits and hours to be arranged.* Mr. JONES.
21. Research. Students who have had suitable preparation may conduct research work in connection with a thesis or graduate study. *Credits and hours to be arranged.* Mr. JONES.

POULTRY HUSBANDRY

Courses 1, 2, and 4 are prerequisites to Courses 5 and 7.
Course 1 is a prerequisite to Course 6.

Primarily for Undergraduates

1. Elementary Poultry Raising. A general course dealing with poultry houses, yards, etc.; the fattening and marketing of the different classes of poultry; and a brief description of the more popular breeds and varieties of poultry. *Two credits; first semester; lectures and demonstrations.* Mr. HALPIN.
2. Elementary Poultry Raising:—A continuation of Course 1, dealing with production and marketing of eggs; incubation and brooding; summer care and management of poultry, etc. *Two credits; second semester; lectures and demonstrations.* Mr. HALPIN.
3. Poultry Practice:—Practice in poultry carpentry; caponizing; and killing and dressing different grades of market poultry. The aim of this course is to familiarize the student with the ordinary work about a poultry farm. *Throughout the year; one to three credits; laboratory work.* Mr. HALPIN.
4. Pen Management:—Each student will be required to feed and care for a pen of fowls, including the keeping of accurate records of the feed consumed, eggs produced, etc. *Two credits; first semester; by appointment; nine weeks.* Mr. HALPIN.
5. Incubation and Brooding:—Each student will operate an incubator keeping accurate records of temperatures, etc., and also manage brooders and care for the chicks. *One to three credits; second semester.* Mr. HALPIN.
6. Poultry Judging:—A study of the various breeds and varieties of chickens, turkeys, ducks and geese with reference to their origin, history and points of excellence, as described in the American Standard of Perfection. *Three credits; first semester; two lectures and one laboratory period per week.* Mr. HALPIN.

7. Poultry Management:—An advanced course dealing with the details of a large poultry farm, including a study of poultry house construction, care and management of fowls, where they are kept in large numbers, with a discussion of some of the more common diseases in their relation to the poultryman. *Three credits; second semester; one lecture, one recitation and assigned work.* Mr. HALPIN.

SOILS

PROFESSOR WHITSON; ASSISTANT PROFESSOR STODDART; ASSISTANT PROFESSOR JONES, AND MR. WALSTER.

Course 1 is prerequisite to all other courses except course 2.

Courses 1, 2, and 21 are general in character and are adapted to the needs of all students of agriculture. In addition to these courses, courses 20, 21, and 22 are required of students taking their major in soils, and form a basis for the more advanced courses designed to prepare students for instructional or investigational work in Agonomy, Soil Fertility or Land Drainage. Advanced students specializing in this subject are advised to elect courses in Chemistry, Vegetable Physiology, Agronomy, Geology or Hydraulics, according to their special needs, during their senior and graduate years.

Primarily for Undergraduates

1. Principles of Soil Physics and Fertility. An introductory course on the origin, composition, tilth and fertility of soils. *Five credits; second semester; three lectures and two laboratory periods weekly.* Mr. WHITSON and Mr. WALSTER.
2. Land Drainage. The principles of land drainage and the surveying operations pertaining thereto. Field work in leveling, mapping, and chaining for drainage systems and practical work in tile laying. *Three credits; second semester; three lectures a week for the first nine weeks and field work six hours per week for the second nine weeks.* Mr. JONES.
19. Thesis Work and Assigned Work. *Credits and hours to be arranged.* Mr. WHITSON; Mr. STODDART; Mr. JONES and Mr. WALSTER.

For Undergraduates and Graduates

20. Soil Management. An advanced study of the adaptation of systems of farming to soil types; the management of sand, marsh and heavy clay soils; the rotation of crops; use of fertilizers, and of the influence of various systems of farming on the maintenance of fertility. *Two credits; first semester; lectures.* Mr. WHITSON.
21. Soil Chemistry. A lecture and laboratory course on the chemical changes involved in soil fertility and the methods of analysis employed in this study. *Five credits; prerequisite, Chemistry 11a; first semester, one lecture and four laboratory periods.* Mr. STODDART.
22. Soil Physics. Lectures, laboratory, and field work dealing with physical properties of soil; including soil temperature, moisture, and texture as affected by different methods of cultivation. *Five credits; second semester; six laboratory hours and two lectures per week.* Mr. JONES.
23. Drainage Design. Advanced work in making field observations and designing drainage and irrigation systems including detailed studies of those located in the vicinity of Madison. *Three credits; second semester; conferences and field work. By appointment.* Mr. JONES.
24. Plant Nutrition. The relation of the plant and soil; a study of the soil phase of agricultural ecology. Lectures, reports, and plant house work on such problems as soil acidity, toxicity theory, root excretions, lime-magnesia ratio, alkali toleration and kindred topics. *Two credits; second semester.* Mr. WALSTER.

Primarily for Undergraduates

25. Origin and Classification of Soils and Agricultural Climatology. A study of the principles of these subjects in their relation to crop production and of the soils and climates of the United States and chief foreign countries. *Three credits; second semester.* Mr. WHITSON.
31. Research Work. Graduate students with sufficient preparation will be assigned special problems for study. Mr. WHITSON, Mr. STODDART, Mr. JONES, and Mr. WALSTER.

THE WISCONSIN AGRICULTURAL EXPERIMENT STATION

H. L. RUSSELL, Director.

The Wisconsin Agricultural Experiment Station is organically associated with the College of Agriculture and members of the faculty of the college constitute the staff of the station. The purpose of the Station is the promotion of agricultural science by research and experimentation. The funds for the work of the station come from both state and federal appropriations. Each of the several departments has research work continually in progress; some members of the staff devoting their entire time to this work. Such subjects are selected as are of the greatest importance to the farmers of Wisconsin, so far as the facilities at hand permit.

The publications of the Experiment Station include an annual report, a series of popular bulletins, a series of research bulletins and a series of circulars of information. The popular bulletins, including helpful discussions of the results of experiments, are distributed free to residents of the state upon application and are issued in editions of 20,000 to 50,000 copies. The research bulletins contain technical data and discussions not designed for wide distribution and are sent to libraries, investigators, etc. Twenty-six Annual Reports and over 200 bulletins have been issued. Any person desiring to receive the popular bulletins should apply to H. L. Russell, Director, Madison, Wis.

THE FARMERS' INSTITUTES

GEORGE MCKERROW, Superintendent.

The Department of Farmers' Institutes of the College of Agriculture is established through legislative provision which appropriates \$20,000 annually for the purpose of conducting farmers' institutes at various points throughout the state. The superintendent, assisted by special conductors and workers, during the season 1909-10, conducted 132 two-day institutes, 41 cooking schools and an annual three-day Round-up at Two Rivers, Manitowoc County, March 15-17, 1910.

A hand-book containing a report of the Round-up is issued annually in an edition of 50,000 copies and distributed free at institutes. A cook book is also issued in an edition of 10,000 copies for distribution at the cooking schools.

COURSES IN HOME ECONOMICS

The Department of Home Economics is connected with the College of Agriculture for administrative purposes and the faculty of this College gives instruction in certain subjects, such as food chemistry, bacteriology, and entomology.

The faculties of the various other colleges, schools and courses of the University give instruction in certain required and elective subjects offered to students taking the Course in Home Economics.

FACILITIES FOR INSTRUCTION

The Department of Home Economics is located in Lathrop Hall, where office, class rooms and laboratories are provided. The department is provided with all the necessary furnishings and apparatus to give thorough instruction in the subjects of house management and sanitation, art and design, food preparation, cooking and dietetics, textiles and house decoration.

The new equipment of the department and the well appointed laboratories, give an opportunity for theoretical and practical training in Home Economics not heretofore available. There is abundant opportunity for study and practice both individually and in classes.

The work in chemistry and bacteriology, as applied to Home Economics, is done in sections of the laboratories set aside for this work. The courses given in the College of Letters and Science are taken in various class rooms of that college. Electives chosen may be given in other colleges of the University according to the nature of the work. Women taking the course in Home Economics are granted the same privileges of residence in Chadbourne Hall, women's dormitory, and in the use of the women's gymnasium, etc., as other women in the University.

TERMS OF ADMISSION

Students are admitted to this department on the same basis as are students of other courses in the University. See Index under Entrance Requirements

FEES AND EXPENSES

See Index under Laboratory and Tuition Fees.

DEGREE

The degree of Bachelor of Science (Home Economics) is conferred upon those who complete the long course in Home Economics.

SCOPE OF THE COURSES IN HOME ECONOMICS

The Department of Home Economics offers the following courses which deal with the principles which underlie the proper management of the home, care of children, hygienic and sanitary conduct of institutions and the economic conditions affecting the work of women.

The courses are planned to meet the needs of four classes of students:

1. Those students who desire a general knowledge of the subject matter as a basis for application in the study of the general arts and sciences as a part of a liberal education;
2. Those students who desire to make a detailed study of Home Economics in its relation to the arts and sciences which are fundamental in the management of the home;
3. Those students who wish to teach Home Economics in the secondary schools and in higher institutions;
4. Graduate students who have the requisite knowledge to benefit by research work in subjects connected with the home.

The courses in the related sciences as chemistry, physics, physiology, zoology, bacteriology and economics are given in the different colleges of the University.

OUTLINE OF LONG COURSE IN HOME ECONOMICS

Freshman Year

FIRST SEMESTER	Credits.
English 1, (L. & S.) a study of the elements of efficient writing with practice in composition.....	3
German or French, (L. & S.) general courses adapted to the requirements of the student.....	4
Chemistry 1, (L. & S.) lectures and laboratory work in general chemistry and quantitative analysis.....	5
Home Economics 2, Art and Design.....	3

SECOND SEMESTER		Credits.
English	} Same as first semester.....	3
German or French,		4
Chemistry		5
Home Economics 3, Selection and Preparation of foods.....		3
		15

Sophomore Year

FIRST SEMESTER		Credits.
Physics 1, (L. & S.) lectures and laboratory practice in general Physics		5
Chemistry, Household 1.....		5
Bacteriology 1, (L. & S.) a general course of lectures and laboratory work designed to give an introductory understanding of both cultural and microscopical technique with bacteria		3
Home Economics 4, Economics of food supply.....		3
		16

SECOND SEMESTER		Credits.
Physics 1, (L. & S.) same as first semester.....		5
Bacteriology, Applied 9, (L. & S.) lectures and laboratory work with bacteria as concerned with water, milk, other food supplies and materials to be found in the household.		3
Physiology 1, (L. & S.) a general course of lectures on the elements of human anatomy and physiology.....		3
Home Economics 5, Textiles.....		4
		15

Junior Year

FIRST SEMESTER		Credits.
Home Economics 6, Dietetics.....		5
Home Economics 7, Home Architecture and Sanitation.....		5
Electives to be chosen as indicated below.....		5
		15

HOME ECONOMICS

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SECOND SEMESTER

Home Economics 8, Household Decoration.....	4
Home Economics 9, Humanics.....	4
Electives to be chosen as indicated below.....	7
	15

Senior Year

FIRST SEMESTER

Home Economics 10, Household management.....	3
Thesis to be assigned in connection with major study.....	2
Electives to be chosen as indicated below.....	10
	15

SECOND SEMESTER

Home Economics 20, Seminar.....	1
21, Teachers' course.....	2
Thesis	2
Electives to be chosen as indicated below.....	9
	14

ELECTIVES

Opportunity is given in the Junior and Senior years for the election of related courses of study in various lines adapted to the requirements of the students. Information concerning electives will be furnished students upon registration.

The following electives are recommended for those desiring to teach Home Economics: Biology; Chemistry 11a (Qualitative); Chemistry 20 (Organic) 1st semester; Agricultural Chemistry 5; Elements of Economics 1; Economic Statistics 31; Social Psychology 39; Charities and Corrections 41; Education 13b; Education 41; Psychology 1; Experimental Psychology 3 and 4; Floriculture 8; History; Economic Entomology 6.

The requirements for major in Home Economics are not less than 36 credits nor more than 40 credits.

The requirements for a minor in Home Economics are not less than 20 credits.

THESIS

All candidates for a degree from the University are required to present a graduating thesis which must be acceptable to the professor at the head of the department. Theses must represent original work upon some subject which has been arranged after consultation with the student's adviser and the head of the department in which the work is done.

DESCRIPTION OF COURSES IN HOME ECONOMICS

PROFESSOR MARLATT, MISS HOPE, AND MISS LOOMIS

Primarily for Undergraduates

1. General Survey of Home Economics. Reference books: "Library of Home Economics." Subjects included are food and care of the sick; household chemistry; bacteria in the home; the house plan; textiles; house decoration. *Three credits; throughout the year; lectures, Tu., Th., 9; one laboratory period per week.* MISS MARLATT, MISS HOPE, and MISS LOOMIS.
2. Art and Design. A study of principles of design; rhythm, harmony and balance. Creative exercises; lectures on the theory of color and its application in wall paper, rugs, draperies, and a study of the evolution of design form a part of the course. *Three credits; first semester; lectures, M., 9; two laboratory periods per week.* MISS HOPE.
3. Principles of the Selection and Preparation of Food. Nature and use of food; its composition as affected by heat, cold, fermentation and digestion. Prerequisites are entrance credit in physics or chemistry or first semester of Chemistry 1. *Three credits; second semester; lectures, W., F., 9; two laboratory periods per week.* MISS MARLATT, and MISS LOOMIS.
4. Economic Problems of Food Supply. Continuation of Course 3. Purchase and manufacture of foods; the use of preservatives and tests for adulterations; pure food laws; time saving devices in preparation of food. Prerequisites, Chemistry 1, Home Economics 3. *Three credits; first semester; lectures W., F., 9; two laboratory periods per week.* MISS MARLATT, and MISS LOOMIS.

5. Textiles. Evolution of, microscopic study of, chemical treatment and tests for purity in composition and harmful coloring material; hygienic aspect of clothing; problems of shrinkage and tensile strength; economic problems, the artistic aspect in study of color and design in costumes. Prerequisites, Chemistry 1, Home Economics 2. *Four credits; second semester; lectures, Tu., Th., 11; two laboratory periods per week.* Miss HOPE and Miss
6. Dietetics. Dietary standards; balanced rations; diet as influenced by age, sex, and occupation; construction of dietaries and service of meals; dietetic treatment in disease and principles of home nursing. Prerequisites, Home Economics 3-4, Physiology 1, Bacteriology 1-9, Chemistry 1, Home Economics Chemistry. *Five credits; first semester; lectures, M., W., F., 11; two laboratory periods per week.* Miss MARLATT and Miss LOOMIS.
7. Home Architecture and Sanitation. Evolution of the home; modern houses: situation, surroundings, construction, hygienic, economic and artistic conditions; soil, drainage, ventilation, lighting, heating, water supply and arrangement of space, field excursions and practice in drawing skeleton floor plans and elevations of houses suited to varying conditions. Prerequisites, Chemistry 1, Physics 1, Bacteriology 1, Home Economics 2. *Five credits; first semester; lectures, M., W., F., 10; two laboratory periods per week.* Miss MARLATT.
8. Household Decoration. Floor coverings and wall hangings; lectures on history of furniture with practical problems in designing furniture, pictures and their use as decorative units; designing interiors; economic problems in house furnishing. Prerequisites, Household Economics 2, 5, 7. *Four credits; second semester; lectures W., F., 9; two laboratory periods per week.* Miss HOPE.
9. Humanics. Development of the individual from infancy to adolescence, problems of hygiene and mental development as influenced by heredity, nutrition, housing problems in homes and in institutions and habit formation. Prerequisites, Physiology 1, Physics 1, Chemistry 1, Household Chemistry, Bacteriology 1 and 9, Home Economics 2, 3, 4, 5, 6, 7, 8. *Four credits; second semester; lectures, M., W., F., 10; quiz W., 11.*

10. Household Management. Organization of the household; the division of the income; care of the house and family; hygienic and artistic furnishing; chemistry of cleaning metals, wood, fabrics; use of disinfectants. Prerequisites, Chemistry 1, Bacteriology 1 and 9, Physics 1, Home Economics 2, 3, 4, 5, 6, 7, 8, 9. *Three credits; first semester; lectures, Tu., Th., 11; one laboratory period per week.* Miss MARLATT.

For Undergraduates and Graduates

20. Seminar. Advanced work in problems connected with home, institutional management and the Home Economic movement in education. *One credit; second semester.* Miss MARLATT, Miss HOPE.
21. Teachers' Course. Existing courses in Home Economics. Practice in planning courses and equipment for various types of institutions and observation and practice work in presentation is afforded. Prerequisites, Home Economics 2, 3, 4, 5, 6, 7, 8, 9, 10. *Two credits; second semester.* Miss MARLATT.

HOUSEHOLD CHEMISTRY, BACTERIOLOGY AND ECONOMIC ENTOMOLOGY.

For descriptions of courses in Household Chemistry, Bacteriology and Economic Entomology, see Index under these subjects.

THE MEDICAL SCHOOL

C. R. BARDEEN, Dean, Professor of Anatomy.

Organization

During the legislative session of 1907, a bill was passed authorizing the establishment of a Medical School at the University. The complete curriculum of the first two years of the medical course is given. Lack of adequate clinical facilities prevents the establishment at Madison of the last half of the medical course. Full credit will, however, be granted at leading schools for work at Wisconsin, so that on the completion of the work here the student may go to some school with abundant hospital and clinical facilities for the completion of his course by two years of further study.

Aims and Methods

The aims of the Medical School are fourfold:

1. To encourage a thorough preliminary medical education, and to offer adequate facilities for a thorough preparation for clinical work.
2. To aid physicians and others in the state to keep up with the rapid advances in the application of science to medicine.
3. To promote the development of preventive medicine and hygiene.
4. To stimulate research in the sciences upon which modern medicine is based.

Admission Requirements in the Medical School*

For unconditional matriculation in the Medical School, a student must furnish evidence:

1. That he has satisfied the requirements for admission to the College of Letters and Science.

* Four medical schools in this country require for unconditional matriculation a degree from a college of liberal arts or science; one school requires three years of work in a literary or scientific college; eight require two years of work, and over fifty schools require now, in addition to a four year high school course, one or two years of college work devoted especially to physics, chemistry, biology and language. The National Confederation of State Licensing and Examining Boards, in June, 1906, adopted this as the minimum standard to apply to all students beginning the study of medicine after January 1, 1910.

The State Medical Board of Minnesota requires evidence of the completion of the sophomore year in an approved college.

2. That he has completed at least the full equivalent of two years' work in this College.
3. That he has successfully pursued laboratory courses of collegiate grade in physics, chemistry, and biology.
4. That he has studied Latin grammar and possesses such knowledge of the language as may be acquired by reading at least three books of Caesar or their equivalent.
5. That he has a reading knowledge of French and German.

Admission to Advanced Standing

A student who has completed elsewhere work equivalent to that required for matriculation and to that of the first year of the medical curriculum, may be admitted to the second year of the medical course.

Medical Certificate

Upon the successful completion of the two years of the medical curriculum at Wisconsin, a student will be given a formal certificate at the following commencement. A student who completes less than the two years of the medical course may, however, obtain credentials covering the pre-medical and medical studies which he has pursued.

Degrees

The Medical School offers merely the first two years of a four-year medical curriculum and confers no degrees. The College of Letters and Science confers the degree of Bachelor of Science upon the students registered during the junior and senior years in the Medical School, and the degree of Bachelor of Science or of Bachelor of Arts upon students registered during the senior year in the Medical School. The degrees of Master of Science and Doctor of Philosophy are conferred by the University faculty upon graduate students who specialize in the medical sciences and fulfill the usual requirements for these degrees.

Bachelor of Arts

The regular requirements for the degree apply to those students who elect the work of the first year of the medical course during the senior year in the College of Letters and Science.

Bachelor of Science**(Medical Science Course)**

Students in the College of Letters and Science who are candidates for this degree are required to meet the following requirements:

a. English, 6 credits (3 hours a week per semester) to be taken in the first year of residence.

b. Language: A reading knowledge of German and French, at least as much as may be acquired by taking Course 2 in German and Course 1 in French; Latin grammar and such knowledge of the language as may be acquired by reading three books of Caesar or their equivalent. Only that portion of these language requirements not satisfied at entrance is required in college. There is no specific demand for from sixteen to twenty-four unit-hours of language such as applies to candidates for the degree of Bachelor of Arts.

c. Courses in physics, chemistry, biology and the medical sciences as outlined in the requirements of the Medical School. The requirement made of candidates for the degree of Bachelor of Arts that six credits shall be elected in either history or mathematics does not apply to candidates for the degree of Bachelor of Science (Medical Science Course).

d. For graduation 128 credits are required. A student may carry fourteen to eighteen credits' work per semester. The requirements for gymnasium work and military drill are the same as those for the degree of Bachelor of Arts.

e. For major study and thesis the requirements are the same as for the degree of Bachelor of Arts.

CHOICE OF COURSES

The student who enters the College of Letters and Science with the intention of studying medicine should arrange his work according to one of the following plans:

1. Six-Year Combined Course. (Leading to the B. S. and M. D. degrees.)

If the student has had a thorough preparation in the high school, he may take work in the freshman and sophomore years which will enable him to matriculate in the Medical School in his junior year, receive the B. S. degree and a certificate for two

years of medical study at the end of the senior year, and complete his medical course by two years' further study in any medical school which does not require more than two years of college work for entrance. During the freshman and sophomore years, such a student will have to confine himself closely to the work in science and language required for matriculation in the Medical School. The exact choice of studies will depend somewhat upon the high school training and the ability of the student.

The following schedule is suggested:

Freshman Year

- English I. Three hours a week. 3 units.
 Physics I. Lectures.—M., Tu., W., Th.—12.
 two laboratory periods.
 Quiz.—5 units.
 Foreign language. 3—5 units.
 French or German, if Latin is presented for entrance.
 Latin, if it is not presented for entrance.
 Chemistry I. Lectures.—M., W., F.—10.
 Laboratory.—Three two-hour periods per week.
 Quiz.—Tu.—11. 5 units.

If desired, Biology I may be taken instead of Physics I.

Sophomore Year

- Foreign Language (French or German) 3—4 units.
 Organic Chemistry. Lectures.—Tu., Th. 8.
 Laboratory.—Tu., Th. 2—4. 4 units.
 (One semester of this course is required. It may be taken for two semesters.)
 Biology I. Lectures, M., W., 3; laboratory, 8 hours per week; one quiz.
 5 units.
 If Biology I is taken in the freshman year, Comparative Anatomy and Embryology are recommended for the sophomore year.

2. Seven-Year Combined Course. (Leading to the A. B. and M. D. degrees.)

In this course the student matriculates as a first-year medical student during his senior year in the College of Letters and Science; receives the A. B. degree upon graduation and takes the second year of the medical course as a graduate student. He can then finish the clinical portion of the medical course by two years' further study, thus making the combined arts and medical course seven years. This course is in many ways preferable to the six-year combined course, since it permits a greater freedom of election and a broader course of study. The language and science work should follow somewhat the lines laid down for the freshman and sophomore years in the six-year combined course, but it can be more spread out and taken in conjunction with various electives to suit the needs and inclinations of the student.

3. Complete Arts Course Preceding the Medical Course

Students who can afford the time should take the complete arts course before beginning the technical work of the medical course. A bright, well trained student not infrequently manages to take the A. B. degree in three years. For such a student, the time needed for the two degrees would be the same as that mentioned above. For other students eight years is required, four for the A. B. course and four for the medical course. A far broader training is thus afforded than in the shorter combined course. Students expecting to finish the clinical part of the medical course at Harvard, the Johns Hopkins, Cornell, or Western Reserve University must choose either the course of study mentioned above or the seven-year combined course. The work in sciences and foreign language should include all of that mentioned in the first two years of the six-year combined course and may profitably extend beyond this.

Medical Studies

Two years of work in the fundamental medical sciences are arranged in accordance with the schedules which prevail in those medical schools that have high standards for their entrance requirements. The chief studies of the first year are systematic human anatomy, histology, neurology, and physiological chemistry. A preliminary course in physiology is also given. Some opportunity is offered for making up conditions in chemistry, embryology or language, or for advanced work. In the second year, practical physiology, psychology, pathological anatomy and physiology, bacteriology, pharmacology and toxicology are the chief subjects. The subjects are arranged in conjunction with those of the pre-medical courses, so that a logical sequence of studies may be followed, and that the student may concentrate his work upon closely allied subjects. While it is believed that the arrangement of courses recommended will best fit the needs of the average student, considerable freedom of election will be allowed both in the pre-medical work and in the work in the Medical School, especially to those who finish the arts course before taking the medical course, or to those taking the seven-year combined course. Full credit for one year of medical work will not, however, be allowed unless the required preliminary studies and the studies of the first year of the medical course have been completed, and the

student has been registered two semesters in the Medical School. Full credit for two years of medical work will be granted only to those who have satisfied the preliminary requirements, who have registered for two college years as medical students, and who have completed all the required studies of the curriculum.

First year:

Histology, M, W., F., 9-12, first semester.

Neurology, M., W., 9-12, second semester.

Physiological Chemistry, Tu., Th., 10-12; W., F., 10-1, second semester.

Physiology (preliminary), Tu., Th., 12-1, second semester.

Human Anatomy, daily, 8-5. At least twelve hours per week required.

Bacteriology 1 is an elective in the first year of the medical course. If preferred, it may be taken in the second year. Organic chemistry and embryology are required in the first year of the medical course if not presented for matriculation.

Second year:

Topographical Anatomy, Tu., Th., 2-5, first semester (elective).

Physiology lectures, daily, 12, first semester; laboratory, M., W., F., 2-5; first semester to Christmas.

Psychology, lectures, M., W., 11, first semester to Christmas; laboratory, 2-5, twice a week, Christmas to the end of the first semester.

Pathology, M., W., F., 8-12, first and second semesters. Eight hours per week required, four elective.

Bacteriology, Protozoology and Hygiene, Tu., Th., S., 11, and six hours' laboratory work; second semester. A preliminary course in bacteriological technique is given between Christmas and the end of the first semester for those who have not had a course in general bacteriology; lectures, Tu., Th., 10; laboratory, Tu., Th., 8-10.

Pharmacology and Toxicology, lectures, M., Tu., Th., F., 2; laboratory, W., 2-5, second semester.

Physical diagnosis, M., W., F., 12; second semester (elective).

Thesis (required of candidates for B. A. and B. S. degrees).

Four hours per week, two semesters.

When work of the medical course is elected previous to matriculation in the Medical School, advanced work in some of the medical sciences may be elected in the medical course.

SUMMARY

Summary of the college work in science required at Wisconsin* for matriculation and for formal certificates for the medical course:

<i>Subject</i>	<i>Lectures and Recitations</i>	<i>Laboratory Hours</i>	<i>Credits Unit Hours</i>
<i>Preliminary—</i>			
Chemistry	128	192	10
Physics	160	128	10
Biology	96	256	10
	384	576	30
<i>Studies required in first year of medical course if not presented for matriculation.</i>			
Organic Chemistry	48	96	4
Embryology	32	64	3
	80	160	7
<i>First Year Medical Course—</i>			
Histology	32	112	4
Neurology	32	64	3
Gross Anatomy	32	352	12
Physiology	32		2
Physiol. Chemistry	20	140	4
	148	668	25
<i>Second Year Medical Course—</i>			
Physiology	80	108	7
Pathology	96	160	8
Bacteriology and Hygiene....	48	96	5
Pharmacology and Toxicology	64	80	5
	288	428	25

* It is recognized that similar courses at other institutions may not correspond exactly with the scientific courses given at Wisconsin. This will not prevent full credit being granted for approximately equivalent courses pursued elsewhere.

Required of students who have not previously taken courses in general bacteriology and in psychology.

<i>Subject</i>	<i>Lectures and Recitations</i>	<i>Laboratory Hours</i>	<i>Credits Unit Hours</i>
Bacteriological Technique ...	6	24	1
Psychology	32	24	3
Required of candidates for the B. S. degree			
Thesis		128	4

Courses for Physicians

The regular courses in the various departments are open to physicians on the adult special basis. It is hoped gradually to develop such shorter special courses as may be of greatest direct, practical benefit to the physicians of the state in aiding them to keep up with the rapid advance in the medical sciences. Suggestions concerning such courses are desired.

Courses for Health Officers

In conjunction with the State Department of Public Health, it is intended to develop such special courses for public health officers as may be of greatest aid to them in the performance of their important and difficult duties. Suggestions concerning such courses are requested from all interested in the subject.

Sanitary Engineering

Courses in Sanitary Engineering are given in the College of Engineering. See Index under Engineering and special bulletins of the College of Engineering.

Scientific Investigation

It is desired that the facilities of the various laboratories of the Medical School be utilized to the greatest advantage in the investigation of the causes and prevention of disease both in man and animals. The laboratories of the Medical School are freely open to those engaged in such investigations, and so far as possible, aid will be given in the carrying out of investigations of this character either at the University or elsewhere in the state.

FEES AND EXPENSES

The total amount of incidental and laboratory fees per year for pre-medical and medical students will range from about \$60.00 to \$80.00 according to the amount of laboratory work taken. For details of general and laboratory fees in this college, see Index.

DEPARTMENTAL ANNOUNCEMENTS

For a description of the courses in botany, zoology, chemistry, physics, psychology, climatology and languages, see departmental announcements in the College of Letters and Science.

ANATOMY

PROFESSOR BARDEEN; ASSOCIATE PROFESSOR MILLER; ASSISTANT PROFESSOR ALLEN; MR. WAHL

A group of courses intended to offer a comprehensive view of the gross and microscopic anatomy and the embryology of vertebrates with special reference to man, is given in this department. In addition, opportunities are offered for advanced work and research in anatomy. The laboratory is thoroughly equipped with apparatus, models, books and materials for advanced as well as elementary work.

For those prepared to carry on advanced research, special laboratory facilities are provided.

A Journal Club meets bi-weekly for the discussion of important contributions to anatomical science.

For Undergraduates and Graduates

5. Comparative Anatomy of Vertebrates. A series of seven animals is dissected for the study of vertebrate structure, and numerous demonstrations are given of the structure of related forms. *M., W., F., 2 to 4. Three credits.* The work of either or both semesters may be taken. Mr. ALLEN.
6. Medical Zoology. This course embraces the study of the structure of a number of animal types of especial interest in medicine. Attention will be paid to the physiology and life history of the types studied. *First semester; Tu., Th., 2 to 4. Two credits.* Mr. ALLEN.

10. Histology and Organology. The study of the tissues, histology, is first taken up, and this is followed by the study of the minute structure of the chief mammalian organs. *First semester; M., W., F., 9 to 12. Four credits.* Dr. MILLER.
15. Vertebrate Embryology. The development of the frog, chick and pig is studied by means of dissection and the use of microscopic preparations. Human embryology is studied from sections, special preparations and models. *Second semester; Tu., Th., 2 to 5. Three credits.* Dr. BARDEEN and Mr. ALLEN.
16. Embryology of the turtle and chick. *Second semester; Tu., Th., 10 to 12. Two credits.* Mr. ALLEN.
21. Human Anatomy. In this course a thorough training is offered in the dissection of the human body, and in descriptive human anatomy. *Throughout the year; daily, 8 to 5. At least 12 hours' laboratory work per week required. Six credits per semester.* Dr. BARDEEN.
22. Topographical Anatomy. A study of frozen sections and special preparations. *First semester; Tu., Th., 2 to 5. Two credits.* Dr. MILLER.
23. Special Human Anatomy. Those qualified to do independent work may make special arrangements for the study of human anatomy.
26. Neurology. This course consists of dissection of the human brain, and a study of the microscopic anatomy of the central nervous system and sense organs. Open only to those who have taken courses 10 and 15, or their equivalents. *Second semester; M., W., 9 to 12. Three credits.* Dr. MILLER.
30. Advanced Work in Anatomy. Opportunity for advanced study in the field of human and comparative anatomy, gross and microscopic, in embryology and experimental morphology, and in laboratory technique is offered to properly qualified students. This work will be done under the direction of various members of the staff.
31. Historical Seminary. This meets bi-weekly for the study of the history of anatomy and related subjects. *One credit.* Dr. MILLER.

Primarily for Graduates

35. Investigation under direction. To qualified students the department is prepared to offer problems for investigation and training in methods of research. Special arrangements for this work may be made with the individual members of the staff.
36. Journal Club. This meets by-weekly for the study of current scientific articles relating to anatomy.
40. Independent investigation. The department will welcome independent investigators who wish to make use of its facilities for conducting research in anatomy.

BACTERIOLOGY AND HYGIENE

PROFESSOR RAVENEL; ASSOCIATE PROFESSORS FROST, HASTINGS; DR. BROWN, DR. FULLER, MR. NELSON; MISS ARMSTRONG, MR. NEUMANN.

For students desiring a general laboratory course in Bacteriology, course 1 should be taken. Chemistry and General Biology should precede this work. On the basis of this general course, the student is then able to take up special work in Medical Bacteriology. Course 1 is a prerequisite for major work in Medical Bacteriology.

Primarily for Undergraduates

1. General Bacteriology. *First semester; lectures Tu., Th., 11; laboratory work four hours a week. Three credits.* Mr. FROST, Mr. FULLER, Mr. NELSON, Mr. NEUMANN, Miss ARMSTRONG.
2. Medical Bacteriology. This course, which is especially designed for medical students, considers the bacteria and protozoa that are especially concerned in the production of disease processes. Students who have not taken course 1 are required to take course 2a before beginning course 2. *Second semester; lectures Tu., Th., and S., 11; and six hours' laboratory work. Five credits.* Dr. RAVENEL, Mr. FROST, and Dr. BROWN.
- 2a. Bacteriological technique. *Lectures Tu., Th., 10; and four hours' laboratory work. -From the end of the Christmas vacation to the end of the second semester. One credit.* Mr. FROST.

3. Thesis work. Dr. RAVENEL, Mr. FROST.
4. Topical Work in Bacteriology. Dr. RAVENEL, Mr. FROST.
5. Research Work in Bacteriology. Dr. RAVENEL, Mr. FROST.
6. Communicable Diseases. *Second semester; one credit.* Mr. FROST.
7. General Hygiene. *First semester; one credit.* Mr. FROST.
8. Biology of Water Supplies. Lectures and laboratory work. *Second semester; three credits.* Dr. RAVENEL, Mr. FULLER.
11. Immunity. Includes a study of the phenomena and theories of immunity in general as well as the various infectious diseases. Lectures and reports. Open only to advanced students. *First semester; one credit.* Dr. RAVENEL.
- 11a. Laboratory Course in Immunity. This is an experimental course and includes a study of cytotoxins, agglutinins, precipitins, toxins, antitoxins, opsonins, etc. *First semester; two or more credits.* Mr. FROST.
12. Pathogenic Protozoa. This includes a study of the most important of the protozoa known to cause human and animal diseases. Open only to advanced students. Lectures, demonstrations and reports. *Second semester; one credit.* Mr. FROST.
40. Journal Club for instructional force and advanced students. Meets every second week throughout the year.

CLINICAL MEDICINE

PROFESSOR EVANS, DR. DOBSON, MISS STEARNS.

1. Clinical Diagnosis. *Second semester; lectures, M., W., F., 12. Laboratory, two to four hours. Two credits.* Dr. EVANS, Dr. ELSOM, Dr. DOBSON.

PATHOLOGY

PROFESSOR BUNTING; DR. BROWN.

Courses 1, 2, and 3 are open to students who have successfully completed courses in histology and embryology. Courses 1 and 2 are required of medical students. Course 3 is optional and is limited to 6 students.

1. General Pathology. The principles of general human pathology and the essentials of pathological anatomy. The laboratory exercises will be devoted mainly to a study of pathological histology and to demonstration of gross morbid specimens. *First semester; M., 8; W., 8 to 11; F., 8 to 12. Four credits.* Dr. BUNTING, Dr. BROWN.
2. Special Pathology. The course is a continuation of course 1, and in it special pathology and special pathological anatomy will be treated in a similar manner. *Second semester; M., 8; W., 8 to 11; F., 8 to 12. Four credits.* Dr. BUNTING, Dr. BROWN.
3. Experimental Pathology. In this course by suitable experiments the work of courses 1 and 2 will be supplemented and elaborated. *First and second semesters; M., 9 to 12. Two credits.* Dr. BUNTING, Dr. BROWN.
4. Advanced Courses. To a limited number of students who have completed courses 1 and 2 or their equivalent, opportunity is offered for advanced work in pathology under the direction of Dr. BUNTING.
5. Journal Club. In conjunction with the departments of Physiology and Pharmacology, the recent literature of medical science is reviewed and discussed. *Throughout the year. Tu., 10.*

PHARMACOLOGY AND TOXICOLOGY

PROFESSOR LOEVENHART. Mr. ARKIN.

Elementary and advanced courses in pharmacology and toxicology are offered in this department. For the elementary courses a previous training in physiological chemistry and physiology is required. The advanced courses are open to those who have had adequate elementary training.

1. Toxicology. Lectures on the general action of toxic drugs, on diagnosis of poisoning, treatment, and the mode of conducting an autopsy when the tissues are to be subsequently examined chemically in medico-legal cases. *First month, second semester; M., Tu., Th., F., 2. One credit when accompanied by course 2.* Dr. LOEVENHART.

2. Toxicology. Laboratory course. A chemical study of the principal volatile poisons, the alkaloids, the glucosides and the metallic poisons. Special attention is given to the chief tests for the identification of these poisons. *First month, second semester; W., 2 to 5.* Dr. LOEVENHART and Mr. ARKIN.
4. Pharmacology. Lectures on the chemistry, the pharmacological, toxicological actions and the therapeutic uses of the chief medicinal drugs. Practice in prescription writing. From the conclusion of course 1 to the end of the second semester. *M., Tu., Th., F., 2. Three credits.* Dr. LOEVENHART, Mr. ARKIN.
5. Pharmacology. Laboratory course. Experimental studies of the action of drugs. From the conclusion of course 2 to the end of the semester. *W., 2 to 6, and four extra periods. One credit.* Dr. LOEVENHART, Mr. ARKIN.
8. Advanced Work. Those qualified to undertake advanced work and research in pharmacology and toxicology may make arrangements for conducting such work under the supervision of Dr. LOEVENHART.
12. Independent Investigation. To anyone qualified to carry on work of this character the facilities of the laboratory are available.
16. Journal Club. A meeting of the Journal Club is held weekly. Advanced students will be expected to report from time to time upon current papers dealing with pharmacology and toxicology. *Throughout the year; Tu., 9.*

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR ERLANGER; ASSISTANT PROFESSOR BRADLEY; DR. MEEK,
MR. PETERSEN.

The following courses are designed especially for students intending to study medicine. Course 4 is open only to those who have had a previous training in General and Organic Chemistry (courses 1 and 20), Physics (course 1) and General Biology (course 1). As a preparation for course 5, Comparative Anatomy, Histology, and Neurology (Anatomy 5, 10 and 26), and course 4 are required.

4. Physiological Chemistry. (a) Lectures. These give a brief summary of the province of physiological chemistry. (b) Laboratory course. *Second semester; four credits.* Dr. BRADLEY.
5. Physiology. Lectures and demonstrations. *Second semester; Tu., Th., 12. Two credits.* Dr. ERLANGER, Mr. MEEK.
6. Physiology. (a) Lectures and demonstrations. *First semester; M., Tu., W., Th., F., 12. Five credits.* (b) Laboratory work. First semester until Christmas recess; *M., W., F., 2 to 5. Two credits.* Course 5 is prerequisite. Dr. ERLANGER, Mr. MEEK.

Primarily for Graduates

8. Advanced Laboratory Course in Physiology. This course is designed primarily for teachers of animal physiology as well as for physicians and students of medicine who desire a wider experience in experimental physiology than can be gained in courses 5 and 6. The instruction is given individually and may involve undertaking a definite investigation. Dr. ERLANGER.
10. Advanced Laboratory Course in Physiological Chemistry. This course corresponds to Course 8.

THE SCHOOL OF MUSIC

EUGENE LUENING, Acting Director.

General Announcement

It is the purpose of the School of Music to furnish superior facilities for the study of music in all of its departments, theoretical or practical. Instruction is offered in piano, organ, violin, singing, and in musical theory, history of music, choral practice, harmony, counterpoint, composition, and methods in public school music. In the study of instruments or singing (voice culture) instruction is given by means of private or individual lessons. In the theoretical studies students are expected to join the University classes, but by special arrangement these studies may be taken in private lessons.

Some changes have been made with the design of bringing the School of Music into better accord with the other schools and colleges of the University. The most important of these is the abolishment of the academic department. It is believed that these changes will result in advantage to students of collegiate grade.

Students who have been heretofore classified as collegiate will be continued without other formality than registration.

New students must meet the entrance requirements for admission to the university as set forth on pp. 80-96.

Students wishing to enter the School of Music will apply to the registrar, Room 158, University Hall.

Special students who have unusual musical talent may be admitted to the School of Music on the recommendation of the faculty of the school, although they may not be able to fully satisfy the entrance requirements.

It should be observed that special instruction in vocal or instrumental music of any kind may be taken by students not otherwise connected with the University, and that such students are not required to pay the incidental fee required of all University students, but these students must be able to satisfy the entrance requirements as stated above.

The general classes in harmony, counterpoint, history of music, musical composition, methods in public school music, principles of music education, musical appreciation, masterpieces of music, and choral music, may be taken as electives by students of the College of Letters and Science, freshmen excepted, and credit will be given on the same basis as for other collegiate studies. These credits to students of the University other than students of the School of Music are limited to twenty. These classes are likewise open to students of the other colleges and schools of the University without extra fees.

Students of the School of Music not otherwise connected with the University are admitted to these classes on the payment of the usual incidental fee charged to students of the College of Letters and Science (\$12 per semester).

A statement of musical courses will be found under Music in the College of Letters and Science.

MUSICAL REQUIREMENTS FOR ENTRANCE

Organ

No previous knowledge of organ playing is required. But the student must be well grounded in piano playing, must possess a correct technique, and be able to read plain four-part music.

Piano

Applicants for admission will be expected to play music of the grade of Mozart's *Sonata in D major No. 3*, Peters Edition; Loeschhorn, *Op. 52* and *Op. 66*; Bach, *Little Preludes*.

Voice

The student must be able to read simple music and must have had an amount of training equal to the first half of Concone's *Fifty Lessons*, with the usual technical study for the same period.

The course in applied music covers four years, two half-hour lessons per week, or the equivalent, in organ, piano, voice or violin, including the study of music of the classic, romantic and modern schools.

The Course of Study, Pursuant to the Degree of Graduate in Music

FIRST YEAR.

First Semester: Instrument or Voice, 2 half-hours per week, 2 credits; Theoretical Subjects, a. Elements of Music, 2 credits; b. Harmony, 2 credits; c. Ear-training and Sight-reading, 1 credit; English, course 1, 3 credits; French, German or Italian, 4 credits; Physical Training. Second Semester: Instrument or Voice, 2 half-hours per week or equivalent, 2 credits; Theoretical Subjects, a. Harmony, 2 credits; b. Ear-training and Sight-reading, 1 credit; c. Musical Form, 2 credits; English, course 1, 3 credits; French, German or Italian, 4 credits; Physical Training.

SECOND YEAR.

First Semester: Instrument or Voice. 2 half-hours per week or equivalent, 2 credits; Theoretical Subjects, a. Advanced Harmony, 2 credits; b. Ear-training and Sight-reading, 1 credit; c. History of Music, 2 credits; French, German or Italian, 4 credits; English, course 30, or other elective in English, 3 credits; Elective, 2 credits; Physical Training. Second semester: Instrument or Voice, 2 half-hours per week or equivalent, 2 credits; Theoretical Subjects, a. Advanced Harmony, 2 credits; b. Ear-training and Sight-reading, 1 credit; c. History of Music, 2 credits; French, German or Italian, 4 credits; English, course 30, 3 credits; Elective, 2 credits; Physical Training.

THIRD YEAR.

First Semester: Instrument or Voice: 2 half-hours per week or equivalent, 2 credits; Theoretical Subjects, a. Counterpoint, 2 credits; b. Physics, Course in Acoustics, 2 credits; c. Musical Appreciation, 2 credits; English, French, German, or Italian Literature, 3 credits; Elective, 4 credits. Second semester: Instrument or Voice, 2 half-hours per week or equivalent, 2 credits; Theoretical Subjects, a. Counterpoint, 2 credits; b. Masterpieces of Music, 2 credits; English, French, German or Italian Literature, 3 credits; Elective, 6 credits.

FOURTH YEAR.

First Semester: Instrument or Voice. 2 half-hours per week or equivalent, 2 credits; Theoretical Subject, a. Instrumentation, 2 credits; Ensemble Playing, 1 credit; Public Speaking, course 12a (Elocution), 3 credits; Elective, 5 credits; Work on thesis or on recital, 2 credits. Second Semester: Same as first semester.

All candidates for the degree of Graduate in Music are required to pursue their studies in accordance with the above schedule.

Voice students are subject to the following exceptions: *First*, at least two years of piano study are required in addition to the prescribed work in voice, but the second year of piano study is substituted for elective in the second year; *Second*, the Ensemble Playing of the fourth year is not required; *Third*, membership in the Choral Union is obligatory, unless excused by the director; *Fourth*, Counterpoint is not required.

Organ students are subject to the following exception: Those not sufficiently proficient may be required to take work in piano during the first and second years, this to be decided by the instructor and the director.

Violin students are required to take two years of piano study in addition to the prescribed work in violin, and may substitute those credits for elective.

One hundred and twenty credits are required for graduation. There is opportunity for a liberal choice of electives in addition to the required studies enumerated above. These may be chosen from other courses offered by the School of Music, or by other departments of instruction in the university on consultation with the director or an adviser appointed by him.

Students must prove their efficiency before their graduation either by giving a recital or writing a thesis on a given topic. Students are allowed a choice of these alternatives on consultation with the director or an adviser appointed by him. Two credits are allowed for either recital or thesis.

Required hours for graduation: 15 hours (each counted as one credit) per week for four years, but these may occasionally be reduced to 14 hours or increased to 16 hours for a single semester, according to the number of hours offered in a particular subject. No student is required to take more than 120 credits (hours).

PUBLIC SCHOOL MUSIC

General Course for Grade and High School Teachers

This course is designed for teachers who expect to combine the teaching of other branches with the subject of music, in grade and high schools. The class will meet twice a week throughout the year. The work consists of a study of the technical points to be presented in the school and the practice of songs suitable for school use. This course will be of value to those who expect to teach in the public schools or who wish to conduct high school choruses, and will include systematic training in conducting. The course is open to University students without an additional fee. Persons not in the University will be admitted on the payment of the incidental fee of \$12.

Course for Supervisors

This course is designed for those who wish to fit themselves for the special work of supervisors of music in the public schools. It contemplates two years' work, but may be completed in one year by those who have had sufficient previous musical training. A certificate is granted on the satisfactory completion of the following subjects: (1) Methods, (2) Practice-teaching, (3) Conducting, (4) Harmony, (5) History of Music, (6) Sight-reading and Ear-training, (7) Musical Appreciation, (8) Masterpieces of Music, Elementary Education.

The class in methods meets three times a week for the consideration of the following work: rote songs and their application to school work; the elements of music as presented in the grades; study of the child voice; the supervisor's problems and how to meet them; study and interpretation of school songs; outlining of material; music in the high school.

The requirements for admission are the same as for all other courses in the University.

ORCHESTRA

The University orchestra is composed of about forty of the students of the University. The purpose of the organization is the study of the larger classical forms. It is open to all students who have sufficient knowledge of any orchestral instruments to

pursue the work profitably. After two semesters' connection with the orchestra a student may receive a credit of one unit-hour for each of the two following semesters.

BAND

A military band has been organized, open to all students. Two rehearsals are held each week. Freshmen and sophomores belonging to the band receive credit for military drill.

CHORAL UNION

The Choral Union is an organization of students of the University and citizens of Madison for the purpose of studying and adequately presenting in public performance the oratorios and larger choral works of standard composers.

Applicants for membership must be able to read simple music at sight. The rehearsals are held weekly from October to May. The annual membership fee is one dollar. University credit (one unit-hour for the whole year) is allowed for students who can pass the required tests.

RECITALS AND CONCERTS

Student recitals, free to all students and open to all others by invitation, are held at frequent intervals during the collegiate year. Recitals and concerts by eminent artists are given from time to time at a low price to all students of the University.

An incidental fee of fifty cents each semester (payable at the time of registration) is charged all students of the School of Music, for the purpose of establishing a fund, which, in addition to single admission tickets, will defray the expenses of a series of six Artists' Recitals (three each semester). The payment of this fee entitles students to attend all these recitals.

Fees

All students taking class work are required to pay an incidental fee of \$12 a semester. Tuition is charged for private lessons. The school year is divided into two semesters of approximately eighteen weeks each, but the tuition for musical instruction may be paid by half-semester, if desired. Neither the incidental fee nor non-resident tuition is required of students taking only applied music in private lessons.

TUITION

*Semester of Eighteen Weeks
Two Lessons a Week*

Piano		
	$\frac{1}{2}$ hour lessons	Hour lessons
Mr. Hall	\$50.00	\$100.00
Miss Regan or Mrs. Sandberg.....	36.00	72.00

Voice		
Mr. Luening	\$50.00	
Mr. Bredin or Miss Bergman.....	36.00	

Organ		
Mr. Bredin.....	\$30.00	\$60.00

To be arranged.
One Lesson a Week

Piano		
Mr. Hall.....	\$27.00	\$50.00
Miss Regan or Mrs. Sandberg.....	20.00	\$40.00

Voice		
Mr. Luening	\$27.00	\$50.00
Mr. Bredin or Miss Bergman.....	20.00	40.00

Organ		
Mr. Bredin	\$16.00	\$32.00

To be arranged.
Violin

Other Expenses		
Piano practice, each hour daily, per semester.....	\$3.00	
Organ practice, each hour daily, per semester.....	9.00	
Artist Recital fee, per semester.....	.50	

Rules and Regulations

Fees shall be paid quarterly, strictly in advance, and no deduction will be made for absence from lessons, except in case of protracted illness, when a rebate of one-half the fee for the time lost will be granted.

Students enrolling at any time previous to the fifteenth day of any semester shall be charged the full fee for that semester. Students enrolling thereafter may receive some reduction at the discretion of the Director.

GENERAL INFORMATION

No student is expected to take part in any public entertainment without the consent of his teacher and the Director.

Students who, by reason of deficient musical ability, neglect of study, or any other valid reason, fail to make satisfactory progress, may be dropped from the classes.

The School of Music calendar is the same as that of the University.

Pianos may be rented from local dealers at from three to six dollars a month.

Students may enter at any time.

The office of the Director in Assembly Hall at the University will be open for several days before the opening of each half-semester for the reception of pupils and assignment of lessons. After the opening of the University the Director may be found at Assembly Hall, from 10 to 11, on Monday and Wednesday, and from 3 to 4 on Tuesday and Thursday.

For further information, address

MISS BESSIE G. BRAND, Secretary,
Madison, Wis.

THE WASHBURN OBSERVATORY

GEORGE C. COMSTOCK, DIRECTOR AND PROFESSOR OF ASTRONOMY;
ALBERT S. FLINT, ASTRONOMER; EDNA M. HILL, CLERK.

The Washburn Observatory was established in the year 1878 through the munificence of the late Gov. Cadwallader C. Washburn. Although its obligations and opportunities as a branch of a teaching university have not been ignored, the energies of its staff from the beginning have been directed mainly to astronomical research. Among the lines of research that have been cultivated may be specified the measurement of the positions and motions of the heavenly bodies, the discovery and measurement of double stars, the investigation of variable stars, the study of changes of latitude and the amount and character of the atmospheric refraction, the determination of the amount of the aberration of light, problems of stellar color, proper motions of faint stars, and a systematic investigation of the parallaxes of all accessible stars which have large proper motions.

The principal instruments of the observatory are:

An equatorially mounted telescope of $15\frac{1}{2}$ inches aperture, constructed by Alvan Clark & Sons, and provided with graduated circles, driving clock, a filar micrometer, double image micrometer by Steinheil, a spectroscope, astro-photometer, and a very complete set of eyepieces. A meridian circle, by A. Repsold & Sons, of Hamburg, with collimators, transit micrometer, and the usual accessories of such an instrument. The objective of the instrument was made by the Clarks, and has an aperture of 4.8 inches and a focal length of 58 inches. The circle is graduated to 2 minutes of arc. For several years this instrument has been employed for an extensive series of determinations of stellar parallax. There are also a sidereal clock by Höhwü, of Amsterdam, two mean time clocks by Howard, of Boston, and a chronograph, by Fauth & Co., of Washington.

In the Students' Observatory are mounted a six-inch equatorial telescope, by Alvan Clark & Sons, and a transit instrument of the broken telescope type, by Bamberg. These instruments,

while primarily intended for instruction, are well adapted to and are employed for certain classes of original work. In particular, the equatorial telescope has been provided with reflecting prisms (Loewy), and employed as one of the principal instruments of the Observatory in an investigation of the refraction and the constant of aberration; and the Bamberg instrument is used for latitude determinations by the Talcott method and for the time service of the Observatory. The Observatory also possesses a considerable number of subsidiary instruments, such as portable telescopes, spectroscopes, photometers, chronometers, sextants, an engineer's transit, an altazimuth, a universal instrument of the German type, a personal equation machine, a spherometer caliper, seismoscopes, photographic apparatus, and a complete set of meteorological instruments.

The Woodman Astronomical Library, established in connection with the Observatory, and supported from the income of a fund given by the late Cyrus Woodman, Esq., possesses a large and valuable collection of works upon astronomy and kindred subjects.

By provision of law the results of important investigations conducted at the Washburn Observatory are published by the State, and under this provision twelve volumes, representing the more important work done at the Observatory, have been issued.

Students of sufficient technical attainments are admitted to the Observatory and take part in the investigations in progress. Meritorious original work of such students may be included in the Publications of the Observatory, or in the Bulletins of the University. For the courses of instruction in astronomy see Index, under Astronomy.

UNIVERSITY EXTENSION DIVISION

LOUIS E. REBER, Director.

WILLIAM H. LIGHTY, Secretary of Correspondence-Study Department.

FRANK A. HUTCHINS, Secretary of Debating and Public Discussion Department.

JOHN J. PETTIJOHN, Acting Secretary of Department of Instruction by Lectures.

THE ORGANIZATION

The work of the University Extension Division is divided into four departments as follows:

- I. Correspondence-Study
- II. Instruction by Lectures
- III. Debating and Public Discussion
- IV. General Information and Welfare

Object

The object of this University in carrying on extension work is to serve the citizens of the commonwealth who are unable to attend established educational institutions, to stimulate and guide them in the pursuit of a higher and more effective education, to enable them to achieve more nearly the best things in life of which they are capable—in short, to build up an extra-mural university, which shall embrace the whole state and which shall have live, active members in every community in intimate connection with the mother institution.

The constant aim of the Regents has been to make the University the center of every movement which concerns the interests of the state—to give every man a chance to get the highest education possible at the smallest practical cost—to bring the University and the home in close touch.

Historical Development

Step by step the University has broadened its field. In 1866 women were admitted. In 1885 Farmers' Institutes were established in connection with its College of Agriculture. A little

later a Short Course in Agriculture was provided. In 1898 the Summer Session was opened for the admission of those who had not time or means to enter as resident students for the long term. To this was added, in 1900, the Summer School for Artisans and Apprentices. The culminating achievement is the establishment of the University Extension Division.

I. CORRESPONDENCE-STUDY DEPARTMENT

PURPOSE

There exists in every community a considerable class of persons who are unable to adjust themselves to the formal system of education. Such persons have a claim upon the state for educational opportunities outside the formal regime. The Correspondence-Study Department serves the needs of men and women in this situation and offers effective individual instruction, which may be pursued in accordance with the requirements of each student in his own home.

Teaching by Mail

The possibility of teaching by correspondence has been demonstrated by practical experiment. While such instruction lacks some of the advantages which resident study gives, it has compensating advantages of its own. In correspondence instruction, the teaching is personal and individual. Every student studies and recites the whole lesson, comes in contact with the teacher as an individual, not as a member of a large class. Correspondence-study employs the spare time of the student, and gives him an interest beside his daily work. It can be done at home and thereby brings into the home a new and enlarging influence. Correspondence work, moreover, throws a man upon his own resources and makes him self-reliant and self-determining.

Plan and Scope

The University of Wisconsin provides, through the Correspondence-Study Department, non-resident or home-study instruction as follows:

I. Certain regular University studies which may, under approved conditions, be taken for credit toward a degree.

II. Advanced courses designed to help persons, graduates and others, in professional or practical life to keep in touch with certain advancing conditions of science and knowledge.

III. High school and preparatory studies for those for whom the conventional institutions are not available or practicable.

IV. Vocational courses which supply knowledge and training that have a direct bearing upon advancement and efficiency in a given occupation.

V. Elementary and grammar school studies for those who require such instruction for practical purposes.

GENERAL BENEFITS. Persons who are benefited by Correspondence-Study may be divided into two main classes: 1st, those who have the taste, ability, and inclination to continue their education along such lines as will enrich their lives with a deeper culture, or enhance their opportunities or abilities within their chosen vocations or professions, or fit them for larger positions and services; 2nd, that great class of wage-earners who cannot leave their employment to acquire training directed towards the greater proficiency and skill so greatly to be desired.

The first class may be roughly divided into (1) those who seek the services of the Correspondence-Study Department in keeping abreast of the times with reference to the advances in knowledge that relate to their profession or business, or it may be purely for purposes of general culture; (2) those who wish to acquire units of credit towards a University degree and (3) those who require preparation for entrance to the University.

The second class includes (1) those whom the necessity of earning a livelihood has taken from school before acquiring an elementary education; (2) those who have had the benefits of more or less liberal educational opportunities, but have received no training specially adapted to fit them for their chosen vocations; and (3) those who desire to change vocations and prepare themselves for employment more nearly adapted to their taste and abilities.

The recognized need for more wide-spread training for people who work demands that some form of education be provided for their benefit equivalent to that which may be gained in the schools and universities. To this end it is necessary not only

to carry the educational opportunity to them wherever they may be, but frequently to arouse and stimulate their interest by demonstrating to them the value of increased fitness. Realizing the importance of such work for the future well-being of the people and for the prosperity of the country, as well as for the maintenance of democratic institutions, the Extension Division proposes to establish district centers through which the entire population of the state will be reached by University benefits.

INDUSTRIAL EDUCATION. The employees of business firms may be greatly benefited by training especially adapted to their work. Where a number of them are engaged in the same or similar studies, classes are formed and met by teachers at frequent intervals.

The method adopted for bringing the subject of Correspondence-study work to employees is essentially as follows: The interest of the employer is first enlisted, after which the employee may be approached under favorable conditions. The next step brings the men together to hear of the opportunity University Extension opens to them, how readily they may avail themselves of it and the benefits to be derived. Every man who registers for a course of studies is met at once by a teacher who learns in a personal interview the exact grade of work for which he is prepared. If large numbers are enrolled, they are grouped in classes of twenty, and in addition to written lessons, receive personal instruction from a teacher who meets them regularly. To a certain extent the classes are graded and, where necessary, individual teaching is given until the student can take his place in a class.

The instructor engaged in this work gives his entire time to it. He is as familiar with the employee's labor as he is with the lesson text, and, therefore, can help the men to make practical applications of lesson to work.

LABORATORY WORK. Provision is made in connection with many correspondence courses, both in the advanced grade and in the vocational studies, by which laboratory practice forms a part of the instruction. In some courses laboratory outfits are sent to the student from the University to be set up in his own home. In other cases special arrangements are made for short periods of laboratory practice at Madison. In some studies local

branch laboratories will be established where local students may receive special instruction as the correspondence course proceeds.

THE MOTIVE. This system of instruction is designed for persons carrying on their own education. It is open to non-residents as well as to residents of the State of Wisconsin.

The present and contemplated work of the Correspondence-Study Department is designed to co-operate with and supplement existing educational agencies. By thus supplementing existing agencies there is established a vastly larger and more democratic instrument for extending the benefits of general and specialized education.

The Method and System

PROCEDURE. The student who wishes to undertake correspondence-study, should first select such course or courses as he may desire to take, and send for application blank. He should fill out the blank with information called for, and return it with required fee to the office of the Extension Division. The necessary text-books, outfit, etc., may also be purchased through the Extension Division if the student so desires.

THE INSTRUCTION. Upon receipt of application and fee, the first two lessons will be sent, with instructions for study, and methods of preparation, and directions for returning lesson sheets and reports. Each lesson will be returned to the student with such corrections, explanations, and suggestions as may be needed. Lists of books, assignments for reading, and all necessary assistance will be furnished throughout the course, so that no student will be left without adequate aid and guidance. Questions on the subject in hand are at all times encouraged.

BY WHOM PREPARED. These courses are prepared by the members of the University faculty, and each represents a definite amount of work corresponding to an equivalence of work done in residence at the University, or in the standardized schools of our educational system.

THE UNIT COURSE. The unit course is divided, where practicable, into forty weekly assignments. Such a course represents at least an amount of work equal to that done in residence at the University in a full five recitation-hour study per week for one semester, or half year. It is assumed that this work may be done by the average student in forty weeks on a minimum leisure

for study of one hour per day, six days in the week. It is, however, the student's privilege to pursue his studies as rapidly as he is able.

THE LESSON. The unit course is divided into assignments. In some courses this assignment may call for but a single lesson report, but in other courses the assignment is divided into four, five, or more lessons. In all cases the assignment represents an average week's work and not an evening's work, as at school.

PERMANENCE. The department endeavors to make its work thorough and permanent, and the various courses have been arranged in co-ordination with the regular residence work, the short courses, and the summer session.

EXAMINATIONS. Examinations are optional with the student, but are required where credits or certificates are sought. These examinations must be taken at the University, or under conditions approved by the University.

REGULATIONS. 1. Students may begin correspondence courses at any time during the year.

2. For admission to the Correspondence-Study Department no preliminary examination is required. The student is required to fill out an application blank, giving such information as may be helpful in adapting the instruction to the personal needs of each student.

3. Students who undertake Correspondence-Study work for University credit must state this fact in advance and comply with all the requirements of the University.

4. For the benefit of the department it is desired that the applicant state fully the purpose he has in view in taking the work, and also in detail such educational advantages, training, or experience as he may have had. The department endeavors to meet the needs of the individual student by advice and suggestion, as well as by formal instruction, but whenever it finds that the course elected is not for the best interests of the student, it reserves the right to reject the application, or to advise change or discontinuance.

5. Correspondence students will be expected to complete a unit course within twelve months, two courses within fifteen months, three courses within eighteen months from date of registration.

6. During an instructor's vacation, a substitute will be provided to carry on such course or courses, if possible.

7. No fee is refunded because of a student's inability to enter upon or pursue a course for which he has once registered. If an application for instruction is rejected the fee is returned.

8. The fee for a full unit course of forty assignments is only twenty dollars. When the student registers simultaneously for more than one unit course he is eligible to a discount of twenty-five per cent upon the amount of the fees in excess of twenty dollars. These fees are deliberately put upon the lowest operating basis.

Those who care to analyze the cost will bear in mind the fact that the correspondence student is usually engaged in a gainful occupation or profession, whereas the residence student temporarily suspends his earning power. The correspondence student may also be said to be turning his leisure time into economic values by this method. These and many other factors contribute toward establishing this as an inexpensive system of achieving an education. It is individual instruction of the highest order, given under the most trust-worthy conditions. The motive is public service, and profit is entirely eliminated.

University Credit

1. Persons who have had the required preparation for admission to the University, will, upon satisfactory completion of a correspondence-study course designed for credit, be awarded a certificate of credit in the University.

2. The maximum credit granted for work done by correspondence-study, however, may not exceed one-half the unit hours required for graduation.

3. At the completion of each correspondence-study course for University credit, the student shall pass an examination held under the direction of the instructor giving such course, or by some one designated by the University for that purpose.

4. Work taken for credit may not be done by any student while in attendance at any institution of learning.

5. In special cases credit may be allowed for correspondence-study courses of preparatory grade to satisfy partial entrance requirements to the University.

6. Credit to an amount not exceeding one-fourth of the unit hours required for graduation may be given at the University of Wisconsin to students of such other correspondence-schools or departments as may be designated by the University of Wisconsin. It is, however, required that such credits shall be subject to the same provisions as are made in the University of Wisconsin, and subject to the action of the accredited schools committee, or the advanced standing committee, as the case may require.

7. Credit records of Correspondence-Study work are filed in the University Extension office until the student has satisfactorily completed one year of study in residence. When all the requirements are satisfied, the Correspondence-Study records may be transferred to the Registrar's office and applied toward graduation.

8. All courses offered by the Correspondence-Study Department, whether taken for University credit or not, are on a uniform basis in reference to the amount of work covered. Courses which are satisfactorily completed have, therefore, a definite value, and all students who successfully complete such courses, will be awarded certificates of the grade in which the work is taken.

Astronomy

DR. EATON

Course 1. Popular Astronomy.

Bacteriology and Hygiene

ASSOCIATE PROFESSOR FROST

Courses: 1. Principles of Elementary Bacteriology; 2. Communicable Diseases; 3. Household or Industrial Bacteriology; 4. Public Health Problems; 6. General Bacteriology.

Botany

ASSISTANT PROFESSOR DENNISTON

Courses: 1. Morphology and Classification of Flowering Plants; 2. General Morphology of Algae; 3. General Morphology of Fungi; 4. General Morphology of the Mosses and Ferns; 5. Plant Histology; 6. Elementary Plant Physiology; 7. Drugs and Food Products; 8. Trees and Shrubs.

Business Administration

ASSOCIATE PROFESSORS MOORE, RASTALL; MR. SHIBATA; MISS MACGILL

*Material Basis of Business**Elementary Business Subjects*

Courses: 101. Commercial Arithmetic; 102. Commercial Correspondence; 103. Office Work; 104. Stenography; 105. Telegraphy; 128. Bookkeeping.

Business History

Courses: 106. Commercial History of the World; 107. Financial History of the United States; 108. Industrial History of the United States.

Material Basis of Business

Courses: 109. Property; 110. Materials of Commerce.

Economic Geography

Courses: 111. General Economic Geography; 112. World Industries; 113. International Trade and Commercial Policies; 114. Economic Geography of the United States.

Business Law

Courses: 115. The Law of Contracts; 116. The Law of Bailments; 117. The Law of Agency; 118. The Law of Sales; 119. Real Estate Law; 120. The Law of Personal Property; 121. Probate Law; 122. The Law of Commercial Paper; 123. The Law of Partnership; 124. The Law of Corporations.

Business Mathematics

Courses: 125. Mathematics of Finance; 126. Mathematics of Speculation and Gambling; 127. Insurance Mathematics.

Accounting

Courses: 128. General Accounting; 129. Advanced Accounting Practice; 130. Farm Accounts; 131. General Corporate Accounts; 132. Manufacturing Accounts; 133. Bank Accounting; 134. Telegraph Accounts; 135. Railroad Accounts; 136. Cost Accounts; 137. Auditing; 138. Problems in Expert Accounting.

Statistics

Courses: 139. Statistics; 140. Advanced Statistical Methods; 141. Office Systems.

General Organization of Business

Courses: 142. Business Organizations and Methods—Historic; 143. National Organization of Business; 144. City and Town Promotion.

Business Organization by Types

Courses: 145. Independent Business Ownership; 146. Partnership; 147. Co-operative Industry; 148. The Joint Stock Company; 149. The Corporation; 150. Combinations and Community of Interest.

Business Management

Courses: 151. Personality in Management; 152. Plant Management; 153. Sales and Purchase Departments; 154. Advertising Campaigns; 155. Credits and Collections.

The Conduct of Particular Industries

Courses: 156. Farm and Forest Management; 157. Factory Management; 158. Railway Management; 159. Store Management; 160. Banking Institutions; 161. Insurance Institutions.

Business Finance

Course 162. The Basis of Business Finance.

Financial Machinery

Courses: 163. Money; 164. The Credit System.

Finance Institutions

Courses: 165. Credit Institutions; 166. Investment Agencies; 167. Markets and Exchanges.

Finance Methods

Courses: 168. Financing Business Enterprises; 169. Scientific Investment; 170. Exchange Speculation; 171. Gambling; 172. Fraudulent Investments.

Investments by Types

Courses: 173. Loans; 174. Real Estate; 175. Stocks and Bonds; 176. General Business.

General Financial Movements

Courses: 177. The Money Market; 178. Panics; 179. Foreign Exchange; 180. Individual Fortunes.

Particular Industries

Courses: 181. Agricultural Economics; 182. Forestry; 183. Mining Economics; 184. Manufacturing Industries; 185. Transportation; 186. Money and Banking; 187. Life and Accident Insurance; 188. Fire and Marine Insurance; 189. Miscellaneous Insurance; 190. Corporations, Monopolies and Trusts.

Business Activities

Courses: 191. Advertising; 192. Salesmanship; 193. The Credit System; 194. Co-operation; 195. State Relation to Industry; 196. Business Psychology; 197. Business Ethics.

Chemistry

PROFESSOR KAHLENBERG; MR. KRAUSKOPF

Courses: 1. Elementary Chemistry; 2. Qualitative Analysis.

Education

PROFESSORS ELLIOTT, O'SHEA; MR. SEARS

Courses: 1. Principles of Teaching; 2. The Development of Childhood and Youth; 3. Educational Psychology; 6. History of Education; 7. American Educational History; 8. Administration and Supervision of Education.

Courses in Electrical Engineering

ASSOCIATE PROFESSOR JANSKY; ASSISTANT PROFESSORS SHUSTER, WATSON, MR. HAMMER

Courses: 301. Mathematics; 302. Mechanical Drawing; 306. Elements of Mechanics; 307. Strength of Materials; 308. Mechanism; 309. Machine Elements; 310. Magnetic and Electric Circuits; 311. Dynamo Electric Machinery; 312. Theory of Alternating Currents; 313. Alternating Current Machinery; 314. Electric Lamps and Illumination; 315. Heat; 316. Central Electric Stations; 317. Power Transmission and Distribution; 317a. Electric Wiring; 318. Telephones and Telephone Apparatus; 319. Meters and Metering; 320. Testing of Electrical Machinery; 321. Electric Railways; 322. Electric Batteries; 325. Compressed Air; 327. Air Brakes.

English

ASSOCIATE PROFESSOR LYMAN; ASSISTANT PROFESSORS BEATTY, BLEYER; MISS BASCOM, MR. BASSETT, MRS. VAN DUSEN, DR. PITMAN

Courses: 1. Elementary English; 61. English Grammar; 2. English Composition, Intermediate; 3. High School English Classics; 62. Advanced English Grammar; 5. English Composition, A; 6. English Composition, B; 7. Advanced English Composition; 10. The Composition of Public Address; 16. The Short Story; 51. General Survey of English Literature, A; 52. General Survey of English Literature, B; 31. General Survey of American Poetry; 17. Introduction to Shakspeare; 18. The Poetry of Tennyson; 19. The Poetry of Browning; 25. The English Novel in the Nineteenth Century; 4. The Teaching of English; 31. The New England Poets; 32. Hawthorne and Poe; 51. History of English Literature; 52. History of American Literature.

French

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Beginners' French; 2. Elementary French; 3. Intermediate French, A; 4. Intermediate French, B; 5. Technical French; *10. General Survey of French Literature.

Geology and Mineralogy

PROFESSORS LEITH, WINCHELL; ASSISTANT PROFESSORS MARTIN, WHITBECK; MR. KIRK, MR. STEIDTMAN, MR. WILLIAMS

Courses: 1. Mineralogy; 2. Economic Geology; 3. Physical Geography; 4. Elementary Geology.

German

DR. PROKOSCH, DR. REINHARD

Courses: 1. Elementary German, Part A; 2. Elementary German, Part B; 3. Intermediate German, Part A; 4. Intermediate German, Part B; 6. Scientific German; 7. Commercial German; 8. Critical German Prose; 9. Grammar Review; 12. German Composition; 19. Elementary Teachers'

Course; 20. Advanced Teachers' Course; 25. Modern German Dramatists; 26. Modern German Novelists; 22. Schiller; 21. Goethe; 29. Goethe's Faust; 30. History of German Literature; 31. History of the German Language. Studies in Lessing, Heine, Uhland, and Modern German Poetry are also available. Courses in Gothic, Old High German, Middle High German, and Old Saxon will also be arranged.

Greek

PROFESSOR SMITH; DR. PITMAN, MISS BANNING

Courses: 1. Elementary Greek—(summer session); 2. Xenophon's Anabasis; 3. Homer's Iliad I-III or Odyssey VI-VIII; 4. New Testament Greek.

Highway Construction

MR. HOTCHKISS

Course 1. Highway Construction.

History

PROFESSORS DENNIS, FISH, MUNRO, TURNER; ASSISTANT PROFESSOR CHASE

Courses: 1. United States History; 2. American History 1760-1830; 6. English History; 9. Modern European History, Part A; 10. Modern European History, Part B; 12. Medieval History; 20. Ancient History.

Home Economics

MISS —

Courses: 1. Selection and Preparation of Foods; 2. House Sanitation; 3. House Decoration.

Italian

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Elements of Italian; 2. Reading of Italian.

Latin

PROFESSOR SLAUGHTER, SHOWERMAN; DR. PITMAN, MRS. GRINDE

Courses: 1. Elementary Latin; 2. Caesar; 3. Cicero; 4. Virgil: Aeneid; 5. Elementary Prose Composition; 6. Advanced Prose Composition; 7. Livy: Books 1 and XXI; 10. Cicero: De Senectute; 12. Terence: Phormio and Andria; 14. Horace: Odes; 15. Horace: Satires and Epistles; 16. Catullus; 17. Roman Mythology; 20. Cicero: Letters and Orations. Other Advanced Reading Courses in Authors commonly read in colleges.

Mathematics

PROFESSOR SLICHTER; MR. CRAIGO

Courses: 1. Elementary Algebra, Part A; 2. Elementary Algebra, Part B; 3. Plane Geometry; 4. Solid Geometry; 5. Plane Trigonometry; 6. University Algebra; 7. Analytic Geometry; 8. Differential Calculus; 9. Integral Calculus; 10. Applied Mathematics; 11. Elementary Arithmetic.

Mechanical Drawing

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR; MR. HAMMER

Courses: 1. Mechanical Drawing, Part A; 2. Mechanical Drawing, Part B; 3. Descriptive Geometry; 4. Freehand Lettering.

Mechanical Engineering

PROFESSORS MACK, MAURER, PENCE, PHILLIPS, THOMAS; ASSOCIATE PROFESSOR THORKELSON; ASSISTANT PROFESSORS CHRISTIE, KEOWN, MILLAR, NORRIS; MR. HAMMER, MR. PARRY, MR. SHEALY, MR. WOOLLEY.

Courses: 201. Practical Mathematics for Artisans; 202. Mechanical Drawing; 206. Elements of Mechanics; 207. Strength of Materials; 208. Mechanism; 209. Machine Elements; 210. Advanced Design; 215. Heat; 216. Boilers; 217. Steam Engines; 218. Valve Gears; 219. Gas Engines and Gas Producers; 220. Test Methods; 221. Lubricants; 222. Refrigeration; 223. Heating and Ventilation; 224. Power Plant Economics; 225. Compressed Air; 226. Locomotive Maintenance; 227. Air Brakes; 228. Economics of Train Operation; 229. Electric Machinery; 230. Engine Running; 231. Fuels; 232. The Locomotive; 233. Central Station Design.

Music

MR. CASE

Courses: 1. Public School Music; 2. Appreciation of Music.

Pharmacy

PROFESSORS KREMERS, KAHLENBERG; ASSISTANT PROFESSORS BRADLEY, DENNISTON, FISCHER; MR. DU MEZ, MR. KRAUSKOPF

Courses: 1. Pharmacy, Part A and Part B; 3. General Chemistry, Part A; 5. Inorganic Preparations; 12. Qualitative Analysis; 10. Morphology and Classification of Flowering Plants; 15. Plant Histology; 30. Drug Assaying; 35. Physiological Chemistry; 40. Pharmaceutical Analysis; 45. Microscopical Examination of Food Products; 46. Microscopical Examination of Drugs; 50. Pharmacology; 51. Toxicology.

Philosophy

DR. STARCH, MR. OTTO

Courses: 1. General Psychology; 10. Ethics.

Political Economy

PROFESSORS COMMONS, ELY, ROSS, SCOTT; ASSOCIATE PROFESSOR TAYLOR; MISS MACGILL

Courses: 1. Elements of Political Economy; 2. The Labor Movement; 3. Transportation; 4. Socialism; 6. Agricultural Economics; 7. Commercial Geography; 10. Elements of Money and Banking; 11. Practical Banking; 15. Social Psychology; 16. General Sociology; 17. Practical Sociology.

Political Science

PROFESSORS REINSCH, SCOTT; ASSISTANT PROFESSOR MEYER; MR. BAILEY, MR. MACGREGOR

Courses: 1. American Government and Politics; 1A. The American Judiciary; 1B. The American Executive and Executive Methods; 3A. American Legislatures and Legislative Methods; 4A. American Diplomacy; 4B. World Politics; 6. American Municipal and Civic Progress; 10. Municipal Government in Europe and the United States; 21. Rural Welfare and Progress; 22. Rural Government.

Spanish

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Beginners' Spanish; 2. Elementary Spanish; 3. Intermediate Spanish.

Structural Engineering

PROFESSOR TURNEAURE; ASSISTANT PROFESSORS SMITH, KINNE; MR. HOOL

Courses: 401. Mathematics; 402. Mechanical Drawing; 407. Strength of Materials; 408. Elements of Structures, A; 409. Elements of Structures, B; 410. Roof Trusses; 411. Plate Girder Bridges; 412. Bridge Trusses, Part 1; 413. Bridge Trusses, Part 2; 414. Timber and Combination Bridges; 415. Masonry Structures, A; 416. Masonry Structures, B; 417. Masonry Structures, C; 418. Reinforced Concrete Construction, A; 419. Reinforced Concrete Construction, B; 420. Reinforced Concrete Construction, C; 421. Steel Building Construction; 430. Concrete and Reinforced Concrete Construction; 431. Structural Drafting.

Surveying

ASSOCIATE PROFESSOR SMITH

Courses: 1. Plane and Topographic Surveying; 2. Plotting and Topographical Drawing.

Teachers' Reviews

ASSOCIATE PROFESSORS FROST, JANSKY; ASSISTANT PROFESSORS BEATTY, CHASE, WHITEBECK; MR. CRAIGO, MR. VAN DUSEN, MRS. VAN DUSEN, MISS SCOTT

Courses: 61. Arithmetic Review; 63. Grammar Review and Elementary Composition; 65. Geography Review; 67. United States History Review; 69. Civil Government; 71. Physiology and Hygiene; 73. School Management; 75. The Common School Manual; 77. Physical Geography Review; 79. English Composition Review; 81. American Literature Review; 83. Cataloguing and Use of the School Library; 85. Elementary Algebra Review; 87. Physics Review; 89. English History Review; 91. English Literature Review; 93. Theory and Art of Teaching.

II. INSTRUCTION BY LECTURES

PURPOSE

It must be borne in mind that University Extension work is primarily educational. This department, therefore, does not pretend to establish a mere entertainment bureau. Its work is of a higher character, in keeping with the ideals of the institution of which it is a part. The Extension Division counts it a greater service to the state to stimulate and encourage a hundred earnest learners, be they homemakers, teachers, bankers, or mechanics, than merely to amuse a thousand listeners. The work is intended to appeal to all classes of society. This is possible in an extraordinary degree on account of its elastic system. This system consists (1) of a university lecture, or a series of lectures, each followed by a discussion; a syllabus planned by the lecturer; a study club; and essays and other written work for those who desire lasting educational results. It is obvious that not everyone in any community will care to follow out this complete program. On the other hand, there will be few to whom the program does not offer something. Business men and mechanics may have time for the lectures only; while others, who wish to develop the intellectual life in their homes, will find time to do some outside reading and attend the meetings of study clubs. Again, (2) some communities desire the single lecture, concert, recital, or reading program, or a miscellaneous combination of these. Such programs are offered by this department with the definite purpose of developing better taste and higher standards with reference to public entertainments, and an appreciation of art, music, and literature by presenting examples thereof.

Lectures at Public Expense

Where courses are arranged for by public school boards, it is possible, under the *act of the Wisconsin legislature of 1901*, to have them maintained at *public expense*. By another act, passed by the legislature in 1905, *trustees of public libraries are permitted to give the use of the auditoriums* in their buildings for public lectures.

In order to encourage the establishment of such courses of lectures the Extension Division offers to official boards desiring

to inaugurate courses, one or two lectures free of cost beyond the actual traveling and other necessary expenses.

STUDY CLUBS.—The department of Instruction by Lectures is ready to assist study clubs in every possible way. From time to time, the Secretary will visit the different parts of the state and aid the local centers in organizing or perfecting the organization of such clubs. When organized, the Extension Division will be of further assistance either through direct contact of some member of its staff with the class, or through supervision of the work of the class, or through a combination of both the foregoing methods.

UNIVERSITY CREDIT.—Where the work of the study club is of a character approved by the faculty of the University, a certificate will be awarded to the members passing a satisfactory examination, which will have a recognized value on the University records, and which will be credited accordingly, should the holder ever study at the University.

APPLICATIONS FOR LECTURES.—As a rule the members of the Extension staff are free to lecture only on the afternoons and evenings of the last two days of the week. This is especially the case for places at a considerable distance from Madison. It is, therefore, desirable that a first and second choice of lecturer, subject and date (or dates) be given. If a lecturer is desired on some other day of the week, the Extension Division will try to make satisfactory arrangements.

CIRCUITS.—If two neighboring communities, or two centers in the same community, engage the same lecturer for the same day or consecutive days, a circuit is established and the lecturer's expenses are divided between them. For example, a woman's club could arrange for a lecture in the afternoon and the school board of the same place could arrange for another in the evening.

TRAVELING LIBRARIES.—The University Extension Division has in its work the co-operation of the Wisconsin Free Library Commission. The Commission possesses several thousand volumes which it sends in groups to the communities of the state that have no adequate library facilities. Requests for such libraries by University Extension centers will be gladly received by the Secretary, and will be met so far as resources of the Commission will permit. On some subjects it will not be possible to supply groups, for lack of material, and inquiry by correspondence before

definite arrangements are made for lectures, is advised in case it is desired to use traveling library groups in connection with the lectures.

STUDY OUTLINES.—The Extension Division will undertake to supply study clubs with outlines of study, as far as is possible.

STEREOPTICONS.—For places in which a stereopticon is not available, arrangements can sometimes be made whereby one is furnished by the University, at the expense of the local center.

SYLLABI.—The members of the Extension staff will draw up syllabi of their lectures which will be published by the University. To cover the expense of printing, a charge of a few cents will be made for single copies. Where twenty-five or more are ordered, the charges will be lower.

TEACHERS' CONVENTIONS AND INSTITUTES.—The Extension Division will provide speakers for these meetings as far as the regular work of the University will permit.

COMMENCEMENT ADDRESSES.—The University Extension Division can arrange for commencement addresses to be delivered by members of its staff. The charges will be arranged in each case for the speaker desired, through the Extension Division.

Expenses

LOCAL EXPENSES.—These include hall rent, printing, advertising, etc., and the lantern and operator, where the lecture is illustrated.

UNIVERSITY CHARGES.—Lecturers' Fees. Full information concerning lecturers' fees will be supplied on application.

LECTURE COURSES

Philosophy

Professor JOSEPH JASTROW. Illustrations of Psychological Principles (Six lectures); The Subconscious (Six lectures); Aspects of Social and Individual Psychology (Six lectures).

Professor F. C. SHARP. Problems of Moral Progress (Six lectures); Psychology (Four lectures).

Education

Professor M. V. O'SHEA. Applications of Psychology to Education and Life (Six lectures); Modern Education (Six lectures); Contemporary Educational Ideals (Six lectures); Hidden Forces in Human Life; Mind-reading, Character-reading and Other Mysteries; The Child as Revealer of the Past; Individuality.

Professor EDWARD C. ELLIOTT. The Evolution of the American School Building (Two lectures); Politics and American Education; Industry and American Education; The Modern Public School Building (Illustrated).

History

Dr. REUBEN GOLD THWAITES. The Jesuits of New France; The French Regime in the Old Northwest; Men and Manners in Old Colonial Days; George Rogers Clark (Illustrated); Daniel Boone; The Black Hawk War; The Story of Wisconsin's Boundaries; On the Study of Local History; Among the Pueblos of New Mexico (Illustrated); A Summer in Norway (Illustrated); In Ireland with a Kodak (Illustrated).

Political Economy

Professor WILLIAM A. SCOTT. A decade of High Finance; Wall Street and the Nation; New Ideals in Civic Life; Education in the Twentieth Century.

Sociology

Professor E. A. ROSS. Race and Society (Six lectures); The Psychic Life of Society (Six lectures); The Mind of the Mob; The Near Future of American Society; Modern Sin and Grading of Sinners; Pessimism and the Way Out; Education and Society; Tunis, the Western Outpost of the Orient (Illustrated); Latter Day Sinners and Saints; Rampant Commercialism.

Business Administration

Professor S. W. GILMAN. Organization, Accounting, Business Forms, Credit Instruments, Funding Instruments, and Practical Problems (Six lectures); Business Problems (Six lectures).

Associate Professor BENJAMIN M. RASTALL. The City Beautiful; The Work of Wall Street; The New Business Education.

Political Science

Professor P. S. REINSCH. Political Japan; Reform Movements in China; Asiatic Unity; The Hague Conferences and Tribunal; The Empire Republic of Brazil; The Rise of Chinese Nationalism; Politics and Social Life in South America; Commerce and Industry in South America.

Assistant Professor ERNST C. MEYER. The Inside View of Consular Reform; Organization of American and Foreign Cities; New Municipal Functions (Illustrated); Live Questions on Our National Administration (Illustrated).

Mr. FORD H. MACGREGOR. City Government by Commission; American Municipal Progress; What is the Matter with our Cities.

Greek Life and Literature

Professor C. F. SMITH. Greek Life (Six lectures); Greek literature (Six lectures). (All illustrated.)

Greek and Roman Civilization

Professor GRANT SHOWERMAN. Greek Architecture (Six lectures); Greek Sculpture (Six lectures); Historic Sites in Greece (Six lectures); Life of the Ancient Greeks (Six lectures); Historic Sites in Italy (Six lectures); Ancient Rome and its Remains (Six lectures); The Life of the Ancient Romans (Six lectures); Masterpieces of Classical Literature (Six lectures); Modern Italy and its Life (Six lectures). (All illustrated.)

Scandinavian History and Literature

Professor JULIUS E. OLSON. Early Scandinavian History and Literature (Six lectures); Modern Norwegian Authors (Six lectures).

German Life and Literature

Professor A. R. HOHLFELD. Goethe: The Man and the Poet (Six lectures); The German Drama of the Nineteenth Century (Six lectures); Glimpses of Modern Germany (three lectures).

Professor ERNST K. J. H. VOSS. Die Pflichten und die Rechte der Deutsch-Amerikaner; Die Freundschaft zwischen Goethe

und Schiller, ein Weck-und Mahnruf für uns Deutsch-Amerikaner; Carl Schurz, ein Vorbild für alle Deutsch-Amerikaner; Parzival (One, two, or three lectures); Volks mundart und Schriftsprache in ihrem Verhältnis zu einander; Die Deutsche Kommission der Königlich Preussischen Akademie der Wissenschaften in Berlin; Tristan und Isolde.

Assistant Professor EDWIN C. ROEDDER. German Life in Town and Country (Six lectures, partly illustrated); German Women of the Past, and their Contributions to the Advancement of Civilization (Six lectures, partly illustrated); On the Paths of William Tell (Illustrated); The Nibelungenlied (Illustrated); A Trip through the Black Forest (Illustrated); The Heidelberg Castle (Illustrated); The Religion of the Ancient Germans. All of the above lectures in either English or German, as desired.

Assistant Professor SCOTT HOLLAND GOODNIGHT. Bismarck: His Life and Work; German Universities and Student Life; Berlin and Vicinity; The Rhine Region (Two lectures); Dresden and Saxon Switzerland; Leipsig and Jena; Munich and Nuremburg (All illustrated).

English Life and Literature

Professor J. W. CUNLIFF. Browning and Italy (Two or three lectures); The New Woman in the Old World.

Professor J. C. FREEMAN. English Life and Literature (Six lectures); Shakspeare (Six lectures); The great Epics of the World (Six lectures); American Life and Letters (Six lectures); Who Wrote Shakspeare? Shakspeare, the Gentleman; English Sonnets and Sonnetters; Modern Education, Does it Pay? Beyond Sea; The Netherlands and the Rhine; A Summer in Great Britain; Italian Days; Wonderland; Uncle Sam Abroad, or Our Consular Service; Our Diplomatic Service.

Associate Professor J. F. A. PYRE. American Writers and American Culture (Six lectures); Typical English Poems (Six lectures); Art and Life (Six lectures); Hamlet; Robin Hood; Wordsworth (Illustrated); Byron; Browning; Kipling; Lowell.

Assistant Professor WILLARD G. BLEYER. The Life History of Words (Six lectures); Talk on Writing English (Six lectures); The Teaching of English (Six lectures).

- Associate Professor ROLLO LU VERNE LYMAN. The Art of Public Address (Four lectures); Oratory in American History (Four lectures); Rudyard Kipling, with readings; Ideas and Ideals; Pluck; National Holidays; Qualities of Success.
- Assistant Professor T. H. DICKINSON. Present Day Tendencies in the Drama (Five lectures); English Drama in the Nineteenth Century (Four lectures); The Friendship of Books.
- Mr. ALBERT H. JOHNSTONE. Departures; An American Gentleman; Modern Humor (A Lecture-Recital).
- MRS. MARY AGNES LATHROP. Some of the Songs of Literature (Six lectures, with vocal illustrations).

The Physical Sciences

- Professor LOUIS KAHLENBERG. Chemistry (Six lectures).
- Professor EDWARD KREMERS. Pharmaceutical Chemistry (Single lectures or series).
- DEAN H. L. RUSSELL. Microbes and Their Work (Six lectures); Man and Microbes; Milk Supplies and Public Health; Prevention and Treatment of Consumption; Prevention and Treatment of Tuberculosis; Water Supplies and Disease; Insects and Disease. (All illustrated).
- Professor M. P. RAVENEL. Cause and Prevention of Tuberculosis (Illustrated); Bovine and Human Tuberculosis (Illustrated); Sanitation of the Farm (Illustrated); Value of Pure Water to a Community (Illustrated); Ventilation of Schools and Homes (Illustrated).
- Associate Professor W. D. FROST. Communicable Diseases: Their Cause and Prevention (Six lectures); Recent Progress in Warfare Against Microbes (Illustrated); Prevention of Communicable Diseases (Illustrated).
- Assistant Professor GEORGE WAGNER. Zoology (Six lectures, illustrated).
- Assistant Professor LAWRENCE MARTIN. Geographical Development of Natural Scenery. (One lecture, or in series of six lectures, illustrated); The Inside Passage to Alaska (Illustrated); Alaskan Glaciers (Illustrated); Earthquakes and Shore Lines in Alaska (Illustrated); Alaska and Its Resources (Illustrated); Life of Alaskan Natives (With exhibition of clothing, weapons, ornaments, basket-work, etc.).

Engineering

Associate Professor J. B. THORKELSON. Boilers; Compressed Air Machinery. (Both illustrated.)

Professor C. F. BURGESS. The Electric Furnace.

Lives of Famous Engineers.—Thomas Telford, by Dean F. E. TURNEAURE; George Stephenson, by Associate Professor H. J. B. THORKELSON; John Ericsson, by Professor J. G. D. MACK; George H. Corliss, by Professor _____; Joseph Henry, by Professor _____; Sir William Siemens, by Professor C. F. BURGESS. (Illustrated.)

Associate Professor CYRIL M. JANSKY. Women in Industry; The Constitution of Matter (Illustrated); Light and Lighting of Homes (Illustrated).

Forestry

State Forester E. M. GRIFFITH. Practical Forestry in Wisconsin (Illustrated); Conservation of our Natural Resources.

Physical Training

Professor J. C. ELSOM. Physical Training (Six lectures); The German System of Gymnastics (Illustrated).

Assistant Professor ABBY SHAW MAYHEW. Physical Training (Four lectures).

Geography and Travel

Professor J. C. ELSOM. Among the Rockies (Illustrated); Highways and Byways of the South (Illustrated).

Assistant Professor ELIOT BLACKWELDER. Methods of Transportation in China (Illustrated); Chinese Temples and Sacred Places (Illustrated); The People of China and How They Live (Illustrated).

Assistant Professor LAWRENCE MARTIN. Volcanoes; Earthquakes; Weathering and Wind Work; Rivers; Glaciers; The Sea Coast; (All illustrated by lantern slides. Each of these may be given as a separate lecture, or the six may be combined as a course in physical geography); Niagara Falls; The Grand Canyon of the Colorado; the Glaciers of Alaska; The Inside Passage to Alaska (All illustrated by lantern slides).

Mr. L. R. HERRICK. Ocean Steamships; Tangier, Outpost of Barbarism; A Journey to Paris; Fontainebleau, Versailles and St. Denis; The Chateaux Country; Picturesque Brittany; The Alhambra; Down the Portuguese Frontier (All illustrated).

III. DEBATING AND PUBLIC DISCUSSION

PURPOSE

This department aims to arouse and stimulate among all classes of people an intelligent and active interest in important social and political questions. In the belief that there is no form of popular education that tends more essentially to the making of good citizens than study and discussion of live issues, this department collects and maintains a loan library of books and periodicals relating to questions of the day, available upon application, issues bulletins on special topics, and keeps in touch by correspondence or personal interview with civic leagues, town councils, library and school boards, farmers' and business men's clubs, high school and academy societies, and all similar organizations throughout the state.

Loan Material

PACKAGE LIBRARIES.—The collection of loan material for the use of individuals or organizations includes only package libraries on subjects of practical and timely interest—those great questions which are being weighed by the nation or state, as well as those of even closer appeal to the citizen, which relate to the municipal policies of his own community. Mounted clippings from newspapers, sections of periodicals, state and national publications, books, in short everything of value bearing upon questions of current interest, dealing fairly and comprehensively with both sides of the discussion, are accumulated by this department and placed at the disposal of those who will use them.

Bulletins

FORMULATED QUESTIONS.—The bulletins, which formulate subjects for debate and give full lists of references on both affirmative and negative sides with information as to where and how this data may be obtained either from libraries, archives or the Extension Division of the University, are widely distributed throughout the state. Such questions as the following are presented: *The Election of Senators by Popular Vote*, *Postal Savings Bank*, *The Immigration Problem*, several phases of the "good roads" problem, *The Guaranty of Bank Deposits*, *The Com-*

mission Form of City Government, and Compulsory Arbitration. The department advises dropping the antiquated questions so popular in the past and grappling in public discussion with the live questions which are now before the people for solution.

The bulletins are distributed within the state free of cost, and loan material is supplied, usually without cost and with as little restraint as possible as to time and conditions of use.

In addition to the publications suggesting subjects for debate, several compact and simple guides have been issued as aids to beginners in the practice of debating. These pamphlets discuss *Debating Societies—Organization and Procedure, Parliamentary Motions, and Principles of Effective Debating.* Though designed for the use of beginners, these guides are replete with practical suggestions for experienced speakers and are valued by practiced debaters.

To Whom this Work Appeals

THE DEBATE.—The youths in all graded and high schools, academies, and colleges, in debating and literary societies, as well as the young people organized into clubs and societies by churches, Christian Associations, settlements, and other agencies are making practical and effective use of the direction and assistance offered by this department. The constructive value of this work in the education of the youth for citizenship becomes at once apparent when one appreciates the service that is being rendered not only in direction and stimulation, but also in the preparation of debates, essays, and orations.

THEMES.—In addition to the work with the younger citizens, the department establishes and maintains useful relations with various civic leagues, with the organizations of farmers and of working men, and with women's clubs.

IV. GENERAL INFORMATION AND WELFARE

PURPOSE

In recognizing the public obligation to establish and maintain institutions for higher education and for research, there is also implied the right of the citizens who contribute to the support of these institutions to a share in their fruits. There-

fore, in a university which truly serves the commonwealth there exists a proper place for a department of general information and welfare.

A Clearing-House

This department becomes thereupon the clearing-house through which all reasonable inquiries of the people of the state may receive consideration. The department also disseminates, methodically, such information or knowledge as is of general service in the well-being, prosperity, and progress of a people.

The researches of government bureaus and commissions, of experiment stations and laboratories, of scientific institutions and associations are too often imbedded in voluminous or technical reports to serve their full measure of usefulness. The results of this achievement and mastery should find an agency and a form for proper dissemination, which maintains all the essential facts, but adapts them and makes them available for untechnical and democratic needs.

Results of inquiry or research relating to food, hygiene and sanitation, to the discoveries affecting the prevention and cure of disease, to economic, political, social, and ethical questions, to the problems of general and special education, to the conservation of resources, to agricultural, engineering, manufacturing, and commercial conditions, to recreation and social health, to child labor, to municipal problems, to the abatement of noise, dust, and smoke, to water supplies and garbage disposals, to the aesthetic requirements of life in country and in city, to home furnishing and decoration, to landscape design, to architecture, to music, and to art in general,—these are among the topics in connection with which this department may render valuable public services.

Method

This department gathers informational literature, presents it in suitable form for distribution, and encourages its study and use. The department will also secure expert advisers for communities having special problems to solve.

Municipal Reference Bureau

City government touches the citizen at more points and is of more vital importance to his interests, business and personal,

than any other government with which he comes in contact. It collects more taxes from him and expends more money. Its problems are among the most complex with which public officials have to deal, and, being largely of a business nature, every mistake which they make helps to raise the citizen's taxes. If these problems are to be wisely solved, if each city is to benefit by the success of other cities and profit by their failures, city officials must have access to all the available information and data to be had upon these various subjects. They must compare notes.

Recognizing these facts, and that such information is both difficult to obtain and hard to keep up to date, a municipal reference bureau is established for the service of the cities of the state. In so far as time and resources permit, it aims to collect and furnish information on all subjects of municipal organization and administration, public works, public utilities and public service rates, municipal employment, paving, sewage disposal, water supplies and water purification, garbage disposal, parks and play-grounds, housing, street cleaning, street sprinkling, dust prevention, smoke abatement, city planning, civic centers, art commissions, care of city trees, schools, charities and corrections, health and sanitation, accounting methods, comparative statistics, commission government, home rule, civic organizations, and all the other subjects of municipal interest, and, so far as possible, to collect and maintain a file of charters and ordinances of the principal cities of the United States, and the available municipal material of the principal cities of Europe and the continent. It has correspondents in most of the principal American cities, and in this way is able to furnish information as to what cities have, for instance, a milk ordinance, a wheel tax or other ordinance, how they work, and if desired lend a copy of the ordinance. It can tell how boards of public works are organized in various cities, how school boards are constituted, or how street sprinkling or street repairs are paid for. In short, it aims to be a clearing house for municipal experiments and experience.

Exhibits

Exhibits consisting of statistical charts, pictures, models and descriptive literature interpreted by an expert, may be used as a valuable method of instruction in the care and prevention of

diseases. For some years, several departments of the University have co-operated in accumulating a very effective and instructive tuberculosis exhibit, which was perfected by the Wisconsin Anti-Tuberculosis Association preparatory to the International Tuberculosis Congress at Washington in September, 1908. The Extension Division will send this exhibit to communities in the state upon application, without cost beyond expense of transportation.

Vocational Institutes

An effective form of instruction in the scientific principles underlying and affecting trades, is presented in the vocational institute. Lectures and demonstrations dealing with the latest investigation of experts who stand at the head of their special lines of research are presented in such simple and practical form as to be readily available by the crafts. The Extension Division will arrange for, and conduct institutes of one or more days' duration as desired.

PHYSICAL TRAINING—MEN

MR. TEN EYCK, ACTING DIRECTOR; DR. ELSOM, MEDICAL EXAMINER; MR. BARRY, MR. NOYES, MR. ZEIDLHACK, MR. NESPOR, MR. LATHROP, MR. MCCHESENEY.

The Department of Physical Training has jurisdiction over all gymnastic and athletic activities. It is the aim of the department to give the students such exercises, games and sports as will best create and maintain a vigorous physical health. It endeavors to reach a large number of students, especially the weak and undeveloped, and to give to all exercise that will be not only beneficial but interesting. Physical Training is required of all freshmen and sophomore students on two days of each week, from November to May.

The gymnasium is one of the largest in the country. Its size is 200 feet in length by 100 feet in width. On the ground floor are to be found the necessary offices, the locker rooms, the bath rooms, swimming pool, hydraulic rowing machines. On the second floor there is an unobstructed hall 165 by 98 feet, used for the purposes of gymnastic exercise and military drill. The gymnasium equipment includes the usual apparatus and developing machines. The third floor contains six large handball courts and two running tracks.

A large athletic field is provided for the use of students, and all intercollegiate and other games and meets are held here. The field is equipped with two large grandstands, a running track, and other necessary features. The University boat-house is located next to the gymnasium on the shore of Lake Mendota. The present equipment of ten shells is being increased yearly. A forty horse-power launch was purchased two years ago.

MEDICAL AND PHYSICAL EXAMINATIONS

Physical Examinations. Required each semester of all freshmen. The examination includes about fifty measurements of the body, various strength tests, the examination of heart and lungs and other vital organs, tests for vision and hearing, and special tests for curvature of spine and other physical inequalities. Examinations by appointment. Dr. ELSOM.

Lectures. On the physiology of exercise, personal hygiene, health culture, etc. These lectures take the place of the regular gymnasium classes on the days when the lectures are given. Dr. ELSOM.

To overcome the tendency to consider compulsory physical training onerous, to stimulate interest in the work and to create the spirit of play while the body is being developed, the system of electives has been instituted. Thirteen forms of athletic activity are offered and students may enroll for their required work in any of these which appeal to their taste. They are open as well to upper classmen and short course and dairy students for voluntary work and instruction. No difference is made between indoor and outdoor athletics.

COURSES IN PHYSICAL TRAINING

Two periods a week required in first and second years.

1. Gymnastics. Calisthenic drills, setting up exercises, dumb-bell, wand and bar-bell drills, etc.; indoor games. Mr. ZEIDELHACK, Mr. NESPOR, Mr. MCCHESENEY.

2. Advanced Gymnastics. Squad work on gymnastic apparatus, horses, parallel, vaulting and horizontal bars, bucks, rings, etc. Gymnastic games. Mr. ZEIDELHACK, Mr. NESPOR, Mr. MCCHESENEY.

3. Track and Field Athletics. The work consists of body building in the education of special groups of muscles with technical instruction in starts, dashes, high and broad jumping, pole-vaulting, shot-putting, and distance running; hammer and discus throwing outdoors only. Mr. LATHROP.

4. Cross-Country Running. Members of the cross-country squad working regularly until Thanksgiving are credited in Physical Training.

5. Baseball and Football. Recreative sport as a relaxation from study offers no better channels for general development than baseball in the spring and football in the fall months. Great care is exercised in excluding from the more vigorous sports those incapable of deriving physical benefit therefrom. Mr. BARRY, Mr. DRIVER.

6. Rowing. Instruction is given on the rowing machines during the winter months, and in watermanship in the fall and spring in the barges and shells on Lake Mendota. Rowing is

notable for the development of the powers of endurance. The University now owns ten shells, accommodating seventy men on the water at one time. Mr. TEN EYCK.

7. Basketball. One of the best indoor sports, in the totality of physical development, is afforded ample space and opportunity on the spacious main floor. Mr. NOYES.

8. Swimming. The class meets daily. The various strokes are taught, also diving, under water swimming, and life-saving methods. All sophomores must be able to swim 50 yards to receive their credits. Mr. TEN EYCK, Mr. NESPOR.

9. Boxing. Used as a pastime. Class limited to twenty-five.

10. Fencing. A class for beginners, who are taught the position of *en guard*, and all principal attacks and parries. Mr. NESPOR.

11. Tumbling. Instruction is given twice a week in mat work. Special attention is devoted to form and finish. Mr. NESPOR, Mr. MCCHESENEY.

12. Special Classes. Students found on medical examination to be asthenic or to have any functional deformity are prohibited from entering the above classes. Attention is given to the individual needs of these cases. Dr. ELSOM.

PHYSICAL TRAINING—WOMEN

ASSISTANT PROFESSOR MAYHEW, DIRECTOR; DR. DOBSON, MEDICAL EXAMINER; MISS ATKINSON, MISS LEARNED, MISS PICKARTS, MISS WYMAN.

THE GYMNASIUM

The Women's Gymnasium occupies the second and third floors of Lathrop Hall. The main gymnasium is two stories high, and has a floor space of 118 by 60 feet. There is a visitor's gallery at one end and a stage at the other and a running track around the gymnasium. The concert room which is 72 by 42 feet will be used as a gymnasium for the smaller classes.

Equipment. The gymnasium is fitted up with all of the modern and most approved pieces of apparatus, such as ladders, hori-

zontal and parallel bars, horses, bucks, giant strides, chest weights, rowing machines, poles, travelling rings, ropes, booms, stallbars; also a complete outfit of light apparatus, including dumb bells, clubs, wands, foils, bar bells, etc.

Dressing Rooms. Two floors of one wing contain dressing rooms, showers and lockers. On each floor there will be 60 dressing rooms, 30 showers, and 500 lockers. Only one floor is fitted up at present.

Swimming Pool. The swimming pool is located at one end of the basement, and is well lighted and ventilated. The pool is 60 by 26 feet. Adjacent to the pool is a room containing dressing rooms, showers and lockers. There is also a room provided with apparatus for drying the hair.

Bowling Alleys. Four bowling alleys are installed in the basement.

PHYSICAL TRAINING

Requirements. The work is required of all first and second year students, both regular and special. The required work begins on the first Thursday of recitations, when the Freshmen meet in the gymnasium at 4 o'clock, the Sophomores at 5 o'clock. Registration days, Tuesday, Wednesday and Thursday, September 27, 28, 29, in the Physical Director's office, first floor, Lathrop Hall.

Courses. 1. Freshmen. Lectures on hygiene; class exercises; swimming; sports and games; Fete Day dances. 4 periods a week, 2 credits. Miss WYMAN.

2. Sophomore. Lectures on hygiene; class exercises; swimming; sports; heavy gymnastics; bowling; Fete Day dances. 4 periods a week; 2 credits. Miss ATKINSON and Miss WYMAN.

3. Junior. Fancy drills; aesthetic and folk dancing. 2 periods a week. No credit. Miss MAYHEW.

4. Senior. Continuation of Course 3. Dr. DOBSON.

Classes 3 and 4 are planned for all upper classmen who have had two years of physical training and it is hoped that all women not taking required work will make arrangements to enter classes, use the swimming pool, bowling alleys and showers.

Suits. A uniform gymnasium costume is required and can be purchased in the Fall at the Gymnasium office. Price \$5.00.

CORRECTIVE DEPARTMENT

The corrective rooms on the third floor of West wing consist of the physician's office equipped for medical examinations and also eye and ear and nose and throat examinations; the corrective exercise room, fitted up with all necessary apparatus for special work; and a rest room fitted up with couches.

Examinations. A woman physician, who is also a graduate in physical training, makes a thorough examination of each student in the department, twice a year and at the same time measurements and strength tests are taken.

Course 5. Special classes for all who are unable to take the class work or who need deformities corrected. Dr. DOBSON, Miss LEARNED.

TEACHERS' COURSE

6. Theory of physical training and practice in teaching gymnastics; instruction in sports and games, corrective exercises which may be used in the school room, and lectures on personal and school hygiene. Prerequisite courses, 1-2. Two credits, each semester. M., W., 12. Miss MAYHEW.

MILITARY SCIENCE AND TACTICS

CAPTAIN RALPH MCCOY, 5TH U. S. INFANTRY, COMMANDANT.

Military Instruction at the University of Wisconsin is not elective, but is required by law. The congress of the United States and the legislature of the State of Wisconsin have made it a special and imperative feature of the course of education furnished at this institution. By the regulations of the University, all able-bodied male students of the freshman and sophomore classes are required to take military drill unless excused by proper authority.

Freshmen, who, prior to entering the University, have received the equivalent of one year's instruction in the University regiment, may, at the discretion of the Commandant, be required to drill one year only, provided they furnish proper credentials from accredited military schools or National Guard organizations. Students who have served honorably in the army or navy of the United States, may receive full credit for drill at the University without further military instruction.

Students from foreign countries, not intending to become citizens of the United States, may at the discretion of the Commandant, be excused from drill.

Students over twenty-two years of age taking a special course and not intending to graduate, may be excused from drill; but should such students change at any time from a special to a full course, they will be required to make up the full two years of drill.

Students who enter as candidates the crews or intercollegiate athletic teams may be excused from drill by the Commandant upon recommendation of the Department of Physical Training. When a member of a crew or an athletic team shall be discharged from such crew or team, he will be reported back to the Commandant for drill at the next drill succeeding his discharge.

No student is entitled to excuse from drill on the ground of employment unless such employment is necessary for his support. It is not the intention of the university to force students to drill when such action would practically compel them to leave the university. On the other hand, students cannot be permitted to engage in other occupations which are not neces-

sary for their support and claim excuse from drill on the ground that such employment interferes with the drill hour. In such cases, drill will be regarded the same as any other study.

Normal school graduates are not required to drill.

Applications for excuse for any cause must be submitted to the Commandant on the prescribed blank within two weeks after the beginning of each semester.

The work of the military department embraces a course in drill regulations, a course of lectures on military subjects, and practical instruction in the school of the soldier, squad, company and battalion, target practice, and drill in first aid to the injured. All commissioned officers, the sergeants major, quartermaster sergeants, and first sergeants, are required to take this course. *Two credits are allowed for this course.*

Drills will begin at the opening of the first semester, and be held at least two hours a week until April first, and four hours a week thereafter.

All appointments to office in the companies shall originate in the sophomore class, but officers may be promoted and continued in office during their junior and senior years.

All students must provide themselves with the cadet uniform described in the regulations for the military department. This uniform can be procured in Madison for about fifteen dollars.

ORGANIZATION

The organization is that of a regiment of infantry, consisting of three battalions of three companies each, a band, trumpet corps, target detachment, and hospital corps. These organizations will be supplied with a full quota of officers. Students will enter the infantry regiment and afterward be specially assigned to the other organizations at the discretion of the Commandant.

University fees amounting to ten dollars each semester will be refunded to all cadets holding commissions in their junior or senior years. An additional prize of fifty dollars will be paid the cadet colonel and lieutenant colonel, and twenty-five dollars to each major. These officers will act as assistant instructors in Military Science and Tactics.

Upon graduation specially qualified students receive from the Governor of Wisconsin commissions as brevet second lieutenants in the State National Guard subject to assignment to duty for five years after graduation.

ROSTER OF UNIVERSITY CORPS OR CADETS

Commandant

Captain Ralph McCoy, 5th U. S. Infantry.

Surgeon

Lieutenant-Colonel James C. Elsom, Medical Examiner.

Cadet Officers

REGIMENTAL, FIELD, AND STAFF

Colonel, W. B. Schulte.

Lieutenant-Colonel, J. T. Welsh.

Captain and Regimental Adjutant, J. R. Coleman.

Captain and Regimental Quartermaster, L. M. Hammond.

BAND

Captain, C. A. Mann.

First Lieutenant, F. E. Williams.

Second Lieutenant, R. L. Rees.

First Sergeant, V. Bonesteel.

FIRST BATTALION

Major, K. E. Wagner.

First Lieutenant and Adjutant, J. H. Williams.

Second Lieutenant and Quartermaster, L. A. Gutowski.

Sergeant Major, C. R. Cleveland.

Quartermaster Sergeant, D. D. Foxwell.

Company A.

Captain, K. M. Mann.

1st Lieutenant, L. H. Stewart.

2nd Lieutenant, D. S. Holmes.

First Sergeant, A. E. Denis.

Company B.

Captain, G. W. Esau.

1st Lieutenant, R. R. Hibbard.

2nd Lieutenant, P. C. Ritchie.

1st Sergeant, R. K. Ballard.

Company C.

Captain, H. D. White.

1st Lieutenant, A. Richmond.

2nd Lieutenant, N. A. English.

1st Sergeant, L. J. Brady.

SECOND BATTALION

Major, J. R. Newman.

1st Lieutenant and Adjutant, O. D. Knight.

2nd Lieutenant and Quartermaster, J. P. Canavan.

Sergeant Major, E. G. Bailey.

Quartermaster Sergeant, W. P. Wolff.

Company D.

Captain, C. W. Esau.

1st Lieutenant, H. L. Kadish.

2nd Lieutenant, J. P. Lewis.

1st Sergeant, A. H. Mueller.

Company E.

Captain, H. D. Blake.

1st Lieutenant, L. K. Wilson.

2nd Lieutenant, A. C. Shape.

1st Sergeant, J. A. Laird.

Company F.

Captain, P. H. Martin.

1st Lieutenant, V. R. Bacon.

2nd Lieutenant, G. E. Bennett.

1st Sergeant, ———

THIRD BATTALION

Major, H. A. Schuette.

1st Lieutenant and Adjutant, H. V. Meissner.

2nd Lieutenant and Quartermaster, J. L. B. Thomas.

Sergeant Major, A. R. Taylor.

Quartermaster Sergeant, R. P. Hammond.

Company G.

Captain, L. R. Talbot.

1st Lieutenant, W. H. Ellis.

2nd Lieutenant, E. S. Gillette.

1st Sergeant, ———

Company H.

Captain, H. L. Algeo.

1st Lieutenant, A. J. Barclay.

2nd Lieutenant, E. E. Browning.

1st Sergeant, L. W. Beeson.

Company I.

Captain, C. J. Moritz.

1st Lieutenant, H. A. Baker.

2nd Lieutenant, J. E. Love.

1st Sergeant, H. B. Miller.

HOSPITAL CORPS

Lieutenant-Colonel, J. C. Elsom.

Captain, L. L. Hebbard.

1st Sergeant, E. C. Stevens.

TARGET DETACHMENT

Captain, J. L. Hensey.

2nd Lieutenant, A. T. Hobart.

1st Sergeant, ———

THE SUMMER SESSION

GEORGE C. SELLERY, Director

DURATION OF THE SESSION

The twelfth Summer Session of the University of Wisconsin opens June 27, 1910. The session lasts six weeks and closes August 5, except in the Law School, where the session continues for ten weeks and ends September 2.

CLASSES OF COURSES

Courses, both academic and professional, are offered for graduates, and for undergraduates in arts, law, and engineering, for teachers in colleges, agricultural schools, high schools, and technical schools; and for special students, as lawyers, doctors, and practicing engineers. Practically all the courses carry full academic credit.

TERMS OF ADMISSION

The requirements for graduates and undergraduates who desire University credit are the same for the summer session as for the other sessions of the University.

All persons, however, who desire to share in its advantages may be enrolled in the summer session without passing the entrance examination. They are freely admitted to all courses as auditors, and are permitted to elect work in the courses for which they are qualified. Credit toward a degree will be given, however, only to students who satisfy the entrance requirements of the University.

FEES AND REGISTRATION

The general fee for the summer session, irrespective of the number of courses taken, is \$25 in the Law School, and \$15 in the other colleges and in the Graduate School. Those who attend merely as visitors pay the same fee as other students.

Registration must precede entrance upon any part of the work of the session. Registration takes place Saturday, June 25, and Monday, June 27, at the office of the Registrar, 158 University Hall.

SUMMER CIRCULAR

For illustrated bulletin of the summer session, describing the different courses in considerable detail, apply to the Registrar.

GRADUATE SCHOOL AND COLLEGE OF LETTERS AND SCIENCE

ANATOMY

PROFESSOR BARDEEN AND ASSISTANT PROFESSOR ALLEN.

1. Physiological Anatomy. *M., W., F.*, 2. One credit. Mr. BARDEEN.
2. Comparative Anatomy. *M., Tu., W., Th., F.*, 9 to 12. Three credits. Mr. ALLEN.
3. Embryology. *M., Tu., W., Th., F.*, 2 to 5. Three credits. Mr. ALLEN.
4. Human Anatomy. *M., Tu., W., Th., F.*, 9 to 5. Credit according to work. Mr. BARDEEN.
5. Topographical Anatomy. *M., Tu., W., Th., F.*, 9 to 5. Credit according to work. Mr. BARDEEN.

BOTANY

ASSISTANT PROFESSOR DENNISTON, MR. STOUT, MR. McALLISTER, MR. MELHUS.

1. General Botany. *M., Tu., W., Th., F.*, 8 to 10, with three additional hours. Three credits. Mr. DENNISTON and Mr. MELHUS.
2. Plant Physiology. *M., Tu., W., Th., F.*, 11 to 1. Two credits. Mr. DENNISTON and Mr. STOUT.
3. Morphology of Seed Plants. *Lectures, M., W.*, 3. Two credits. Mr. McALLISTER.
4. Methods and Materials. *Five hours per week.* One credit. Mr. STOUT.
5. Morphology of the Fungi. *Lectures, M., W.*, 11. Two credits. Mr. MELHUS.
6. Mosses and Ferns. *Lectures, Tu., Th.*, 3. Two credits. Mr. McALLISTER.

CHEMISTRY

PROFESSOR KAHLBERG, ASSISTANT PROFESSOR WALTON, MR. KLEIN, DR. KRAUSKOPF, MR. NEBEL.

1. General Chemistry. *Lectures, M., Tu., W., Th., F.*, 10. Two credits for the lecture course. Mr. KAHLBERG, Mr. KRAUSKOPF, Mr. NEBEL,

2. Qualitative Analysis. *Lectures, Tu., Th., 9.* Two or more credits. Mr. KRAUSKOPF, Mr. KLEIN.
3. Elementary Quantitative Analysis. *Lectures, Tu., Th., 8.* Three or more credits. Mr. WALTON.
4. Advanced Quantitative Analysis. *Lectures, F., 9.* Two or more credits. Mr. WALTON.
5. The Teaching of Chemistry. *Lectures, M., W., 9.* Two credits. Mr. WALTON.
6. Physical Chemistry. *Lectures, M., W., F., 8.* Three or more credits. Mr. KAHLENBERG, Mr. KLEIN.
7. Organic Chemistry. *Lectures, Tu., Th., 8.* Three or more credits. Mr. KLEIN, Mr. NEBEL.

EDUCATION

PROFESSORS ELLIOTT AND O'SHEA, DR. NEUMANN (COLLEGE OF THE CITY OF NEW YORK).

1. Principles of Teaching. *M., Tu., W., Th., F., 10.* Two credits. Mr. O'SHEA.
2. Mental Development. *M., Tu., W., Th., F., 11.* Two credits. Mr. O'SHEA.
3. Supervision of Instruction. *M., Tu., W., Th., F., 8.* Two credits. Mr. ELLIOTT.
4. State School Systems. *M., Tu., W., Th., F., 9.* Two credits. Mr. ELLIOTT.
5. Principles of Moral Education. *M., Tu., W., Th., F., 12.* Two credits. Mr. NEUMANN.

ENGLISH

ASSOCIATE PROFESSORS LATHROP AND PYRE, ASSISTANT PROFESSORS CAIRNS AND LEONARD, MR. BASSETT.

1. Preparatory English. *M., Tu., W., Th., F., 8; M., W., F., 9.* Mr. BASSETT.
2. Freshman English. *M., Tu., W., Th., F., 8; M., W., F., 9.* Three credits. Mr. LEONARD.
3. Advanced Freshman English. *M., Tu., W., Th., F., 9; M., W., F., 10.* Three credits. Mr. CAIRNS.
4. The Romantic Movement: Byron, Shelley and Keats. *M., Tu., W., Th., F., 10.* Two credits. Mr. LEONARD.
5. Shakspearean Tragedy. *M., Tu., W., Th., F., 11.* Two credits. Mr. PYRE.

6. The Novel. *M., Tu., W., Th., F.*, 8. Two credits. Mr. LATHROP.
7. The Short Story. *M., Tu., W., Th., F.*, 11. Two credits. Mr. CAIRNS.
8. Shakspeare's Later Contemporaries. *M., Tu., W., Th., F.*, 10. Two credits. Mr. PYRE.
9. Milton. *M., Tu., W., Th., F.*, 9. Two credits. Professor LATHROP.
10. The Teaching of English. *M., Tu., W., Th., F.*, 12. Two credits. Mr. BASSETT.

GEOGRAPHY

ASSISTANT PROFESSOR WHITBECK.

1. Physical Geography. *M., Tu., W., Th., F.*, 11. Two credits.
2. Commercial Geography. *M., Tu., W., Th., F.*, 9. Two credits.
3. Field Study. *Hours to be arranged.* One credit.

GERMAN

PROFESSORS HOHLFELD AND VOSS, ASSOCIATE PROFESSOR EVANS, ASSISTANT PROFESSOR GOODNIGHT, DR. FEISE, DR. MORGAN.

1. Beginners' German. *M., Tu., W., Th., F.*, 10 to 12. Four credits. Mr. MORGAN.
2. Second Year German. *M., Tu., W., Th., F.*, 10 to 12. Four credits. Mr. FEISE.
3. Conversation. *M., Tu., W., Th., F.*, 8. One credit. Mr. EVANS.
4. Composition and Grammar Review. *M., Tu., W., Th., F.*, 11. Two credits. Mr. VOSS.
5. Schiller. *M., Tu., W., Th., F.*, 12. Two credits. Mr. GOODNIGHT, Mr. MORGAN.
6. Rapid Reading. *M., Tu., W., Th., F.*, 10. Two credits. Mr. GOODNIGHT.
7. Heine. *M., W., F.*, 9. One credit. Mr. EVANS.
8. Advanced Practice in Writing and Speaking German. *M., Tu., W., Th., F.*, 9. Two credits. Mr. FEISE.
9. Teachers' Course. *M., Tu., W., Th., F.*, 12. Two credits. Mr. EVANS.
10. Gothic Grammar. *M., W., F.*, 12. One credit. Mr. MORGAN.

11. Modern Novelists. *M., Tu., W., Th., F.*, 9. Two credits. Mr. GOODNIGHT.
12. Early Modern High German. *M., W., F.*, 10. One credit. Mr. VOSS.
13. German Drama of Nineteenth Century. *M., Tu., W., Th., F.*, 8. Two credits. Mr. HOHLFELD.
14. Seminary in German Philology. *Tu., Th.*, 9 to 10:30. One credit. Mr. VOSS.
15. Seminary in German Literature. *Tu., Th.*, 11 to 1, and a fifth hour. Two credits. Mr. HOHLFELD.

GREEK

PROFESSOR NORLIN (University of Colorado).

1. Elementary Greek. *M., Tu., W., Th., F.*, 12. Two credits.
2. Classical Mythology. *M., W., F.*, 11. One credit.
3. Theocritus, Bion, and Moschus. *M., W., F.*, 10. One or two credits.

HISTORY

PROFESSORS MUNRO, SELLERY AND TURNER, ASSOCIATE PROFESSOR WESTERMANN, AND DR. ROOT.

1. Greek History to the Time of Alexander. *M., Tu., W., Th., F.*, 9. Two credits. Mr. WESTERMANN.
2. Medieval History, 1095-1500. *M., Tu., W., Th., F.*, 10. Two credits. Mr. SELLERY.
3. United States since 1830. *M., Tu., W., Th., F.*, 8. Two credits. Mr. ROOT.
4. Greco-Roman World from Alexander to 100 A. D. *M., Tu., W., Th., F.*, 11. Two credits. Mr. WESTERMANN.
5. Medieval Civilization. *M., Tu., W., Th., F.*, 10. Two credits. Mr. MUNRO.
6. Europe, 1789-1900. *M., Tu., W., Th., F.*, 11. Two credits. Mr. SELLERY.
7. The West since 1830. *M., Tu., W., Th., F.*, 9. Two credits. Mr. TURNER.
8. The American Revolution. *M., Tu., W., Th., F.*, 10. Two credits. Mr. ROOT.
9. Seminary. *Tu., Th.*, 12, with a third hour. One credit. Mr. MUNRO.

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10. Seminary. *M., Tu., W., Th., F.*, 8. Two credits. Mr. TURNER.
11. Teachers' Course. *M., W., F.*, 12. One credit. Mr. MUNRO.

LATIN

ASSOCIATE PROFESSOR FISKE, ASSISTANT PROFESSOR KATHERINE ALLEN,
AND MR. BRANDT.

1. Elementary Latin. *M., Tu., W., Th., F.*, 8 to 10. Four credits. Mr. BRANDT.
2. Caesar's *Bellum Gallicum*. *M., Tu., W., Th., F.*, 10. Two credits. Mr. BRANDT.
3. Cicero. *M., Tu., W., Th., F.*, 11. Two credits. Miss ALLEN.
4. Latin Prose Composition. *Tu., Th.*, 10, *with a third hour*. One credit. Mr. FISKE.
5. Roman Literature. *M., Tu., W., Th., F.*, 10. Two credits. Miss ALLEN.
6. Virgil. *M., W., F.*, 9. One credit. Mr. FISKE.
7. The Teaching of Latin. *M., Tu., W., Th., F.*, 8. Two credits. Mr. FISKE.

LIBRARY TRAINING

MISS HAZELTINE, MRS. SAWYER AND MISS KENNEDY.

1. Cataloguing and Use of Library Books. *M., Tu., W., Th., F.*, 9.

MATHEMATICS

PROFESSOR SLICHTER, ASSOCIATE PROFESSOR MASON, ASSISTANT PROFESSOR SKINNER, DR. ALLEN, DR. WOLFF.

1. Algebra. *M., Tu., W., Th., F.*, 10. Two credits. Mr. SLICHTER.
2. Solid Geometry. *M., Tu., W., Th., F.*, 12. Miss ALLEN.
3. Plane Trigonometry and Logarithms. *M., Tu., W., Th., F.*, 8. Two credits. Mr. SKINNER.
4. Analytic Geometry. *M., Tu., W., Th., F.*, 10. Two credits. Miss ALLEN.
5. Calculus. *M., Tu., W., Th., F.*, 11. Two credits. Mr. MASON.
6. Graphic Methods and Practical Calculations. *M., W., F.*, 9. One credit. Mr. SLICHTER.
7. Complex Numbers and Algebraic Equations. *Tu., Th.*, 9, *with a third hour*. One credit. Miss ALLEN.

8. Selected Topics in Algebra. *M., W., F., 11.* One credit. Mr. SKINNER.
9. Integral Calculus. *M., Tu., W., Th., F., S., 8 and 12.* Four credits. Mr. WOLFF.
10. Differential Equations. *M., Tu., W., Th., F., 9.* Two credits. Mr. SKINNER.
11. Theory of Functions. *M., Tu., W., Th., F., 10.* Two credits. Mr. MASON.
12. Theory of Attractions. *M., W., F., 11.* One credit. Mr. SLICHTER.
13. Harmonic Analysis. *M., W., F., 9.* One credit. Mr. MASON.

METEOROLOGY

MR. MILLER, U. S. WEATHER BUREAU.

1. Elementary Meteorology. *Lectures, Tu., Th., 3.* One credit.

MUSIC

MR. DYKEMA

1. Public School Music. Elementary. *M., Tu., W., Th., F., 11.* Two credits.
2. Public School Music. Advanced. *M., T., W., Th., F., 12.* Two credits.
3. Music Appreciation. *M., Tu., W., Th., F., 10.* One credit.

PHILOSOPHY

PROFESSORS MCGILVARY, SCHMIDT (CORNELL UNIVERSITY), AND SHARP.

1. Introductory Psychology. *M., Tu., W., Th., F., 9.* Two credits. Mr. SHARP.
2. The Relation of Philosophy to Science. *M., Tu., W., Th., F., 9.* Two credits. Mr. MCGILVARY.
3. The Evolution of Morality. *M., Tu., W., Th., F., 8.* Two credits. Mr. SHARP.
4. The Ethics of the Great Poets. *M., Tu., W., Th., F., 10.* Two credits. Mr. SCHMIDT.

PHYSICAL TRAINING

PROFESSOR ELSOM, ASSISTANT PROFESSOR MAYHEW, AND ASSISTANTS.

1. Light Gymnastics. *M., Tu., W., Th., F., 12.* Mr. ELSOM.
2. Light Gymnastics. *M., Tu., W., Th., F., 11.* Miss MAYHEW.

3. Swimming. Men's class, *Tu., Th., S.*, 5. Women's classes, *M., W., F.*, 5; *Tu., Th., S.*, 11. Mr. ELSOM and assistants.
4. Folk-Dances and Games. *M., Tu., W., Th., F.*, 12. Miss MAYHEW.
5. Teachers' Course. *M., Tu., W., Th., F.*, 10. Two credits. Miss MAYHEW.
6. First Aid. *M., Tu., W.*, 4. Mr. ELSOM.
7. Plays and Playgrounds. *M., W., F.*, 9. Mr. ELSOM.

PHYSICS

ASSISTANT PROFESSOR INGERSOLL, MR. TERRY, MR. STEVE.

1. General Lectures. *M., Tu., W., Th., F.*, 12. Two credits. Mr. TERRY.
2. General Laboratory Practice. Credit according to work. Mr. STEVE.
3. Heat or Light. *M., Tu., W., Th., F.*, 9. Two credits. Mr. INGERSOLL.
4. Advanced Laboratory Practice. Heat or Light. *M., Tu., W., Th., F.*, 10 to 12. Credit according to work. Mr. INGERSOLL.
5. Electricity and Magnetism. *M., Tu., W., Th., F.*, 8. Two credits. Mr. TERRY.
6. Advanced Laboratory Practice. Electricity and Magnetism. *M., Tu., W., Th., F.*, 2 to 4. Credit according to work. Mr. TERRY.
7. Lectures for Teachers. *M., Tu., W., Th., F.*, 5. Mr. INGERSOLL.

POLITICAL ECONOMY

PROFESSORS ADAMS AND WARD (BROWN UNIVERSITY), ASSISTANT PROFESSOR WICKER (DARTMOUTH COLLEGE), AND MRS. SPENCER (NEW YORK SCHOOL OF PHILANTHROPY).

1. The Elements of Economic Science. *M., Tu., W., Th., F.*, 8. Two credits. Mr. WICKER.
2. Taxation. *M., Tu., W., Th., F.*, 12. Two credits. Mr. ADAMS.
3. Labor. *M., Tu., W., Th., F.*, 9. Two credits. Mr. WICKER.
4. Elements of Statistics. *Lectures, M., W., F.*, 10. Two credits. Mr. ADAMS.
6. Origin and Development of Society. *M., Tu., W., Th., F.*, 10. Two credits. Mr. WARD.

7. Sociology. *M., Tu., W., Th., F.*, 11. Two credits. Mr. WARD.
8. Social Movements and Social Service. *M., Tu., W., Th., F.*,
9. Two credits. Mrs. SPENCER.

POLITICAL SCIENCE

PROFESSOR SCOTT, ASSISTANT PROFESSOR MEYER.

1. Government and Politics in the United States. *M., Tu., W., Th., F.*, 8. Two credits. Mr. SCOTT.
2. Elementary Law. *M., Tu., W., Th., F.*, 9. Two credits. Mr. SCOTT.
3. Municipal Government. *M., Tu., W., Th., F.*, 10. Two credits. Mr. MEYER.
4. State Administration. *M., Tu., W., Th., F.*, 11. Two credits. Mr. MEYER.

PUBLIC SPEAKING

ASSOCIATE PROFESSOR LYMAN.

1. Argumentation. *M., W., F.*, 2. One credit.
2. Platform Speaking. *M., W., F.*, 3. One credit.
3. Interpretative Reading. *Tu., Th., S.*, 10. One credit.
4. Extempore Speaking. *Tu., Th., S.*, 11. One credit.
5. Pedagogy of Public Speaking. *Hours to be arranged.*

ROMANCE LANGUAGES

ASSOCIATE PROFESSOR GIESE, ASSISTANT PROFESSOR REED, MR. CATTELL,
DR. CERF, DR. ZDANOWICZ.

1. Beginners' French. *M., Tu., W., Th., F.*, 8 to 10. Four credits. Mr. ZDANOWICZ.
2. Second Semester French. *M., Tu., W., Th., F.*, 11. Two credits. Mr. CATTELL.
3. Advanced French. *M., W., F.*, 9. One credit. Mr. REED.
4. Fourth Semester French. *M., W., F.*, 10. One credit. Mr. CERF.
5. Grammar and Composition. *M., W., F.*, 12. One credit. Mr. CATTELL.
6. French Pronunciation. *Tu., Th.*, 9, *with a third hour.* One credit. Mr. CERF.
7. Elementary Conversation. *M., Tu., W., Th., F.*, 8. One credit. Mr. CERF.

8. Advanced Conversation. *M., Tu., W., Th., F.*, 10. One credit. Mr. GIESE.
9. Molière. *M., W., F.*, 11. One credit. Mr. ZDANOWICZ.
10. French Novel. *M., W., F.*, 12. One credit. Mr. CERF.
11. The Romantic School. *M., W., F.*, 9. One credit. Mr. GIESE.
12. Old French. *M., W., F.*, 12 (Hour subject to wishes of class). One credit. Mr. REED.
14. Elementary Italian. *M., W., F.*, 10. One credit. Mr. ZDANOWICZ.
15. Italian Literature. Mr. ZDANOWICZ.
16. Elementary Spanish. *M., Tu., W., Th., F.*, 11; *M., W., F.*, 12. Three credits. Mr. GIESE.
17. Advanced Spanish. *Tu., Th.*, 8, *with a third hour*. One credit. Mr. REED.
18. Old Spanish. *M., W., F.*, 8. One credit. Mr. REED.

ZOOLOGY

ASSISTANT PROFESSOR HOLMES.

1. Invertebrate Zoology. *Lectures, M., W.*, 8. Two credits.
2. Entomology. *Lectures, Tu., Th.*, 9. Two credits.
3. The Teaching of Zoology. *Tu., Th., F.*, 12. One credit.

LAW SCHOOL

PROFESSORS COOK, GILMORE, HINTON (UNIVERSITY OF MISSOURI), AND
RICHARDS, ASSOCIATE PROFESSOR MOORE.

FIRST YEAR

- PROPERTY I. Eight hours a week for ten weeks. Five and one-third credits. Mr. MOORE.
- CRIMINAL LAW. Four hours a week for ten weeks. Two and two-third credits. Mr. COOK.

SECOND AND THIRD YEARS

- ADMINISTRATIVE LAW II. Four hours a week for ten weeks. Two and two-third credits. Mr. COOK.
- CODE PLEADING. Eight hours a week; second five weeks. Two and two-third credits. Mr. HINTON.

- EQUITY II. Eight hours a week, first five weeks. Two and two-third credits. Mr. RICHARDS.
- PARTNERSHIP. Four hours a week for ten weeks. Two and two-third credits. Mr. GILMORE.
- SALES. Four hours a week for ten weeks. Two and two-third credits. Mr. GILMORE.

COLLEGE OF AGRICULTURE

AGRICULTURAL EDUCATION

ASSISTANT PROFESSOR HATCH.

1. Agricultural Education. Three hours a week. One credit.

AGRONOMY

PROFESSOR R. A. MOORE, MR. STONE.

1. General Outline of Agronomy. *Lectures, Tu., Th., F., 11.* Two credits. Mr. MOORE and Mr. STONE.
2. Weed Identification and Seed Inspection. *Lectures, M., W., 11.* Two credits. Mr. STONE.

ANIMAL HUSBANDRY

Mr. TORMEX.

1. Elementary Live Stock Judging. *M., Tu., W., Th., F., 8 to 10.* Two credits.

DAIRY HUSBANDRY

PROFESSOR FARRINGTON, MR. BENKENDORF.

1. Testing and Handling Milk and its Products. *Lectures, Tu., Th., 10.* Two credits.

HOME ECONOMICS

PROFESSOR MARLATT, MISS HOPE, MISS ———.

1. Foods. *Lectures, Tu., Th., 9.* Two credits. Miss MARLATT.
2. Textiles. *Lectures, W., F., 9.* Two credits. Miss ———.
3. Theory of Design. *Lectures, M., W., 8.* Two credits. Miss HOPE.
4. Practical Design. *Lectures, Tu., F., 8.* Two credits. Miss HOPE.

HORTICULTURE

ASSISTANT PROFESSOR J. G. MOORE.

1. Plant Propagation. *Lectures, M., W., F.*, 10. Two credits.
2. School Gardening. *Lectures, Tu., Th.*, 10. Two credits.

SOILS

MR. WALSTER.

1. Elementary Soils. *Lectures, M., W., S.*, 10. Two credits.

COLLEGE OF ENGINEERING**ELECTRICAL ENGINEERING**

ASSISTANT PROFESSORS SHUSTER AND WATSON, MR. PRICE, MR. SANFORD.

1. Alternating Currents. Three credits.
2. Testing Direct-Current Dynamos. One or two credits.
3. Testing Alternating Current Machinery. One or two credits.

HYDRAULIC ENGINEERING

ASSISTANT PROFESSOR DAVIS AND INSTRUCTORS.

1. Experimental Hydraulics.
2. Advanced Experimental Hydraulics.

MACHINE DESIGN

PROFESSOR MACK.

1. Mechanism. Credit to be arranged.
2. Machine Elements. Credit to be arranged.
3. Design of Complete Machines. Credit to be arranged.

MECHANICAL DRAWING

PROFESSOR PHILLIPS, ASSISTANT PROFESSOR MILLAR.

1. Elements of Drawing I. Three credits.
2. Elements of Drawing II. Three credits.
3. Descriptive Geometry. Three credits.

APPLIED MECHANICS

ASSISTANT PROFESSOR WITHEY, MR. MCCULLOUGH.

1. Statics.
2. Strength of Materials.
3. Materials Laboratory. Credit to be arranged.

SHOP WORK

SUPERINTENDENT STEEN, MR. DABNEY, MR. DORRANS, MR. GABRIEL, MR. MATTERN, MR. PAYTON, MR. SLADKY.

Elementary and advanced courses in the blacksmith shop, the wood shop, and the foundry. Credit to be arranged.

STEAM AND GAS ENGINEERING

ASSOCIATE PROFESSOR THORKELSON, ASSISTANT PROFESSOR CHRISTIE, MR. ———.

1. Steam Turbines. One credit.
2. Gas Engines and Gas Producers. One credit.
3. Compressed Air. One credit.
4. Heating and Ventilation. One credit.
5. Calibration of laboratory instruments and the determination of efficiencies. One credit.
6. Continuation of course 5 covering more complex types of engines. One credit.
7. Abridged Course. One credit.

SURVEYING

ASSOCIATE PROFESSOR L. S. SMITH, MR. OWEN, MR. PARKER, MR. CUTLER.

1. Elementary Surveying. Credit to be arranged. Mr. OWEN.
2. Elementary Surveying. Credit to be arranged. Mr. OWEN.
3. Advanced Surveying. Credit to be arranged. Mr. OWEN.
4. Topographic Drawing and Mapping. Credit to be arranged. Mr. OWEN.
5. Trigonometrical Survey. (Given at Portage Camp.) Mr. SMITH, Mr. PARKER, Mr. CUTLER.

SUMMER COURSES FOR ARTISANS AND APPRENTICES

These courses of shop work and laboratory practice are offered for the benefit of machinists, carpenters, or sheet-metal workers; stationary, marine, or locomotive engineers; shop foremen and superintendents; superintendents of water-works, electric light plants, power stations, factories, large office and store buildings in cities, and for young men who wish to qualify themselves for such positions. The session is six weeks in length, being coincident with the Summer Session of the College of Engineering. The tuition fee is \$15, to which are added small laboratory and shop fees. For circular address the Registrar.

THE GRADUATE SCHOOL

GEORGE C. COMSTOCK, Director.

GENERAL STATEMENT

The University of Wisconsin is a part of the system of public instruction provided by the State, but is open to all properly qualified students without regard to state lines. The students of the Graduate School are largely from other educational institutions located in many states, although, many of them come from the University's own undergraduate departments. It is the aim of the University to offer the opportunities for advanced instruction and research to as wide a constituency as possible. No limitations are placed upon a student's freedom in research and in the expression of his conclusions upon subjects which he is prepared to treat but the University avoids all that is partisan in politics and sectarian in religion, without debarring its members from investigation and activity in any field.

ORGANIZATION

Prior to 1895 the graduate work of the University was conducted by its several departments of instruction without further cooperation than is implied in their relations to the University as a whole. The development of this work, however, led to its

organization, in 1895, as a Department of Graduate Study, and in 1904 it was advanced to the status of a Graduate School, the administration of which was entrusted to a committee of the University faculty called the Administrative Committee of the Graduate School. The Chairman of this committee was in 1906 made Director of the Graduate School. He is charged with general supervision of all graduate students, and is the medium of communication between such students and the University administration. The faculty of the Graduate School includes all members of the instructional staff of the University in charge of graduate courses.

AIMS AND METHODS

The Graduate School aims to serve the needs of young men and women of college training who desire a larger and more thorough acquaintance with the scholarship and research of the world than can be obtained in the current undergraduate courses. It seeks to awaken in the minds of capable men and women an appreciation of high scholarship, research, and the advancement of learning, to the end that they may effectively aid, not only in the promulgation of academic instruction, but also in extending the boundaries of knowledge. Although the work of the Graduate school is in large part planned with reference to the needs of those who desire to fit themselves for the higher positions in the work of education, and who as preparation for this work seek to specialize along definite lines, the opportunities of the School are open to others as well.

The University aims to give advanced instruction of a high character in each department of its Graduate School, but the scope, form, and methods of this instruction are determined independently within the several departments. Lectures, laboratories, and the seminary method are largely employed, and special emphasis is every where laid upon bringing the graduate student into contact with the research problems of his department of study. To this end able students share in the investigative work of their instructors, and are encouraged to acquire the spirit as well as the methods of productive work. Provision has been made by the University for the publication under its auspices of the results of specially meritorious work of this kind, and doctors' theses of more than common merit are occasionally thus published.

CLUBS AND SOCIETIES

To promote interest in problems of scholarship and investigation, and for training in the presentation of results, numerous voluntary clubs and societies have been established by instructors and students in the Graduate School. Among these are:

THE SCIENCE CLUB,
THE CLASSICAL CLUB,
THE LANGUAGE AND LITERATURE CLUB,
THE HISTORICAL CONFERENCE,
THE ROMANCE LANGUAGE CLUB,
THE GERMAN JOURNAL CLUB,
THE CHEMICAL CLUB.
THE BIOLOGICAL CLUB,
THE MATHEMATICAL CLUB,
THE WISCONSIN SECTION OF THE AMERICAN CHEMICAL SOCIETY,
THE UNIVERSITY OF WISCONSIN BRANCH OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS,
THE UNIVERSITY OF WISCONSIN SECTION OF THE AMERICAN ELECTROCHEMICAL SOCIETY.

The GRADUATE CLUB, while sharing in these purposes, is primarily a social organization for the promotion of acquaintance and good fellowship among graduate students and members of the faculty.

FELLOWSHIPS AND SCHOLARSHIPS**University Fellowships**

For the purpose of promoting higher scholarship and research the Regents of the University have established twenty University Fellowships of the annual value of \$400 each. These are allotted to the several departments of instruction as follows:

To Political Economy, two; to History, two; to Geology and the Biological Sciences, two; to Engineering, two; to Agriculture, two; to the following departments and groups of departments one each, viz.: Political Science, Sociology, Latin, Greek, German, Romance Languages, Chemistry, Physics, Mathematics and Astronomy, Philosophy and Education.

To the above should be added an endowed fellowship in English especially described upon a following page.

The following are the regulations respecting these fellowships:

1. Any fellowship to which the present regulations apply may be held by any graduate of a college of recognized standing or by anyone whose education is equivalent to that represented by a college degree. Those about to take such a degree are eligible as candidates, the regulations applying to the time of entrance upon the duties of the fellowship. Men and women are equally eligible. Preference in appointment will usually be shown to candidates who possess a competent reading knowledge of French and German.
2. Fellowships will be granted upon application only, which should be made upon a special blank form furnished by the Registrar of the University; such application, with accompanying evidence of merit, attainment, and ability, to be in the hands of the Registrar before March 1st of the collegiate year preceding that during which the fellowship is to be held.
3. All fellowships will be filled each year. Fellows may be re-appointed for one additional year only.
4. Application must be accompanied by evidence of scholarship, ability and general worthiness; such as theses (whether prepared for this or other purposes), published writings, testimonials from instructors, outline of educational course pursued, special distinctions gained and the like. Applications for reappointment should contain a full account of the work of the preceding year. Applications to receive attention, must contain a definite statement of the special studies which the applicant intends to pursue.
5. Each fellow shall pursue his studies under the direction of the professor or professors in charge of his special studies. Assignment of University services to the fellows shall be made by the President in consultation with the head of the department to which the fellow has been assigned, and the work assigned may be equivalent to one hour of teaching daily, or the supervision of laboratory work for two hours daily. It is stipulated that the holder of the Sociology fellowship shall do work at the University Settlement in Milwaukee.
6. Vacancies in fellowships, due to resignation or other cause, may be filled as they occur, at the option of the faculty.

Honorary Fellowships

The Regents have established honorary fellowships, equal in number to the regular fellowships, and filled in a similar way. These are restricted, however, to persons who have already held academic honors, such as fellowships. No compensation is attached to these positions except the remission of University fees, and no teaching service is required; but to be eligible to an honorary fellowship one must be a graduate of at least one year's standing.

The Mary M. Adams Graduate Fellowship in English

By will the late Charles Kendall Adams, formerly President of the University of Wisconsin conveyed the larger part of his estate to the regents of the University for the gradual establishment of fellowships in Modern History, Greek and in the English Language and Literature. The first of these fellowships, the Mary M. Adams Graduate Fellowship in the English Lan-

guage and Literature became available in the academic year 1906-07, since which time the annual amount paid to the incumbent has ranged from \$450 to \$500.

The Gustav Kletsch Fellowship

Through the generosity of Gustav Kletsch, M. D., of Milwaukee, there was established in 1901 a fellowship in Bacteriology. There is at present about \$250 remaining in this fund.

Alumni Fellowship in Journalism

A graduate fellowship in journalism of an annual value of \$400 is offered by the Alumni Association of the University of Wisconsin to be filled from graduates of the University.

Graduate Scholarships

The Regents of the University maintain seventeen graduate scholarships of the value of \$225 each. Two of these are designated for Economics, one for Political Science, one for European history, one for American history, two for Agriculture, and three for Engineering. Appointments to these scholarships are made in the same manner as appointments to fellowships, but, by special provision, authority is conferred upon the faculties of Lawrence College, of Ripon College, of Carroll College, of Milwaukee Downer College, and of Beloit College to nominate annually to the faculty of the University of Wisconsin one member of their respective senior classes as a suitable candidate for a University scholarship. Such candidates, when duly appointed by the Regents of the University, shall be in all respects upon the same footing as other University scholars.

Through the generosity of friends of the University, there has been established the Henry Gund Graduate Scholarship in the Department of German, of the annual value of approximately \$225, and three J. Ogden Armour Scholarships in Agriculture, of the annual value of \$250 each.

All fellows and University scholars are required to pay the regular incidental fee, but are exempt from the non-resident tuition fee.

ADMISSION TO THE GRADUATE SCHOOL

Graduates from four-year courses of liberal study in any approved university or college will be admitted to the Graduate School without examination, but will not be considered as candidates for a higher degree until announcement of such candidacy has been made to the director of the Graduate School. Undergraduates of the University of Wisconsin who have completed all requirements for the baccalaureate degree will also be admitted to the Graduate School. Each applicant for admission to the Graduate School should, in person, present his college diploma to the University Registrar, who will admit him to the University, and will furnish a statement of fees to be paid at the Regents' office. This statement serves also as a certificate of enrollment in the Graduate School, and should be presented promptly to the Director, at Room 162 University Hall, who will issue to the student an election card for presentation to the several instructors under whom he desires to study. Students already enrolled in the Graduate School should obtain from the Director an election card at or before the beginning of each semester. (For a statement of fees to be paid in the Graduate School see page 98.)

ASSIGNMENT OF STUDIES

The election card should be presented first to the instructor under whom the student's principal work is to be done, designated his major professor, who will advise with regard both to the courses of major study and to the subordinate studies that may be combined advantageously with the major. The studies thus determined will be entered upon the election card, which must be signed by the instructor in charge of the major and endorsed with the approval of each other instructor with whom work is to be taken. The completed card should be submitted, in person, to the Director of the Graduate School as soon as possible after the opening of the semester. The student's registration is not complete until the election card has been thus submitted to and approved by the several officers above named and returned to the Director.

Graduate students are invited to confer freely with the Director of the Graduate School in all matters concerning their relations to the University.

SECOND DEGREES

The University of Wisconsin confers the following second degrees: *Master of Arts*, *Master of Science*, *Master of Philosophy*, *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, *Chemical Engineer*.

These degrees are conferred in accordance with the conditions set forth below, upon graduates of the University of Wisconsin and upon graduates of other institutions of learning whose training has been substantially equivalent to that represented by the baccalaureate degree of the University of Wisconsin. The University will determine this substantial equivalence of training by such methods as seem best adapted to each case, and may impose upon any candidate such additional requirements as seem needful and just; its judgment in this respect being determined by the actual attainments of the candidate rather than by the institution at which he has previously studied.

The degree, *Master of Arts*, is conferred upon candidates whose undergraduate work corresponds to that now leading to the degree, *Bachelor of Arts*, as conferred by the University of Wisconsin, and whose graduate studies are non-professional in character. The degree, *Master of Science* and the second degrees in engineering are respectively conferred upon candidates whose undergraduate work corresponds to that now leading to the degree, *Bachelor of Science*, as conferred by the University of Wisconsin. The degree, *Master of Philosophy* is conferred only upon those candidates who have received from the University of Wisconsin the degree of *Bachelor of Philosophy*, but such candidates may receive the M. A. degree in lieu of Ph. M. by absolving, as a supplement to their graduate work, all requirements for the B. A. degree not satisfied at the time of taking their Ph. B.

Candidacy for the above degrees is normally based upon resident study at the University, but in a considerable class of cases provision is made whereby a measure of credit is extended to work done *in absentia*. In no case, however, will a master's degree be conferred without the equivalent of one semester of resident graduate study at the University of Wisconsin.

The following regulations for the attainment of second degrees apply to all candidates in residence.

1. During a period of at least one academic year the candidate must pursue a course of graduate study characterized by defi-

niteness of purpose and approved by the University as appropriate to that purpose and suitable in amount. Such a course includes normally for each semester assigned graduate work carrying from nine to twelve credits and at least one-half of this work must lie in a single department. The undergraduate preparation of the candidate must be sufficient to satisfy the instructor that the advanced work may be profitably undertaken. Undergraduate courses not listed for graduate credit, may be elected in addition to the normal amount of graduate work, provided that the recommendation of the professor in charge of the student's major and the approval of the Director of the Graduate School be obtained in advance.

2. Students who during their candidacy for the master's degree are engaged in teaching, or other remunerative employment, will be required to devote to their studies such period longer than one year as may be designated by the Graduate Committee.

3. For students seeking to specialize in a definite line of study the preparation of a thesis may be required and, subject to the approval of the professor in charge, such thesis work may be elected by others. If elected, a typewritten copy of the completed thesis bearing the approval of the professor under whom it is taken, must be filed with the Librarian of the University on or before June 1 of the year in which the degree is to be conferred.

4. The candidate must sustain an oral examination upon the graduate work offered in support of his candidacy. Subject to the approval of the President of the University, the time and place of this examination will be determined and the examining committee appointed by the Director of the Graduate School.

Second Degrees in Engineering

The degrees, *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer* and *Chemical Engineer* will be conferred:

(a) Upon graduates of approved institutions who have completed suitable undergraduate courses and who pursue one year of advanced engineering study at the University of Wisconsin, in accordance with the rules above set forth for the attainment of second degrees.

(b) Upon graduates of the College of Engineering of the University of Wisconsin who have spent three years in professional work, at least one of which must have been in a position of responsibility, and who present a satisfactory thesis.

Second Degrees for Students in Professional Colleges

Graduates of approved institutions who are regularly enrolled in the professional colleges of this University may supplement their professional studies by work taken in the Graduate School. Upon the completion of an approved course of study they will be admitted to examination for the master's degree, to be conferred at the time of their graduation from the professional college. The course of study thus prescribed for the attainment of the master's degree may be expected, normally, to require one-third of the student's time for a period of two years.

CANDIDATES FOR THE MASTER'S DEGREE PARTLY IN ABSENTIA

Candidates for the master's degree who are graduates of the University of Wisconsin may be permitted, by vote of the Graduate Committee, to do one-half of this work *in absentia*.

By consent of the departments concerned any person, whether a graduate of the University of Wisconsin or not, otherwise eligible to candidacy for a second degree and who has done satisfactory graduate work during one Summer Session of the University, may be admitted to candidacy for a master's degree upon the following terms:

1. The candidate must conform to all of the above regulations for candidates for the master's degree with exception of the requirement of residence for one year.

2. During a period of two consecutive years, while not in residence at the University, the candidate must pursue a course of advanced study previously arranged and approved by some department of the University. This work is designated his major study, and during two Summer Sessions, in addition to the one above named, he must pursue, at the University, work in continuation of, or collateral to, this major; for example, laboratory or seminary work in the department in which the major is taken.

3. As some departments of the University do not concede the privilege of candidacy *in absentia*, the applicant for this privilege must arrange in advance with the department concerned, for its approval of the proposed work and must show that he has access to adequate facilities for its prosecution. A form showing that such arrangement has been made must be completed and filed with the Director of the Graduate School at

or before the close of the first summer session of candidacy. Continuous supervision by the University cannot, in general, be given to work done *in absentia*, and its amount and character must be shown by examination at the University.

THE DOCTOR'S DEGREE

The degree of *Doctor of Philosophy* will be conferred upon successful candidates after not less than three years of graduate study, of which either the first two years or the last year must be spent at this University. The degree is not conferred solely as the result of faithful study extending over any prescribed period. Special attainments are required from all candidates for this degree, particularly the power of independent investigation, shown by the production of a thesis embodying original research or creative scholarship, presented with a fair degree of literary skill.

The attention of graduate students is called to the following regulations respecting candidacy for the doctor's degree.

1. Candidates for this degree are required to select as a principal line of study some definite department of knowledge, with whose entire extent they must become familiar, in general terms, and with some part of which (the one in which the thesis falls), they must acquire a detailed acquaintance. This group of studies is designated the student's major subject, and it is expected that work upon this subject will cover not less than three years of graduate study. The studies of this group may be divided among several instructors, one of whom, designated as in charge of the major, will act as the student's adviser in the selection and arrangement of topics constituting the major, and in the selection of two minor courses of study. Work in the first of these minors will ordinarily extend over a period of two years, and in the second minor over a period of one year. At least one of these minors must be taken in a department other than that in which the major lies, and no two of the three subjects may be taken in chief part under the same instructor.

2. Not later than November 1 of the academic year in which the doctor's degree is to be taken, each candidate for the degree must submit to the Graduate Committee certificates from the departments of French and German of the University of Wisconsin, showing that he possesses a sufficient reading knowledge of these

languages to use them for purposes of research in his major study. All graduate students are urged to absolve this requirement at the earliest possible date.

3. Not later than November 1 of the academic year in which the degree is sought, the candidate shall file with the Director of the Graduate School his formal application for admission to candidacy, accompanied by the title of his proposed thesis, subject to future verbal amendment, and by departmental recommendation of his candidacy obtained through one of the following methods:

(a) Through a written examination conducted by the departments in which his major and first minor subjects lie and designed to test the extent of his knowledge in those fields. The questions constituting this examination and the answers, graded with respect to excellence, must be filed with the Director of the Graduate School at or before the time at which application for admission to candidacy is made.

(b) Through an oral examination of purpose and scope comparable with (a) but conducted by the departments concerned in the presence of one or more representatives of the University designated for that purpose by the Director of the Graduate School. A report upon this examination delimiting its scope and the degree of merit shown by the candidate and signed by the examiners and by the representative above named must be filed with the director at or before the time at which application for admission to candidacy is made.

(c) Through the application of such other substantial tests as the department may elect. In this case a report must be filed with the Director setting forth the nature of the tests employed and the degree of merit shown by the candidate, and the report must bear the signatures of the professor in charge of the candidate's major and first minor subjects.

The several examinations and tests above prescribed will normally be held at the close of the second year of graduate study, but, with the prior approval of the Director of the Graduate School, they may be placed at any date within four months of the normal time.

When approval of a candidacy is made through either of the methods above designated (a) or (b), it may be accompanied by a memorandum limiting the scope of the final oral examination

to a specified part of the major and first minor subjects, and may further provide for a written examination to be held immediately prior to the oral examination as a supplement to it.

The Director of the Graduate School will transmit to the Committee upon the oral examination provided in Rule 4, the reports and other papers filed as above prescribed, for such consideration and use as the committee may desire to make of them.

4. Each candidate for the doctor's degree must sustain an oral examination upon his thesis and upon the general work covered by his major and minor subjects, but a special written examination upon the second minor may be substituted for the oral examination upon the recommendation of the instructor in charge.

5. A fair copy of the thesis with an abstract of the same, certified by the candidate's major professor as suitable for publication, must be submitted to the Director of the Graduate School three weeks before the final oral examination is held. The certificate of the University Librarian that he has received the printed copies of the thesis prescribed in Rule 7 will be accepted in satisfaction of this requirement. In exceptional cases, by consent of the Graduate Committee and upon the recommendation of the professor in charge of the major, the candidate for the doctor's degree may be permitted to take the general examination prior to the approval of the thesis, but the degree will not be conferred until the candidate has passed an oral examination upon the special field of his thesis, to be held when the thesis is approved.

6. Subject to the approval of the President of the University, the Director of the Graduate School will appoint an examining committee, usually composed of four or five persons, and will designate a time and place for the examination.

7. The successful candidate is required to put his thesis into print and to deposit *one hundred copies* of the same in the University Library. If the thesis is printed in a journal, or as a bulletin, reprints will be accepted for the library, but these must be provided with a special cover and title page in proper thesis form. The diploma may be conferred before the thesis is printed, provided a written or typewritten copy bearing the approval of the Graduate Committee is deposited with the University Librarian, and the sum of fifty dollars is deposited with the Secretary

of the Regents, as a guaranty of subsequent publication. This deposit will be refunded on presentation of the printed copies to the University Librarian within the ensuing two years but is liable to forfeiture after this period.

8. Students who during their candidacy for the doctor's degree are engaged in teaching or other remunerative employment will be required to devote to their candidacy such additional period as may be prescribed by the Graduate Committee.

FEES AND EXPENSES

Graduate students, including those working under supervision *in absentia*, pay the same fees as undergraduates in the College of Letters and Science. See Index, under Fees and Expenses.

COURSES FOR GRADUATES

In all departments of the University courses are offered for undergraduates and graduates, and in many of them, courses primarily for graduates. These courses are described under the above headings in the departments of study in which they are severally offered.

GRADUATE CIRCULAR

The special announcement of the Graduate School for 1910-11, giving detailed information concerning the school, may be obtained upon application to the Registrar of the University.

Chen. ✓

DEGREES

CONFERRED ON COMMENCEMENT DAY, 1909

COLLEGE OF LETTERS AND SCIENCE

Bachelor of Arts

Frances Clark Albers	Amy Comstock
Alice Irene Alford	Elisabeth Conrad
Ruth Alice Allen	Irving Bardshar Crandall
Achsah Cornelia Anderson	Clara Margaret Cronin
Edna Leola Violet Baer	Michael Francis Cudahy
George Corbin Bailey	Carl Jefferson Cunningham
*Florence Edith Barr	Martha Elizabeth Curtis
Mary Ryan Catherine Barry	William Nathaniel Daniells
Ferdinand von Arlt Bartlett	James Francis Desmond
✓ Frederick Louis Baumbach FWK	Eugene Augustus Dinot
Ernest F. Bean	*Raymond Ephraim Dixon
Kathryn Christina Becker	✓ Fred Price Downing RF
Lona Irene Bergh	Anna Regina Dunn
John Mack Bessey	*Dorothy Louise Epstein
Raymond Thayer Birge	Charles Floyd Evans
Orpha Lucetta Bissel	*Clara Margaretta Eyland
John Donald Black	Helen Fairfield Fitch
*Araminta Pearl Blanchard	✓ Michael Henry Flynn VL
Marguerite Bower	Emma Frodermann
*Ida Huston Bowles	Sarah Estella Gamble
Alma Marie Boyd	Jane Gapen
Hazel Ella Bram	Charlotte Georgia Gardiner
Frederick Sarles Brandenburg	Kathrene Sutherland Gedney
Robert White Bridgman	Olive Gertrude Gesley
Gustave William Buchen	Edna Annie Gilkey
Dorothy Marie Burnham	Walter Oscar Gloyer
Ethel Romelia Burnham	Olivia Monona Goldenberger
Frances Amanda Butterfield	Marie Gregory
Grace Raymond Cady	Chester Arthur Griswold
Elva Jane Caradine	Alice Mary Grover
Magdalena Towers Carpenter	Jennie Emilie Haman
Sidney Lester Castle	Carolyn Hazel Handt
Clara Elizabeth Cavanaugh	William Frawley Hannan
Charles Rollin Clark	*Josephine Burntine Hanson
Ethel Baugh Clark	May Estelle Hayes
Ava Luella Cochrane	Jane Josephine Habenstreit
Chester William Collmann	Alice Alene Henry

* Degree conferred since Commencement, 1909.

- Clarence Addison Hibbard
 Hazel Bessex Higbee
 Irma Hochstein
 Nanna Marie Hoegh
 *James Mangan Hogan
 Arthur Thomas Winans Holmes
 Emily Evelyn Holmes
 Anna Holston
 Erwin Silas Homuth
 Amy Jane Hopson
 Helen Hosmer
 Edith Evans Hoyt
 Grace Elizabeth Hoyt
 *Philip Loren Hudson
 Lois Constance Immell
 John Hugo Johnson LK
 Louise Jenkins
 Carl Henry Juergens
 Ernst Jung
 Alphons Edward Kahlhamer
 Mabel Lorena Kalmbach
 Sarah Elizabeth Kaye
 Stella Otillia Kayser
 Mary Margaret Kelly
 Mary Anne King
 Ralph Quad Klotz
 Douglas Scotten Knight
 Lenore Krause
 Adelaide Krumrey
 Clara Lachmund
 Lewis P. Larson
 Agnes Veronica Leary
 Eva Grace Lewis
 Isabell Meekin Lewis
 Read Lewis
 Louise Bunnell Lindemer
 Hazel Frances Linkfield
 Louis Paul Lochner
 Mary Ellen Longfield
 Huldah Mary Loomis
 George Terrance McConville
 *Emma Elizabeth Manor
 Lydia Lucile Meyer
 Karl Ferdinand Miller
 Mary Elizabeth Moffatt
 Allison More
 Ruth Elizabeth Moss
 Theda Antoinette Moss
 Nellie Christine Murphy
 *Julia Aloysius Murray
 Olga Theresa Nelson
 Clara Brooks Neville
 Harry Sidney Newcomer
 Lois May Owens
 Lylia Janet Owens
 Marian Helen Patterson
 Marion Grace Peabody
 Charles Chester Pearce
 Lillian Alida Perkins
 Blanche Beulah Phillips
 Lilla Mary Pomeroy
 Kate Post
 Marie Louise Pressentin
 Beulah May Price
 May Margarette Putnam
 Henry Capron Quarles
 Bertha Marie Rakow
 Edward Ira Rankin
 Grover Herman Rapps
 Mary Elizabeth Rayne
 *Lorraine Recker
 Mary Louise Rice
 *William Henry Riley
 Earl Price Roberts
 Arthur Hampton Robertson
 Aleta Robison
 Jesse Lawrence Rodabaugh
 Floy Gladys Rose
 Blanche Louise Rosencranz
 *Thompson Ross
 Johanna Rossberg-Leipnitz
 Nellie Claire Roybar
 Margaret Elizabeth Ryan
 Herman William Sachtjen
 †William Louis Schuppert
 Arthur Leonard Schwalm
 Blanche Akeley Seek
 *Johannes Wilhelm Siegmeyer
 Blanche Sim
 Verazano Kerdolff Simpson
 *Percy Wilfrid Slocum
 Carolyn Emeline Smith
 *Elize Miles Smith
 Helen Elizabeth Smith
 Jessie Clemons Smith
 Lloyd Pyre Spellman
 Forest Henry Staley
 Charles Rudolph Steinfeldt

* Degree conferred since Commencement, 1909.

Laura Anna Steinke	Clarice Van Auken
Theodore Carl Stempfel	Mary Janet Van Hise
Mary Eleanor Stickney	Hildegard Caroline Volkmann
*Ewald Ottowin Stiehm	Mary Elizabeth Watkins
Arlow Burdette Stout	Virginia Wattawa
Daniel George Stover	Marian Clarke Welch
John Frederick Stuckert	Nellie Charlotte Weston
Lou Ethel Switzer	Hazel Wetlaufer
Anna Emelie Syftestad	† Mary Reid Whitelaw
Dora Louise Sykes	James Ray Whittler
Arch Le Roy Tarrell	Raymond Carl Wieboldt
Edna June Terry	Eda Marie Wilke
Stith Thompson	Alma Lee Wilkins
Leo Francis Tiefenthaler	George Henry Willett
*Joseph Tobenkin	Mabel Elizabeth Williams
Kate Trainor	Edwin Emil Witte
Florence Laura Trumpf	✓ Ella Marie Wyman ✓

COURSE IN COMMERCE

Earle Francis Baley	Guy Meredith Pelton
John Albert Conley	Adolph Charles Edward Peters
Louis Arthur Coorsen	* Charles Herbert Preston
William Ward Davidson	Walter Whitney Rector
Giles Budlong Doud	Chester Edward Rightor
Harold Mann Dudley	Kinichi Sato
Elmer Andrew Erickson	Theodore Henry Schoenwetter
Ida Fenton	* Robert Henry Schwandt
Albert William Grady	Genkwan Shibata
Oscar Rudolph Haase	Hugo Herbert Siefert
Mark Joseph Kerschensteiner	Jacob Weber Sproesser
Rey Vincent Luce	Ole Selmer Syftestad
* Glenn Edgar Pelton	Walter George von Kaltenborn

Bachelor of Philosophy

* Merl McMain Ames	Alice May Ketcham
Nels Andreas Anderson	Edward Gustavus Lange
William Tait Anderson	* Edward Leroy Mayo
Sarah Alice Baker	Mary Irene Mercer
Frederick Anthony Buechel	Leland Griffin Mustain
Timothy Theodore Cronin	Paul Henry Neystrom
Bernard Ogilvie Dodge	* Gladys Parke
Arthur George Fromm	Herman Joseph Parmley
† Margaret Spears Gill	John Wesley Rodewald
Verna Clara Glanville	Gertrude Helen Schwalbe
Burton Enoch Gowin	Nina Helena Skuldt
Nicholas Gunderson	Louis Urban St. Peter
Alfred James Herrick	William John Trautmann
Emmy Senta Huebner	Lewis Ashley Vantine
John Louis Karnopp	L. Elizabeth Wilson

* Degree conferred since Commencement, 1909.

† Degree conferred Feb. 17, 1909.

‡ Graduate of the Normal Department in 1886.

Bachelor of Science, Medical Science Course

Howard Lombard Beye	Otto Gunther
Wayne William Bissell	Theodore John Gunther
Norman Delroy Brophy	Dora May Simons
Victor Peter Diederich	Forrest Foster Slyfield
Roland Frederick Fisher	Harry Nicholas Sutherland

Bachelor of Science, Chemistry Course

George William Heise	Walter Nebel
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Bachelor of Science, Pharmacy Course

William Henry Kendall	John Swenholt
Henry Louis Schulz	Martin Edwin Titus

Graduate in Pharmacy

Edward George Bach	James Isaac Turner
Walter Gustav Grimmer	Theo Mary Woolhiser

COLLEGE OF ENGINEERING**Bachelor of Science****GENERAL ENGINEERING COURSE**

Edwin Marcotte Ball	Ross Kenneth McComb
William Matthew Bertles	Pomeroy Cooper Merrill
Charles Albert Cheney, Jr.	*Ralph Waldo Muckleston
Edgar Bergman Colladay	*Victor Leo Phillips
Sidney Hugh Davis	Benjamin Smith Reynolds
Harold Winthrop Drew	Ernest John Springer
Raymond Walter Fisher	Helmer Swenholt
Paul Hodges	William Gustave Weber
Hale Haven Hunner	

MECHANICAL ENGINEERING COURSE

Alfred Freude Coleman	Alfred Victor Larson
James Knight Cook	Robert Dudley Lewis
Bruce Vincent Edwards	Barton Le Roy Milliren, Jr.
Elmer Andreas Ely	Roland Moeller
Merle Everitt Faber	Robert Alonso Pawling
Samuel Newton Hope	Hiram Smith Rankin
Frederick Walter Ives	Fred Hubert Ripley
Edward Francis Johns	Elmer Horace Whittaker
William Jacob Kutschera	Gustav Adolf Wickstrom
Herman Lachmund	Henry Carl Zantow

CIVIL ENGINEERING COURSE

Louis George Arnold	Charles Glenn Burritt
John Willigrod Balch	John Thomas Buser
Henry Edwin Balsley	Frank Henry Cenfield
Edward Mitchel Bandli	Joseph Albert Cutler
Floyd Elton Bates	Manuel Cutler
John Walter Becker	Chester Theodore Dahl
Earl Charles Brackenhagen	Frank Alfred De Boos

* Degree conferred since Commencement, 1909.

Byron Kaye Dutton
 Vernon Quam Edwards
 Samuel Morton Fisher
 Harrison Levi Garner
 Alexander Richard Garnock
 Oscar Francis Gayton
 John Glaettli, Jr.
 Pastor Gomez y Pineda
 Fred Earl Hale
 Max Werner King
 William Otto Herman Krahn
 Louis Martinus Larson
 Amory Raymond Mitchell
 William Charles Mühlstein

Alonzo Benton Ordway
 Berlin Alwood Theodore Rustone
 Ren George Saxton
 *Andrew Charles Scherer
 Leathem Daley Smith
 Edward Charles Stocker
 George Patrick Stocker
 Roland Emil Stoelting
 Raymond Frederic Storer
 *Henry Alfonsa True, Jr.
 Carl Fred Urbutt
 *Kenneth Van Auken
 Albert Matthew Wolf
 Ralph Mark Yager

ELECTRICAL ENGINEERING COURSE

Eric Walton Austin
 William Beacher Bassett
 Roy Milton Beitel
 George William Bell
 Louis Bustamante
 Sahak Melkon Chuchman
 Jesse Frank Conway
 Emil Ernest Engsborg
 Ralph Henry Ford
 Ernest Carl Griswold
 William Haegers
 Irving Weslie Hull
 Edward Estabrook Huntington
 *Clarence Nathan Johnson
 Glen Leroy Johnson
 Phillip Hafford Johnson
 Charles Alvin Jones
 Franz August Kartak
 Charles Wesley Lowe
 Eli Ross Manor
 Andrew Henry Martin

Cornelius L. McMullen
 Harold Elbert McWethy
 Walter George Minich
 Alexander William Morgan
 Lester Maxwell Moss
 William Rex Muehl
 Franklin James Natwick
 Lester Benson Orr
 Charles Leo Searles
 John Richard Shea
 Adolph Shipek
 Glen Edward Smith
 Ernest Joseph Steinberg
 Arthur Baldwin St. George
 Edward Herman Schroeder
 Irving Hamilton Van Horn
 Harvey Babcock Wheeler
 John David Wright
 Hubert Wueth
 Russie Cornelius Younggren
 William Paul Zabel

Chemical Engineering Course

Frederick Foster Farnham
 Clark Henry Kypke
 Charles August Mann

George Cameron McNaughton
 Erwin Roman Suhm
 Louis Witt

Graduates of Advanced Engineering Courses

MECHANICAL

Frank Richard Froehlich

ELECTRICAL

Francis Ellis Johnson

Walter Wolleben Küstermann

CIVIL

Herman Charles Kuhl

* Degree conferred since Commencement, 1909.

COLLEGE OF AGRICULTURE

Bachelor of Science (Agriculture)

William Truman Crandall	John Messmer
Joseph C. Curtis	William Earl Morris
Louis Reinhold Detjen	Frederick Ludwig Musback
Charles Earl Gapen	Louis Nelson
Jose Jalandoni y Habana	Alvin Cecil Oosterhuis
*Kirk Lester Hatch	William Leon Porter
John Moses Humphreys	Morris Wilford Richards
James Johnson	Charles Vladis Ruzek
Roland August Kolb	George Henry Selke
William Casper Lassetter	Albert Stocker
Alfred Tennyson Lathrop	William Eugene Thompson
Edward Starr Leverich	Emil Truog
William Lauren McPetridge	Vivian Rowley Wheelwright
Richard Louis Marken	Francis Henry Zentner

LAW SCHOOL

Bachelor of Laws

George August Affeldt	Clarence Joseph Hartley
David King Allen, B. A.	Adolph Rudolph Janecky, B. A.
William Ensign Atwell	*James Albert Johnson, B. A.
Elmer Elbert Barlow	*Herman Henry Karrow
*Clark Hiram Belknap, M. A.	Don Raymond Lehman
Guy Alfred Benson	Adolph Philip Lehner
Oscar McDonald Black	Robert John Morter
Eugene Brookings	Roy Enoch Noyes, B. A.
*Luke Francis Burns	Conrad Patrick Olson
*Alfred Hanson Bushnell, B. A.	Harlow Francis Pease, B. A.
*Eugene Arthur Clifford	Joseph Roe Piffner
William Benjamin Collins	Arthur William Prehm
William Robert Curkeet	James Patrick Riley
*Carl Ebbe Dreutzer	†Miles Charles Riley
Joseph Eder, B. A.	Harlan Bethune Rogers
Edward Wenzel Elmer	Harry Sauthoff, B. A.
Ernest John Galbraith	Dale Curry Shockley, B. A.
*John David Gardner	*Roy Sartial Stephenson
John Walter Gauerke	*Lawrence Benjamin Webster
George John Graebner	Hubert Otto Wolfe, B. A.
Arthur Herrmann Gruenewald, B. A.	Wendell Woodruff
Charles Norton Hall, B. A.	†Colin Wilson Wright, B. A.
†Carl Newell Hill	*Carl Frederick Gustav Zollmann

* Degree conferred since Commencement, 1909.

† Degree conferred Feb. 17, 1909.

SCHOOL OF MUSIC

Graduate in Music

Winifred Pansey Coon	Winefrid Martha Ellen Ryan
Josephine Darlington Hudson	Jennie Mabel Taylor
Barbara Hazel Klinefelter	Selma Toepfer
Maybelle Olson	Lewis Ashley Vantine
Edward Ira Rankin	

HIGHER DEGREES

Master of Arts

Margaret Eliza Ashmun, Ph. B. (University of Wisconsin), in English.

*William Harley Barber, B. S. (University of Wisconsin), in Physics.

William Abbott Brannon, B. A. (University of Kansas), in Agricultural Chemistry.

— Robert Kemp Brewer, B. A. (University of Wisconsin), in Physical Chemistry.

Ray Broughton, B. A. (University of Wisconsin), in Political Economy.

Mary Campbell, B. L. (University of Wisconsin), in Sociology.

*Lee Edwin Cannon, B. A. (Eureka College), in German.

Mary Huntington Comings, B. S. (Northwestern University), in English.

Sarah Eugenia Conrad, M. A. (University of Arkansas), in French.

*Ivan Deach, B. A. (Leland Stanford Junior University), in Greek.

John Smith Dexter, B. A. (Ripon College), in Zoology.

— Melvin Edison Diemer, B. A. (University of Wisconsin), in Chemistry. ✓

— Robert Baldwin Dunlevy, B. L. (University of Wisconsin), in Physical Chemistry. ✓

Mabel Kathryn Frehafer, B. A. (Bryn Mawr College), in Physics.

Hans David Gaebler, B. A. (Northwestern University, Watertown), in Philosophy.

Joseph Stanislas Galland, B. S. (University of Maine), in French.

Otto Washington Greubel, B. A. (University of Wisconsin), in German.

*Nathan Cesna Grimes, B. A. (University of Michigan), in Mathematics.

Milton Rietow Gutsch, B. A. (University of Wisconsin), in History.

Edgar Albert Hall, B. A. (University of Wisconsin), in English.

*Horatio Bates Hawkins, B. A. (University of Wisconsin), in Political Science.

*Howard Copeland Hill, B. A. (Indiana University), in History.

Harris Hazelton Holt, B. A. (Oxford University), in European History.

Bessie Bell Hutchison, B. L. (Northwestern University), in English Literature.

Hartley Harrad Thompson Jackson, B. S. (Milton College), in Zoology.

Hally Delilia Mary Jolivet, B. A. (University of Wisconsin), in Botany.

Ruby Koenig, B. L. (Milwaukee Downer College), in German.

Roy Milton Lewis, B. A. (Lawrence College), in Political Economy.

— Russell S. McBride, B. S. (University of Minnesota), in Chemistry.

*George Vest McCauley, B. S. (Northwestern University), in Physics.

Elizabeth Bowman McGregor, B. A. (University of Wisconsin), in Latin.

* Degree conferred since Commencement, 1909.

- Daisy May Martin, B. A. (Kansas State Normal School), in English.
 Heinrich Hermann Maurer, B. A. (University of Wisconsin), in American History.
 Nils Andreas Olsen, B. A. (Luther College), in European History.
 Ralph Albert Owen, B. A. (Northwestern University, Watertown), in English.
 Henry Gray Parkinson, B. A. (University of Wisconsin), in American History.
 *Bertha Helen Preuss, Ph. B. (University of Wisconsin), in German.
 *Peter Rasmussen, B. S. (Carleton College), in Political Economy.
 Aute Richards, B. A. (University of Kansas), in Zoology.
 Lulu Lillian Runge, B. A. (University of Wisconsin), in Mathematics.
 Anna Gunihlla Saby, B. A. (University of Wisconsin), in French.
 *Rudolph Jahnke Schultz, B. A. (Olivet College), in German.
 Horace Secrist, B. A. (University of Wisconsin), in Political Economy.
 William Frederick Steve, Ph. B. (University of Wisconsin), in Physics.
 *Charles August Stoll, Ph. B. (Greenville College), in European History.
 Nancy Maria Miller Surrey, B. S. (University of Chicago), in American History.
 *William James Sutherland, Ph. B. (University of Wisconsin), in Geography.
 Edward O. Tabor, B. A. (Tulane University), in American History.
 Lent Dayton Upson, B. A. (University of Wisconsin), in Political Science.
 *Frances B. Wells, Ph. B. (University of Chicago), in English.
 Alfred Gary White, B. A. (Lawrence College), in Political Economy.
 Yosaburo Yoshida, B. S. (Waseda University), in Political Economy.

Master of Science

- Francis Salisbury Adams, M. E. (Cornell University), in Geology.
 Federico Felipe Cárdenas, B. S. (University of Wisconsin), in Animal Husbandry.
 Walter Henry Cooper, B. S. (University of Wisconsin), in Animal Husbandry.
 Edmond Joseph Delwiche, B. S. (University of Wisconsin), in Agronomy.
 — Horace Grove Deming, B. S. (University of Washington), in Chemistry.
 William Elmer Forsythe, B. S. (Denison University), in Physics.
 Carl Emil Lee, B. S. (North Dakota Agricultural College), in Dairy Husbandry.
 Charles Bernard Lipman, B. S. (Rutgers College), in Bacteriology.
 William Meadors Lunn, B. S. (Clemson Agricultural College), in Agronomy.
 James Garfield Milward, B. S. (University of Wisconsin), in Horticulture.
 Raymond Winthrop Moseley, B. S. (University of Wisconsin), in Horticulture.
 John McGuire Napier, B. S. (Clemson Agricultural College), in Agronomy.
 Augustus James Rogers, Jr., B. S. (University of Wisconsin), in Horticulture.

* Degree conferred since Commencement, 1909.

Bryant Raymond Ryall, B. S. (University of Wisconsin), in Horticulture.

*Waldo Albert Titsworth, M. A. (Alfred University), in Physics.

William Harmon Wright, B. S. (Purdue University), in Agricultural Bacteriology.

Electrical Engineer

Sylvan Joseph Lisberger, B. S. (University of Wisconsin).

Thesis: Report on Underground Installation District A of the San Jose Division, California Gas and Electric Corporation.

John Church Potter, B. S. (University of Wisconsin.)

Thesis: Toll Development Study.

Frederick Henry Rickeman, B. S. (University of Wisconsin).

Thesis: Tests for Power-input for Operating the Equipments at the Lead and Zinc Mines in Southwestern Wisconsin.

†Clarence Irving Zimmerman, B. S.

Thesis: Some Types of Circuits for Voltage Current and Power Control.

Civil Engineer

Leland Rella Balch, B. S. (University of Wisconsin).

Thesis: The Blackfeet Irrigation Project United States Reclamation Service.

Clarence Melrose Larson, B. S. (University of Wisconsin).

Thesis: The Study of the Traffic Conditions on Wisconsin Logging Roads.

Adolph Frederick Meyer, B. S. (University of Wisconsin).

Thesis: General Plan of High Lock Mississippi River at Soldiers' Home, Minneapolis, Minnesota.

Reuben Sylvester Peotter, B. S. (University of Wisconsin).

Thesis: The Manufacture of Bi-sulphite Pulp with an Introductory Discussion of the Commercial Raw Materials and Present Conditions.

Frank Edwin Washburn, B. S. (University of Wisconsin).

Thesis: Substructure of the St. Louis Electric Bridge, St. Louis, Missouri.

Lester Dennison Williams, B. S. (University of Wisconsin).

Thesis: Highland Boulevard Viaduct, Milwaukee, Wisconsin.

Chemical Engineer

James Aston, B. S. (University of Wisconsin).

Thesis: The Magnetic Properties of Electrolytic Iron and Iron Alloys.

Alcan Hirsch, M. S. (University of Wisconsin).

Thesis: A Further Study of Pyrophoric Alloys.

Otto Louis Kowalke, B. S. (University of Wisconsin).

Thesis: A Study of Gas Calorimeters.

* Degree conferred since Commencement, 1909.

† Died May 15, 1909.

Mechanical Engineer

John Seabury Dean, B. S. (University of Wisconsin).

Thesis: The Bascule Bridge, Its Origins, the Different Types, etc., Including the Design of the Machinery for a Trunnion Bascule.

Frederick William Greve, Jr., B. S. (University of Wisconsin).

Thesis: Efficiency Test of an Eighteen Inch Pelton Water Wheel One-inch Nozzle.

Doctor of Philosophy

*Ruth Florence Allen, M. A. (University of Wisconsin), in Botany, Zoology and Organic Chemistry.

Thesis: Studies in Spermatogenesis and Apogamy in Ferns.

*Raymond Calvier Benner, M. A. (University of Wisconsin), in Inorganic Chemistry, Economic Geology, and Optical Mineralogy.

Thesis: The Fractionation of the Yttrium Earths by Means of the Succinates.

*Clarence Eugene Boyd, B. A. (Wofford College), in Latin, Greek, and Philosophy.

Thesis: Public Libraries and Literary Culture in Ancient Rome (Early Empire).

Charles Dean Cool, M. A. (Harvard University), in French, Spanish, and Latin.

Thesis: French Literature in American Magazines Prior to 1831.

Frederick Shipp Deibler, M. A. (Harvard University), in Political Economy, American History.

Thesis: History of the Amalgamated Woodworkers' International Union of America.

Fred Duncalf, B. A. (Beloit College), in European History, American History, and Political Science.

Thesis: The Peasants' Crusade.

*Francis Craig Krauskopf, M. A. (University of Wisconsin), in Physical Chemistry, Inorganic Chemistry, and Applied Electrochemistry.

Thesis: Vapor Pressure of Water and Sodium Chloride Solutions.

*Benjamin Franklin Lutman, B. A. (University of Missouri), in Botany, Zoology, and Bacteriology.

Thesis: Some Contributions to the Life History and Cytology of the Smuts.

Alonzo Simpson McDaniel, M. A. (University of Wisconsin), in Physical Chemistry, Inorganic Chemistry, Applied Electrochemistry.

Thesis: Absorption of Gases by Non-aqueous Liquids.

Theresa Schmid McMahon, M. A. (University of Washington), in Sociology, Political Economy.

Thesis: The Evolution of Home Industry and its Effects upon the Status of Women.

William Frederick Notz, M. A. (University of Wisconsin), in Hebrew, Hellenistic Greek, Semitics.

Thesis: The Masoretic Text of Nabum Critically Compared with the Ancient Versions.

* Degree conferred since Commencement, 1909.

Edward Bunker Schlatter, M. A. (Harvard University), in French Philology, Italian Literature, Latin.

Thesis: The Development of the Vowel of the Initial Syllable in Latin.

— Charles William Stoddart, B. A. (Columbia University), in Inorganic Chemistry, Soils, Geology.

Thesis: New Separations in the Yttrium Group by Means of Stearates and Selenates.

* William Joseph Trimble, M. A. (Washington State College), in American History, Political Science, and Ancient History.

Thesis: The Mining Advance into the Inland Empire.

Homer Andrew Watt, M. A. (University of Wisconsin), in English Literature, English and German Literature.

Thesis: Gorboduc or Ferrex and Porrex.

— * Wendell Garrett Wilcox, Ph. M. (Syracuse University), in Physical Chemistry, Inorganic Chemistry, and Applied Electrochemistry.

Thesis: Studies in Osmotic Phenomena.

— Edward Wolesensky, M. A. (University of Wisconsin), in Inorganic Chemistry, Mineralogy, Organic Chemistry.

Thesis: A Study of the Metallic Tellurites.

HONORARY DEGREES

Doctor of Laws

Jenkin Lloyd Jones, Director of the Abraham Lincoln Center, Chicago, Illinois.

Albert John Ochsner, Director of the Augustana Hospital, Chicago, Illinois.

Master of Arts

Emma Helen Blair, Historian, Madison, Wisconsin.

HONORS IN SPECIAL STUDIES

College of Letters and Science

William Tait Anderson, in American History.

Thesis: The Influence of William B. Allison in Congressional Legislation, 1863-1880.

Lona Irene Bergh, in Latin.

Thesis: Roman Provincial Administration in Cicero's letters.

Raymond Thayer Birge, in Physics.

Thesis: A Study of the Reflecting Power of Metals in Liquids of Various Refractive Indices.

Emma Frodermann, in European History.

Thesis: English Fisheries in the Sixteenth Century and their Influence on Colonization.

Sarah Estella Gamble, in American History.

Thesis: Causes and Results of the Black Hawk War.

* Degree conferred since Commencement, 1909.

Kathrene Sutherland Gedney, in Sociology.

Thesis: The Role of Private Philanthropy as a Forerunner to State and Municipal Activities.

Mabel Lorena Kalmbach, in European History.

Thesis: Anglo-Dutch Relations in the East Indies, 1603-1623.

Louis Paul Lochner, in Political Science.

Thesis: The Direct Primary in Wisconsin.

Lydia Lucile Meyer, in German.

Thesis: Nietzsche's Ideas in some of Sudermann's works.

Paul Henry Neystrom, in Education.

Thesis: The School Census.

Johanna Rossberg-Leipnitz, in German.

Thesis: Democratic Tendencies in the Novels of Friedrich Spielhagen.

Genkwan Shibata, in Political Economy.

Thesis: Principles of Depreciation, Secret Reserves, Reserves (open), Sinking Funds and Surplus.

Stith Thompson, in English.

Thesis: The Return from the dead in Popular Tales and Ballads.

College of Engineering

Sidney Hugh Davis, in Geology.

Thesis: The Source of the Upper Huronian Group of Sediments of the Lake Superior Region.

The Law School

George August Affeldt,

Thesis: The Effect of the Uniform Sales Act on the present Law in Wisconsin.

Guy Alfred Benson,

Thesis: The Status of Infants in Wisconsin.

William Robert Curkeet,

Thesis: The Law of Wisconsin concerning Married Women.

* Degree conferred since Commencement, 1909.

SUMMARY OF GRADUATES

		1909
Number of first degrees granted, 1854-1909.....	7704	492

Present Courses:

Courses leading to the Degree Bachelor of Arts, including Course in Commerce, 26, 1909	1306	232
Course for Normal School Graduates, 1898-1909	297	30
Civil Engineering Course, 1873-1909.....	376	42
Mechanical Engineering Course, 1876-1909..	275	20
Electrical Engineering Course, 1892-1909....	372	42
Chemical Engineering Course, 1903-1909....	27	6
General Engineering Course, 1901-1909.....	81	17
Law Course, 1869-1909.....	1800	46
Pharmacy Course, 1884-1909.....	291	8
Course in Agriculture, 1878-1909.....	122	28
Medical Science Course, 1909.....	10	10
Chemistry Course, 1909.....	2	2
School of Music, 1898-1909.....	114	9

Courses discontinued:

Ancient Classical Course, 1854-1903.....	470
Modern Classical Course, 1876-1903.....	548
English Course, 1887-1903.....	458
Civic Historical Course, 1893-1903.....	383
General Science Course, 1886-1903.....	722
School of Commerce (B. L., 8; B. S., 1, 1902-1903)	9
Normal Course, 1865-1868.....	25
Metallurgical Engineering Course, 1876-1896	16

Higher Degrees on Examination, 1875-1909.....	732	104
Masters, 1879-1909	482	68
Engineers, 1875-1909	105	19
Doctors of Philosophy, 1892-1909.....	145	17

STUDENTS

GRADUATES

FELLOWS AND SCHOLARS

Ayer, Wesley Frost	<i>Beloit.</i>
B. A., Beloit College,	Beloit College Graduate Scholar.
Banning, Bernice Thornton	<i>Providence, R. I.</i>
B. A., Brown University,	Fellow in Greek.
Bates, Floyd Elton	<i>Madison.</i>
B. S., University of Wisconsin,	Scholar in Civil Engineering.
Becker, John Walter	<i>Chicago, Ill.</i>
B. S., University of Wisconsin,	
	Scholar in Hydraulic Engineering.
Bidgood, Lee	<i>University, Va.</i>
M. A., University of Virginia,	Fellow in Political Economy.
Birge, Raymond Thayer	<i>Troy, N. Y.</i>
B. A., University of Wisconsin,	Scholar in Physics.
Black, John Donald	<i>Fort Atkinson.</i>
B. A., University of Wisconsin,	Scholar in English.
Breckenridge, James Miller	<i>Jamestown, Ont.</i>
M. S., University of Wisconsin,	
	Scholar in Chemical Engineering.
Campbell, Robert Argyll	<i>Gurnee, Ill.</i>
B. A., University of Wisconsin,	Fellow in Political Economy.
Chapman, Ronald Eric	<i>Pullman, Wash.</i>
B. S., Washington State College,	Scholar in Political Economy.
Conrad, Elisabeth	<i>Kansas City, Mo.</i>
B. A., University of Wisconsin,	Scholar in Romance Languages.
Crafer, Thomas Woodside Bentley	<i>Milwaukee.</i>
M. A., University of Wisconsin,	
	Honorary Fellow in Political Economy.
Davison, Leslie Leroy	<i>Los Angeles, Cal.</i>
B. A., University of Colorado,	Scholar in Political Economy.
Deniston, Gilbert Ward	<i>Madison.</i>
B. A., Cornell University,	Honorary Fellow in Political Science.
Ernst, Adolphine	<i>Watertown.</i>
M. A., University of Wisconsin,	Fellow in German.
Evans, Alice Catherine	<i>Pottsville, Pa.</i>
B. S., Cornell University,	Scholar in Bacteriology.
Greene, Edward Martin	<i>Nashua, N. H.</i>
B. A., Harvard University,	Fellow in Romance Languages.
Harris, Thomas Luther	<i>Waverly, Ill.</i>
M. A., Ohio State University,	Fellow in Sociology.

- Hastings, Harold Ripley
M. A., Harvard University,
Fellow in Latin. *Hanover, N. H.*
- H'Doubler, Francis Todd
M. A., University of Wisconsin,
Fellow in Mathematics. *Madison.*
- Hubbard, Winfield Scott
M. A., Columbia University,
Fellow in Chemistry. *Madison.*
- Kirk, Charles Townsend
M. A., University of Oklahoma,
Fellow in Geology. *Oklahoma City, Okla.*
- Krey, August Charles
M. A., University of Wisconsin,
Fellow in European History. *Milwaukee.*
- Lochner, Louis Paul
B. A., University of Wisconsin,
Alumni Fellow in Journalism. *Milwaukee.*
- McCauley, George Vest
M. A., University of Wisconsin
Fellow in Physics. *Perryville, Mo.*
- MacDonald, Wilbert Lorne.
B. A., University College, Toronto,
Fellow in English. *Weston, Ont.*
- Notz, William Frederick
Ph. D., University of Wisconsin,
Honorary Fellow in Hebrew
and Hellenistic Greek. *Watertown.*
- Oosterhuis, Alvin Cecil
B. S. A., University of Wisconsin,
Fellow in Animal Husbandry. *Sheboygan Falls.*
- Radke, William Frank
B. A., Lawrence College,
Lawrence College Graduate Scholar. *Menomonee Falls.*
- Rasmussen, Peter
M. A., University of Wisconsin,
Vogel Fellow in Sociology. *Webster, Minn.*
- Richards, Morris Wilford
B. S. A., University of Wisconsin,
Fellow in Horticulture. *Madison.*
- Robinson, Edgar Eugene
B. A., University of Wisconsin,
Fellow in European History. *Oconomowoc.*
- Robinson, William Alexander
B. A., Bowdoin College,
Scholar in American History. *Palouse, Washington.*
- Rossberg-Leipnitz, Johanna
E. A., University of Wisconsin,
Scholar in German. *Milwaukee.*
- Rutte, Joseph Walter
B. A., University of Wisconsin,
Scholar in German. *Pella.*
- Severin, Henry Herman Paul
M. A., University of Wisconsin,
Fellow in Zoology. *Milwaukee.*
- Shepherd, Queen Lois
B. A., Northwestern University,
Fellow in Philosophy. *Pueblo, Colo.*
- Tiefenthaler, Leo Francis
B. A., University of Wisconsin,
Scholar in Political Science. *Milwaukee.*
- Valentine, James Alden
B. A., Yale College,
Honorary Fellow in Agricultural
Economics. *Madison.*
- Wakeman, Nellie Antoinette
B. S., University of Wisconsin,
Scholar in Chemistry. *Madison.*
- Wallace, Benjamin B.
B. A., Macalester College,
Fellow in Political Science. *St. Paul, Minn.*

Witte, Edwin Emil	Watertown.
B. A., University of Wisconsin,	Scholar in European History.
Zobel, Otto Julius	Ripon.
B. A., Ripon College,	Ripon College Graduate Scholar.

OTHER GRADUATES

Alvord, Katherine Sprague	Madison.
M. A., Columbia University,	American History.
Anderson, Mina Aletha	Argyle.
B. A., University of Wisconsin,	Home Economics.
Arkin, Aaron	Chicago, Ill.
E. S., University of Chicago,	Pharmacology.
Aron, Albert William	Madison.
M. A., University of Nebraska,	German.
Ascham, Rae Eugene	Madison.
B. A., Ohio Northern University,	Geology.
Ashmun, Margaret Ellza	Waupaca.
M. A., University of Wisconsin,	English Literature.
Augspurger, Louis Fred	Sheboygan.
B. A., University of Wisconsin,	Inorganic Chemistry.
Austin, Charles Burgess	Madison.
M. A., Indiana University,	Political Economy.
Austin, Olive Lillian	Wilmington, Ohio.
B. L., Ohio Wesleyan University.	Mathematics.
Bachman, Freda M.	Madison.
M. A., Miami University,	Botany.
Baker, Oliver E.	Tiffin, Ohio.
M. A., Columbia University,	Agronomy.
M. S., Heidelberg University (Ohio)	
Balch, Leland Rella	Neillsville.
C. E., University of Wisconsin,	Hydraulic Engineering.
Bandt, Helmuth Fred Charles	Sheboygan.
B. S., Valparaiso University,	Chemistry.
Barnes, Rufus A.	Elkhorn.
E. A., University of Wisconsin,	Inorganic Chemistry.
Bascom, Lelia	Madison.
B. L., University of Wisconsin,	English.
Bassett, Harry Kendall	Madison.
B. S., Columbia University,	English.
Becher, Max A.	Milwaukee.
B. A., University of Wisconsin,	Geology.
Beebe, John Cleaveland	Hampden, Mass.
B. S., Dartmouth College,	Hydraulic Engineering.
Bergmann, Paul Julius	Milwaukee.
B. A., Northwestern University,	German.
Berkeley, Frances Campbell	Morgantown, W. Va.
M. A., Columbia University.	English Literature.
Bewick, Grace Beatrice	Madison.
Ph. B., University of Wisconsin,	History.

- Billman, Irwin
 B. L., Ohio Northern University,
 Blackburn, Carolyn Etta
 B. A., University of Wisconsin,
 Blakeman, Edward William
 B. A., Lawrence College,
 Borland, Andrew Allen
 B. S., Pennsylvania State College,
 Boström, Paul Gottfrid
 B. A., Ystad College,
 B. D., Augustana College,
 Bradley, Harold Cornelius
 Ph. D., Yale University,
 Bristol, Edith C.
 Ph. B., University of Vermont,
 Broker, Albert Edward
 B. A., Ripon College,
 Brooks, Elwood Edwin
 B. A., University of Indiana,
 Brophy, Norman D. m
 B. S., University of Wisconsin,
 Byrne, Eugene Hugh
 E. L., University of Wisconsin,
 Cárdenas, Federico Felipe
 M. S., University of Wisconsin,
 Cary, Myra Treat
 B. A., University of Wisconsin,
 Cattell, James Llwellyn
 B. A., Bucknell University,
 Chamberlin, Robert R.
 B. A., Lafayette,
 Chaney, George Arthur
 M. S., Highland Park College,
 Chang, Lau-chi
 B. A., Queen's College, Hongkong,
 Chu, Kungchao
 B. A., Harvard,
 Clark, Stewart Lambert
 B. S., University of Wisconsin,
 Corstvet, Anna Alice
 B. A., University of Wisconsin,
 Cowan, Lynn Freeman
 B. C. E., Iowa State College,
 Cunningham, Frederick William
 E. E., Princeton University,
 Currie, James Nimrod
 M. A., Indiana University,
 Curtis, Joseph C.
 B. S., University of Wisconsin,
- Storm Lake, Iowa.*
 American History.
 Madison.
 Latin.
 Madison.
 Political Economy.
 Sandy Lake, Pa.
 Dairy Husbandry.
 Madison.
 Hebrew.
 Madison.
 Pathology.
 St. Albans, Vt.
 Spanish.
 Lindsay.
 Hydraulic Engineering.
 Madison.
 Chemistry.
 Madison.
 Medicine.
 Baraboo.
 History.
 Saltillo, Mex.
 Soil Chemistry.
 Madison.
 Political Economy.
 Madison.
 French.
 Palmerton, Pa.
 Physics.
 Madison.
 Mathematics.
 Canton, China.
 Political Science.
 Nanking, China.
 Political Science.
 Milwaukee.
 Testing Laboratory.
 Deerfield.
 European History.
 Prairie du Chien.
 Hydraulic Engineering.
 Point Pleasant, N. J.
 Electrical Engineering.
 Bloomington, Ind.
 Organic Chemistry.
 New Lisbon.
 Animal Husbandry.

Dahm, Thomas Matthew

M. A., Northwestern University,

Davies, Caleb, Jr.

M. S., Case School of Applied Science,

Davies, Howell David

M. A., Princeton University,

Deihl, Joseph Dwight

B. A., Eureka College,

Deming, Horace Grove

M. S., University of Wisconsin,

Diemer, Melvin Edison

M. A., University of Wisconsin,

Dike, Paul Harrison

M. S., Northwestern University,

Disque, Robert Conrad

B. S., University of Wisconsin,

Doe, Julia Adrienne

B. A., Bryn Mawr College,

Dondo, Mathurin Marius

M. A., University of Pennsylvania,

Du Mez, Andrew Grover

E. S., University of Wisconsin,

Dunlap, Frederick

F. E., Cornell University,

Ellingson, Emil Oscar

B. S., St. Olaf's College,

Evinger, Morris Irwin

B. C. E., Iowa State College,

Forsythe, William Elmer

M. S., University of Wisconsin.

Gaebler, Hans David

M. A., University of Wisconsin,

Galland, Joseph Stanislas

M. A., University of Wisconsin,

Garrett, Mitchell Bennett

M. A., Howard College,

Garver, Frederic Benjamin

B. A., University of Nebraska,

Gee, Wilson Parham

B. S., Clemson College,

Germann, Albert Frederick Ottomar

M. A., Indiana University,

Gesell, Gerhard Adam

Ph. B., University of Wisconsin,

Gloyer, Walter Oscar

B. A., University of Wisconsin,

Mashek, Anna Magdalene

B. S., University of Missouri,

McGregor, Iowa.

Physics.

Milwaukee.

Applied Electro-chemistry.

Oshkosh.

Hebrew.

Madison.

German.

Madison.

Physical Chemistry.

Madison.

Inorganic Chemistry.

Washington, D. C.

Physics.

Madison.

Electrical Engineering.

Oconomowoc.

Greek.

Paris, France.

Romance Languages.

Cashton.

Plant Chemistry.

Madison.

Physics.

Northfield, Minn.

Physical Chemistry.

Prairie du Chien.

Hydraulic Engineering.

Madison.

Physics.

Watertown.

Philosophy.

Biddeford, Me.

Romance Languages.

Lineville, Ala.

History.

Madison.

Political Economy.

Santoc, S. C.

Zoology.

Peru, Ind.

Physical Chemistry.

Madison.

Political Economy.

Milwaukee.

Botany.

La Crosse.

Agricultural Bacteriology.

Gowin, Enoch Burton
Ph. B., University of Wisconsin.
Gray, Lewis Cecil
M. A., William Jewell College,
Grimes, Nathan Cesna
M. A., University of Wisconsin,
Gutsch, Milton Rietow
M. A., University of Wisconsin.
Haberstich, Felicie Minna
M. A., University of Wisconsin,
Halbert, Charles Arthur
B. S., University of Wisconsin,
Hall, Edgar Albert
M. A., University of Wisconsin,
Hammond, Lester Davisson
B. A., University of Indiana,
Hardy, Ella Marion
B. L., University of Wisconsin,
Harrison, Gordon Leslie
B. A., University of Michigan,
Hawkins, Pliny Haine
M. S., Montana Agricultural College,
Hayes, John Robert
B. A., University of Wisconsin,
Heilman, Ernest Alexander
M. A., University of Wisconsin,
Herrick, Arthur Lowell
B. S., Dartmouth College,
Herrick, Louis Rowell
M. A., University of Wisconsin,
Higson, Charles Roy
B. S., University of Wisconsin,
Hill, Charles Warren
M. A., University of Wisconsin,
Ho, Ling Ih
B. A., St. John's University,
Hooton, Earnest Albert
M. A., University of Wisconsin,
Hoover, John Selden
B. S., Lawrence College,
Hovey, Shirley S.
B. S., State University of Iowa,
Hoyt, Edith Evans
B. A., University of Wisconsin,
Huddle, Wiley Jerome
M. A., Indiana University,
Hunsaker, Andrew Franklin
M. A., University of Illinois,

Belott.
Political Economy.
Madison.
Political Economy.
Madison.
Mathematics.
Sheboygan.
History.
Milwaukee.
French.
Augusta.
Civil Engineering.
Madison.
English Literature.
Terre Haute, Ind.
Chemistry.
La Crosse.
History.
Shelby, Mich.
Physics.
Madison.
Botany.
La Crosse.
Political Economy.
Redwood Falls, Minn.
German Philology.
Gloucester, Mass.
Hydraulic Engineering.
Madison.
Romance Languages.
Salt Lake City, Utah.
Electrical Engineering.
Madison.
Inorganic Chemistry.
Shanghai, China.
Political Science.
Delavan.
Latin.
New Lisbon.
Chemistry.
Clear Lake, Iowa.
Electrical Engineering.
Madison.
English.
Madison.
Chemical Engineering.
Cobden, Ill.
Political Science,

- Inglis, David Nelson
 M. A., University of Wisconsin,
 Isobe, Paul Fusanobu
 B. A., Indiana University,
 Jackson, Hartley Harrad Thompson
 M. A., University of Wisconsin,
 Jahr, Marvin Edward
 B. A., University of Wisconsin,
 James, Albert Earl
 M. A., University of Wisconsin,
 Jandre, Julius August
 B. A., German Wallace College,
 Jefferson, Lorian Pamela
 M. A., University of Wisconsin,
 Jenks, Arthur Harry
 B. A., Lawrence College,
 Johnson, Axel
 M. A., University of Kansas,
 Johnson, James
 B. S., University of Wisconsin,
 Johnson, Phillip Hafford
 B. S., University of Wisconsin,
 Johnstone, Albert Henry
 B. A., University of Wisconsin,
 Jolivette, Hally Delilia Mary
 M. S., University of Wisconsin,
 Jordan, John Henry
 Ph. B., University of Wisconsin,
 Kartak, Franz August
 B. S., University of Wisconsin,
 Kasten, Marie Antoinette
 B. A., University of Wisconsin,
 Kawai, Nabuzo
 B. S., Kansas State Agricultural College,
 Kendell, William Henry
 B. S., University of Wisconsin,
 Ketchum, Wesley Merritt
 B. S., University of Wisconsin,
 Keyser, Clarence
 B. S., Denison University,
 King, Frederick Alonzo
 B. A., Yale University,
 King, Willford Isbell
 B. A., University of Nebraska,
 Klein, David
 M. A., University of Illinois,
 Koenig, Alfred Edward
 B. A., Macalester College,
 Koenig, Ruby, mu
 M. A., University of Wisconsin,
 Madison.
 French.
 Tokio, Japan.
 Applied Electrochemistry.
 Milton.
 Zoology.
 Neillsville.
 Agriculture.
 Madison.
 Political Economy.
 Madison.
 Hebrew.
 Madison.
 Political Economy.
 Lake Mills.
 Dairy Husbandry.
 Milwaukee.
 Sociology.
 Deerfield.
 Horticulture.
 Appleton.
 Electrical Engineering.
 Madison.
 English.
 La Crosse.
 Botany.
 Ontaska.
 American History.
 Oconomowoc.
 Electrical Engineering.
 Milwaukee.
 History.
 Sapporo, Japan.
 Animal Husbandry.
 Waukesha.
 Chemistry.
 Madison.
 Electrical Engineering.
 West Jefferson, O.
 Physics.
 New York City.
 Political Economy.
 Lincoln, Neb.
 Political Economy.
 Chicago, Ill.
 Physical Chemistry.
 Madison.
 Physical Chemistry.
 Two Rivers.
 German.

Kraus, Corinne Arline	<i>Marshfield.</i>
B. A., Milwaukee-Downer College.	German.
Krause, Lenore	<i>Madison.</i>
B. A., University of Wisconsin,	French.
Kroesche, August Christ Friedrich	<i>Madison.</i>
M. A., University of Wisconsin,	Philosophy.
Kunze, Edward Joseph	<i>Madison.</i>
M. E., Cornell University,	Steam Engineering.
Lamb, Hilda Jeannette	<i>Roberts.</i>
B. A., Ripon College.	History.
Lambeck, Arthur Hugo	<i>Milwaukee.</i>
B. A., University of Wisconsin,	Political Science.
Larson, Alfred	<i>Wausau.</i>
B. A., University of Wisconsin,	Agricultural Bacteriology.
Lauer, Arnold William	<i>Norman, Okla.</i>
Ph. B., University of Iowa,	Geology.
Le Febvre, Clarence Charles	<i>Green Bay.</i>
B. A., University of Wisconsin,	Organic Chemistry.
Littleton, Jesse Talbot, Jr.	<i>Greensboro, Ala.</i>
M. A., Tulane University,	Physics.
Lloyd-Jones, Orren	<i>Hillside.</i>
B. S., University of Wisconsin,	Agriculture.
Longfield, Mary Ellen	<i>Madison.</i>
E. A., University of Wisconsin,	Mathematics.
Loomis, Alice Marie	<i>Madison.</i>
B. S., Kansas Agricultural College,	Agricultural Chemistry.
Lowrie, Selden Gale	<i>Madison.</i>
M. A., University of Illinois,	Political Science.
Lyman, Rollo Lu Verne	<i>Madison.</i>
B. A., Harvard College,	Education.
Lynn, Eldin Verne	<i>Tacoma, Wash.</i>
B. A., University of Washington,	Chemistry.
McAllister, Frederick	<i>Madison.</i>
M. A., Beloit College.	Botany.
MacGregor, Ford Herbert	<i>Madison.</i>
B. A., University of Michigan,	Political Science.
McKee, Robert A.	<i>Milwaukee.</i>
M. M. E., Cornell University,	Steam Engineering.
McKittrick, Reuben	<i>Madison.</i>
B. A., University of Oklahoma,	Political Science.
Maeser, Reinhard	<i>Beaver, Utah.</i>
B. A., Brigham Young University,	English.
Manchester, Frederick Alexander	<i>Madison.</i>
M. A., University of Wisconsin,	English Literature.
Mann, Charles August	<i>Madison.</i>
E. S., University of Wisconsin,	Chemistry.
Martin, Elizabeth	<i>Davenport, Iowa.</i>
B. A., University of Iowa,	English.
Mashek, Anna Magdalene	<i>La Crosse.</i>
B. A., University of Wisconsin,	English Literature.

- Melhus, Irving E.
B. S., Iowa State College,
Michell, Robert Bell
M. A., Harvard University,
Michelson, Albert G. I
B. L., University of Wisconsin,
Milward, Daisy
B. A., University of Wisconsin,
Moots, Elmer Earl
M. S., University of Maine,
Motomura, Seizo
B. A., Leland Stanford Junior University,
Moulton, Elton James
B. S., University of Chicago,
Muehlstein, William Charles
B. S., University of Wisconsin,
Nebel, Walter
B. S., University of Wisconsin,
Neilson, Allan Samuel
E. L., University of Wisconsin,
Nelson, Oliver Otto
B. A., University of Wisconsin,
Newcomer, Harry Sidney
B. A., University of Wisconsin,
Nottingham, Avon Roberg
B. S., University of Kansas,
Okami, Shuji
B. A., Waseda University,
Olson, David
B. A., University of Michigan,
Otis, Helen Clarissa
B. A., Vassar College,
Otto, Maxwell Charles
M. A., University of Wisconsin,
Owen, Emily Pratt
B. A., Smith College,
Owen, Ralph Woodland
B. Litt., Princeton University,
Owen, Ralph Albert
M. A., University of Wisconsin,
Pierce, Helen Meroe
B. A., University of Wisconsin,
Pope, Donald Irving
B. A., University of Nebraska,
Potter, Herman Monroe
B. A., University of Wisconsin,
Pritchard, Frederick J.
B. S., University of Nebraska,
Madison.
Botany.
Perth, Ont.
Romance Languages.
Mt. Horeb.
Political Science.
Madison.
English.
Madison.
Mathematics.
Fukuoka, Japan.
Electrical
Engineering.
Madison.
Mathematics.
Madison.
Railway Engineering.
Madison.
Physical Chemistry.
North Milwaukee.
English.
Madison.
Bacteriology.
Pittsburg, Pa.
Mathematics.
Madison.
Steam Engineering.
Tokyo, Japan.
Political Economy.
Stevens Point.
Geology.
Chicago, Ill.
Agriculture.
Wheeling, W. Va.
Philosophy.
Madison.
Spanish.
Eau Claire.
English.
Watertown.
English.
Madison.
Home Economics.
Fall River.
Sociology.
Madison.
Chemistry.
Madison.
Botany.

- Pritchard, Roberta Estelle
 B. A., Fargo College,
 Putnam, James William
 M. A., Cornell University,
 Rakow, Bertha Marie
 B. A., University of Wisconsin,
 Ratcliffe, Emory
 B. A., Earlham College,
 Ray, Ward Low
 B. A., University of Oregon,
 Read, Orlan Bertrand
 Ph. B., Hillsdale College,
 Rodewald, John Wesley
 Ph. B., University of Wisconsin,
 Roehl, Julius Otto, I.
 B. A., University of Wisconsin,
 Roeseler, John Samuel
 B. L., University of Wisconsin,
 Rosenberg, Philip
 B. S., Ohio Wesleyan University,
 Rothschuh, Rudolf Herman Otto

 Rounseville, Irl North
 B. A., Milton College,
 Roush, Gar A.
 B. A., University of Indiana,
 Sanders, Vergil A.
 B. A., Indiana University,
 Schaffrath, William
 B. A., University of Wisconsin,
 Schleeder, Luther Bertram
 B. S., Pennsylvania State College,

 Schmitt, Bernadotte Everley
 B. A., University of Oxford,
 Schneider, Hyrum
 B. A., Brigham Young University,
 Schubring, Selma Langenhan,
 B. A., University of Wisconsin,
 Sears, Jesse B.
 B. A., Leland Stanford Junior University,
 Secrist, Horace
 M. A., University of Wisconsin,
 Shaw, Leon Irwin
 M. S., Syracuse University,
 Sherwood, Robert Griffin
 B. A., Ripon College,
 Simmers, Charles Luther
 B. A., University of Iowa,
- Madison.*
 Sociology.
Indianapolis, Ind.
 Political Economy.
Brandon.
 German.
New Castle, Ind.
 American History.
Deer Lick, Pa.
 Chemistry.
Madison.
 Chemistry.
Plum City.
 American History.
Milwaukee.
 Political Science.
Waukesha.
 Agronomy.
Delaware, O.
 Physics.
New York, N. Y.
 Political Science.
Milton.
 German.
Madison.
 Chemical Engineering.
Orleans, Ind.
 Political Economy.
Madison.
 German.
York, Pa.
 Applied Electro-
 chemistry.
Knoxville, Tenn.
 European History.
Logan, Utah.
 Geology.
Madison.
 English Literature.
Madison.
 Education.
Madison.
 Political Economy.
Alfred, N. Y.
 Physical Chemistry.
Ripon.
 Physics.
Madison.
 Education.

- Simpson, Orson L.
B. S., University of Michigan,
Simpson, Thomas Marshall
B. A., Harvard University,
Sinclair, Alice May
B. A., Beloit College,
Smith, Bertram Garner
B. A., University of Michigan,
Smith, Gilbert Morgan
B. S., Beloit College,
Smith, Glen Edward
B. S., University of Wisconsin,
Sorve, Olaus Olsen
B. A., Carnegie University,
Stanley, Forrester Carroll
B. S., Simpson College
Stanton, Edgar Williams, Jr.
B. C. E., Iowa State College,
Stanton, Margaret Beaumont
M. A., University of Wisconsin,
Steenbock, Harry
B. S., University of Wisconsin,
Steidtmann, Edward
M. A., University of Wisconsin,
Steinfert, Selma Alvina
E. L., University of Wisconsin,
Stout, Arlow Burdette
B. A., University of Wisconsin,
Street, Ida Maria
M. A., University of Michigan,
Sutherland, Harry Nicholas, m.
B. S., University of Wisconsin,
Swenholt, John
B. S., University of Wisconsin,
Tarrell, Arch Le Roy
B. A., University of Wisconsin,
Terry, Earle Melvin
M. A., University of Wisconsin,
Thompson, Oliver Scott
B. A., Lake Forest College,
Tighe, Benjamin Charles B.
Ph. B., University of Wisconsin,
Titus, William Jacy
E. A., Indiana University,
Tomimoto, Shigeru
B. A., Waseda University,
Trainor, Kate
B. A., University of Wisconsin,
Trueman, Joseph Douglas
M. S., Massachusetts Institute of Technology,
- Madison.*
Physics.
Madison.
Mathematics.
New Lisbon.
Botany.
Madison.
Embryology.
Beloit.
Botany.
Madison.
Electrical Engineering.
Fennimore.
English.
Indianaola, Iowa.
Chemistry.
Gridley, Cal.
Hydraulics.
Ames, Iowa.
American History.
Chilton.
Agricultural Chemistry.
Madison.
Geology.
Watertown.
German.
Madison.
Botany.
Madison.
English Literature.
Madison.
Medicine.
Madison.
Plant Chemistry.
Platteville.
Physics.
Madison.
Physics.
Waukegan, Ill.
Bacteriology.
Clinton.
Political Science.
Kirklin, Ind.
Civil Engineering.
Osaka, Japan.
Political Economy.
Madison.
Political Economy.
St. John N. B., Can.
Geology.

- Truog, Emil
 B. S. A., University of Wisconsin,
 Tsur, Ye Tsung
 B. A., Yale University,
 Tucker, Robert Henry
 M. A., William and Mary College,
 Vantine, Lewis Ashley
 Ph. B., University of Wisconsin,
 Veal, Elveda
 B. A., University of Wisconsin,
 Wahl, Harry Roswell, m.
 B. A., University of Wisconsin,
 Wales, Julia Grace
 M. A., Radcliffe College,
 Walster, Harlow Leslie
 B. S., University of Wisconsin,
 Walters, Mary Jennie
 E. A., Iowa State Teacher's College,
 Ward, Louis Edward
 B. S., University of Wisconsin,
 Weber, August William
 Ph. M., University of Wisconsin,
 Welch, Anna Virginia
 B. S., Northwestern University,
 Wellington, Raynor Greenleaf
 M. A., Harvard University,
 Wessels, Philip Henry
 B. S., Michigan Agricultural College,
 West, Allen Brown
 B. A., Milton College,
 Whipple, Attis Andrew
 B. A., University of Kansas,
 White, Emma Ruth
 B. A., Wellesley College,
 White, Frank
 B. S., University of Illinois,
 White, Melvin Johnson
 M. A., University of Wisconsin,
 Woo, Nae Tsung
 B. S., University of California,
 Yang, Ying-yueh
 — Imperial Polytechnic,
 Young, Earle Burdett
 Ph. E., Coe College,
- Arcadia.*
 Analytical Chemistry.
 Shanghai, China.
 Education.
 Madison.
 Political Economy.
 Burlington.
 Botany.
 Stoughton.
 History.
 Stratford.
 Anatomy.
 St. Andrews E., P. Q., Can.
 English Literature.
 Spring Green.
 Soils.
 Cedar Falls, Iowa.
 Latin.
 Ft. Atkinson.
 Electrical Engineering.
 Madison.
 Education.
 Evanston, Ill.
 American History.
 Boston, Mass.
 History.
 Flint, Mich.
 Agricultural Chemistry.
 Milton Junction.
 Latin.
 Kansas City, Mo.
 Hydraulic Engineering.
 Kansas City, Mo.
 Political Economy.
 Shelbyville, Ill.
 Agricultural Engineering.
 Madison.
 American History.
 Chekiang, China.
 Political Economy.
 Wusik, China.
 Political Economy.
 Madison.
 Physics.

UNDERGRADUATES

COLLEGE OF LETTERS AND SCIENCE

SENIORS

Abels, Margaret Hutton t c
 Abbott, Eveline Patience
 Adams, Florence Amelia
 Allard, Louis William m
 Allen, Jessie t c
 Allen, Mary Louisa t c
 Andrus, Calla Adelaide t c
 Anthony, Angela Josephine t c
 Appel, Monte Fiore
 Appleby, Hazel t c
 Atwood, Marion John t c
 Auerbach, Ida
 Axley, Albert August m
 Bailey, Floyd Douglas
 Baird, Oscar W. t c
 Barry, Mary Regina t c
 Bartlett, Walter Scott
 Bechtel, Leslie Andrew l
 Beecher, Benjamin Sanford
 Bigford, Roger Collins
 Bissell, Marion Orpha t c
 Blair, Milton Johnston
 Bodden, Matilda Clara t c
 Borgman, Elizabeth Vera mu, t c
 Bosson, Amy Goodrich
 Boyd, Stanley Mayo
 Bradford, Ann Helen t c
 Brandel, Harry McPherson m
 Brandt, Fredolla Eugenia mu, t c
 Brasure, Eva Moe t c
 Breitenstein, Lillian t c
 Brewer, John Dwight
 Brookins, Julia Louise Clarke t c
 Brown, Elizabeth
 Brown, Jenoise t c
 Budd, Ethel Lockwood t c
 Bullard, Elsie Rea t c
 Burgess, Kenneth Farwell l
 Butler, Anna Isabel t c
 Byrne, Catherine Berenice t c
 Cairns, George Dean
 Carey, Marie A. t c
 Carpenter, Florence Melanie
 Carter, Bessie Ann t c

Waukesha
 Madison
 Mukwonago
 Fond du Lac
 Cambridge
 Lake Geneva
 Madison
 Milwaukee
 Huron, So. Dak.
 Madison
 Madison
 Helena, Mont.
 Cleveland
 River Falls
 Madison
 Oregon
 Milwaukee
 Madison
 Peoria, Ill.
 Manawa
 Lodi
 Chicago, Ill.
 Oshkosh
 Kewaunee
 Madison
 Madison
 Madison
 Oshkosh
 Watertown
 Hartford
 Madison
 Fort Atkinson
 Milwaukee
 Madison
 Oshkosh
 Madison
 Milwaukee
 Oshkosh
 Madison
 Madison
 Richmond, Ill.
 Sioux City, Ia.
 Windsor
 Madison

Carter, Fanny Walbridge t c	Hinsdale, Ill.
Cary, Caroline Marie t c	Madison.
Challoner, Agnes t c	Oshkosh
Chao, Guok-Tsai	Shanghai, China
Chaplin, Leta Lucile t c	Plymouth
Christensen, Blanche Lina t c	Necedah
Christoffers, Harry John	London
Clark, Vinnie Bellé t c	Mayville
Cochrane, Esther Gertrude	Crete, Neb.
Coleman, Herbert Clinton t c	Lowell
Cooper, Belva Naomi t c	Madison
Corbett, Elizabeth Frances	National Home
Crawford, Fannie	Madison
Crumpton, Doris Hartman t c	Superior
Culver, Harry m	Appleton
Dahl, Lulu Edna t c	Madison
Dake, Charles Laurence	Sparta
Davies, Avrina Bernice t c	Dixon, Ill.
Davis, Helen Emma t c	Madison
Dinan, Alice Pearl t c	Fargo, N. D.
Doe, Ethelyn Anna	Elgin, Ill.
Donahoe, Zita Veronica t c	Reedsburg
Donovan, Katherine Agnes t c	Madison
Duffy, Francis Ryan l	Fond du Lac
Durbin, Margaret Jessie t c	Wauwatosa
Durbrow, Frances Wilson t c	Madison
Ellsworth, Clara Amelia t c	Barron
Elmore, Emily Warren t c	Milwaukee
Fisher, Edward James l	Madison
Fitch, Helen Marie t c	Sun Prairie
Flett, Julia Louise t c	Racine
Fowler, John Frederick t c	Winfield, Kans.
Fox, Lucy Wells, t c	Janesville
Franke, Meta Elise m	Milwaukee
Frey, Cynthia Pearl t c	Madison
Frost, Nellie Catherine t c	Almond
Fuhrman, Edith t c	Fond du Lac
Gasser, Herbert Spencer m	Platteville
Gesell, Bertha May t c	Madison
Gesell, Robert Albert m	Madison
Geyer, Denton Loring	Madison
Gillett, Orson Clarke	Superior
Godfrey, Rush Clayton m	Lancaster
Gorst, Genevieve English t c	Madison
Graves, Lola May t c	Madison
Green, William Henry	Lagonier, Ind.
Griffin, Grace Margaret t c	Madison
Griswold, Clinton Dudley	West Salem
Gross, Lyda Leah t c	Necedah
Hanchett, David Scott l	Chicago, Ill.

Harkness, Bessie t c	Durand
Hartman, Lorraine t c	Chicago, Ill.
H'Doubler, Margaret Newell t c	Madison
Heddle, John Ronald t c	Madison
Hensey, John Louis t c	Madison
Hering, Hugo Henry	Rockford, Ill.
Heuer, Josephine t c	Madison
Hewitt, Irving John t c	Madison
Hildebrand, Hazel C. t c	Rhinclander
Hill, Laura Frances t c	Baraboo
Hilpertshauser, Lillie Caroline t c	Sheboygan
Hobbs, Jane Elizabeth	Washington, Pa.
Hofer, Carolyn Harrison t c	Freeport, Ill.
Hofstetter, Grace Elisabeth t c	Lyons, Ia.
Hollister, Lisle Johnson t c	Evansville
Holman, Earle Stafford	Deerfield
Hookstadt, Carl	Madison
Hooley, Osborne Edward t c	Milwaukee
Hopkins, Mary Wright t c	Lucas, Colo.
Hoskin, Alice Albert t c	Janesville
Hoyt, Ralph Melvin l	Madison
Hughes, Edna Mae t c	Mason City, Ia.
Hunter, Helen Kathryn t c	Racine
Hurn, Ethel Alice t c	Oshkosh
Hutchison, Helen t c	Madison
Jensen, Robert John	Janesville
Johnson, Agnes Learned	Madison
Johnston, Julia Winifred	Oak Park, Ill.
Jones, Myrtle Edith t c	Madison
Jones, Sara Bennett t c	Oshkosh
Jones, Victoria Esther t c	Madison
Karges, Frank Edward	Hanover, N. D.
Kasiska, Eva Helen	Pocatello, Idaho
Kasiska, Mabel Josephine mu	Pocatello, Idaho
Kennedy, Gertrude Claire	Highland
Kerr, Samuel, Jr.	Oak Park, Ill.
Kieckhefer, Meta Catherine t c	Milwaukee
Kindschi, Alta Ester t c	Prairie Du Sac
Knapp, Myra Ellenetta t c	Bloomington
Konrad, Frank Charles William m	Oshkosh
Leach, Ada Viola t c	Hartford
Le Grand, Alexander John t c	Milwaukee.
Lentzner, Florence t c	Milwaukee
Lewis, Martha Ellen t c	Madison
Lins, Christina Catherine t c	Spring Green
Luhman, George l	Belvidere, Ill.
Lukes, Gertrude Louise t c	Sioux City, Ia.
Lyle, Margaret Blanche t c	Madison
McComb, Villa Erna t c	Brillion
MacDonald, Philip Walter	Peshtigo

McKee, Mary Rose t c
 McRae, Florence Edna t c
 Marsh, Martina M. t c
 Mathie, Edward Joseph
 Matson, Selma Victoria t c
 Meier, Amy Katherine t c
 Meloche, Clifford Cyrille t c
 Meuer, William Joseph l
 Mighell, Helen t c
 Miller, Paul Gerard
 Miller, Walter Baker
 Minsart, Anton
 Morgan, Frank Theodore
 Morris, Paul Joseph
 Morrison, Ralph Newton
 Mowry, Vivian t c
 Mueller, George John t c
 Mueller, Hermann C. P. t c
 Munson, Hope Downs t c
 Murley, Eva Iola t c
 Murphy, Pauline t c
 Nadeau, Oscar Eugene m
 Naffz, Carl Francis l
 Nash, Carolyn Loraine t c
 Needham, Maurice Hubert
 Newman, John Robert m, t c
 Northrop, Harry Clifford
 O'Laughlin, Helen Frances t c
 Olsen, Kenneth Gerhard t c
 Owyang, Yet C.
 Padley, Pearl Carolyn t c
 Parr, Thad Cassius t c
 Peltier, George Leo t c
 Perlman, Selg
 Petersen, Marius Smith m
 Pfeifer, Janet t c
 Pomeroy, Mabel Frances t c
 Prescott, Kathryn Elizabeth t c
 Priest, Gladys Eva t c
 Quale, Susanna Josephine t c
 Quinn, Lewis James l
 Ranson, Helen Mae t c
 Reardon, Una Lee t c
 Reid, Mary Elizabeth t c
 Reinking, Erna Caroline t c
 Remsburg, Lillian Araminta t c
 Rettig, Edith Louise t c
 Richardson, Maurice Leonard m
 Richardson, Pearl
 Rieder, Rudolf Theodore

Madison
 Rhinelander
 Marshfield
 Stevens Point
 Madison
 Postville, Ia.
 Madison
 Madison
 Lake City, Ia.
 Oshkosh
 Madison
 Green Bay
 Oakfield
 Madison
 Madison
 Milwaukee
 Middleton
 Milwaukee
 Viroqua
 Belmont
 Evanston, Ill.
 Marinette
 Madison
 Ripon
 Hinsdale, Ill.
 Madison
 Milwaukee
 Racine
 Stoughton
 Canton, China
 Sauk City
 Madison
 Grand Rapids
 Bialystock, Russia
 Milwaukee
 Sheboygan Falls
 Oconomowoc
 Sheboygan
 Madison
 Madison
 Watertford
 Batavia, O.
 Rhinelander
 Oconomowoc
 Madison
 Rockford, Ill.
 Monticello, Ia.
 Turtle Lake
 Rockford, Ill.
 Milwaukee

Roach, Florence t c
 Roehm, Florence C.
 Rohn, Cora Josephine t c
 Roloff, Edna Arlisle
 Ruby, Taylor Eutropius
 Ruedebusch, Frances t c
 Ruedebusch, Gretchen t c
 St. Sure, Violet t c
 Saemann, Jesse Charles t c
 Samuels, Alexander Felix t c
 Sanborn, George Allen
 Schindler, Jessie Gertrude t c
 Schmidt, Alfred Charles
 Schneider, Cora Virginia t c
 Schnuchel, Francis Albert t c
 Schoenmann, Mathilde Christine t c
 Schreier, Konrad Foeste
 Schuler, Margaret Mary t c
 Seaver, Beatrice Eugenia
 Sellery, Gertrude t c
 Shannon, Frank John l, t c
 Shatto, Edith May
 Shatto, Ethel Reba t c
 Shattuck, Frances Ermine
 Shelton, Margaret t c
 Shenkenberg, Irene Etta t c
 Shepard, Anna t c
 Sherwood, Clara Marie t c
 Shiels, Lena May t c
 Smith, Beulah Evelyn t c
 Sperle, Diana Henryetta t c
 Spitler, Woodhull Irwin
 Sprecher, Alice Adelle t c
 Stephens, Elinor t c
 Stetler, Pearlle Mae m
 Straight, Hazel Azabah t c
 Strong, Marjorie Gundry
 Swenson, Ada Elizabeth t c
 Swenson, Thorborg t c
 Swett, Maud
 Taylor, Clara Isabell
 Taylor, Ethel Rose t c
 Taylor, Mary Katherine t c
 Tearnan, Clyde Hadrian m
 Tearnan, Raymond Arthur m
 Terry, Clara Jeannette mu, t c
 Terry, Jessie Clare t c
 Thompson, James Stacy
 Thompson, Lucy Bell t c
 Thrasher, Sarah Ellen mu, t c

Fennimore
 Madison
 West Bend
 Madison
 Madison
 Mayville
 Mayville
 Madison
 Adell
 West Salem
 Fox Lake
 Madison
 Milwaukee
 Milwaukee
 Kenosha
 Spring Green
 Sheboygan
 Milwaukee
 Lake Mills
 Madison
 Oconomowoc
 Madison
 Trustin, Cal.
 Medford
 Rhineland
 Waterford
 Mason City, Ia.
 Necedah
 Malison
 Ashland
 McFarland
 Rensselaer, Ind.
 Madison
 Chicago, Ill.
 Richland Center
 Madison
 Dodgeville
 Madison
 Rockford, Ill.
 Milwaukee
 Taylorville, Ill.
 Sioux City, Ia.
 Madison
 Marshfield
 Marshfield
 Madison
 Baraboo
 Ligonier, Ind.
 Mitchell, S. D.
 Kewancee, Ill.

Tiffany, Earle Edwin	<i>La Crosse</i>
Tolg, Clarence Charles	<i>Waukesha</i>
Tormey, Mary Regina	<i>Madison</i>
True, Katharine t c	<i>Baraboo</i>
Tsai, Chu-tung	<i>Shanghai, China</i>
Two, Florence Stella	<i>Madison</i>
Underwood, Alice Browne t c	<i>Glencoe, Ill.</i>
Van Vleck, Winifred Anna t c	<i>Evansville</i>
Walbridge, Ethel Lavonne t c	<i>Madison</i>
Waters, Margaret Julia t c	<i>Jackson, Neb.</i>
Watke, Richard Puls m	<i>Fond du Lac</i>
Watson, George Locke t c	<i>Fond du Lac</i>
Weed, Leslie Bryant t c	<i>Milwaukee</i>
Wells, Florence Adele t c	<i>Wauwatosa</i>
Welsh, Lucy t c	<i>Milwaukee</i>
Whisman, Harlan Merritt	<i>Huron, S. D.</i>
Williams, Anna Frances t c	<i>Madison</i>
Williams, Frank Ernest	<i>Madison</i>
Wittwer, Herman Louis	<i>Monticello</i>
Wohlenberg, Erma Louise t c	<i>Holstein, Ia.</i>
Wolf, George Paul	<i>Random Lake</i>
Wood, Grace La Vergne t c	<i>Brandon</i>
Woodard, Mary Ruth t c	<i>Clinton</i>
Worthington, George Edmund l, mu	<i>Madison</i>
Wright, Mary Louise t c	<i>Madison</i>
Zillmer, Raymond Theodore l	<i>Milwaukee</i>
Zimmerman, Lillian Grace t c	<i>Milwaukee</i>
Zimmermann, Herbert Frederick	<i>Milwaukee</i>
Zuehlke, Walter Webster t c	<i>Hortonville</i>

Course in Commerce

Bickel, Harold Le Roy	<i>Racine</i>
Bulfin, George Thomas	<i>Milwaukee</i>
Coleman, James Ricketson	<i>Milwaukee</i>
Coward, Stanley Chandler	<i>Oregon</i>
Curtis, John Huss	<i>Madison</i>
Davey, Cyril Earl	<i>Dodgeville</i>
Eberle, George Jacquin	<i>Sheboygan</i>
Egan, John Fabian	<i>Ashland</i>
Freeman, Courtney Dodge mu	<i>Hinsdale, Ill.</i>
Fuley, Harry Martin	<i>Hayward</i>
Gantz, Marvin Everett	<i>Eau Claire</i>
Hardy, Almeron James	<i>Waukesha</i>
Henke, Edward Frank	<i>Lowell</i>
Jacobs, Herbert Edward l	<i>Sawyer</i>
Jamieson, Hugh Clancy	<i>Poynette</i>
Jencks, Moses Amos	<i>Lodi</i>
John, Henry Walter	<i>Madison</i>
King, Amos Jefferson t c	<i>Hudson</i>
Lamb, Loyd	<i>La Crosse</i>

Langmas, Arthur Samuel
 Lloyd, Sumner Hurst
 Logan, Harold Edwin
 Mills, George Harold
 Nash, Charles Mott
 Pratt, Henry Kollock
 Prinz, Alfred
 Quirk, Earl William
 Simpson, Jefferson Allan
 Springer, Benjamin Franklin
 Stafford, Harold Stanley I
 Treleven, John Edward
 Weber, Earl Sydney
 Weld, Frederick Joseph
 Wilce, John Woodworth t c

Sheboygan
 Madison
 Lake Geneva
 Lodi
 Grand Rapids
 Plainfield
 Milwaukee
 Minneapolis, Minn.
 Shullsburg
 Milwaukee
 Eau Claire
 Omro
 Lyndon
 Madison
 Milwaukee

—35

Course for Normal School Graduates

Adams, Robert Warren t c
 Baker, Alice t c
 Blanchard, William Oscar t c
 Bodden, Amanda Marie
 Brown, Elmer C.
 Bump, Ruth Adaline t c
 Culver, Harold Eugene
 Eller, William Henri t c
 Ellinwood, Alice Julia t c
 Farrington, Hazel Elizabeth t c
 Farrington, Myrtle Anna t c
 Foley, Marcella t c
 Fuller, William David t c
 Gray, Roseanna t c
 Gray, William Alexander t c
 Grindell, Donald David t c
 Hanrahan, Alice Katherine t c
 Kleckner, Bertha Diana, t c
 Kreutz, Emma Lydia
 Lescano, Alejandro Segundo
 McClatchie, Lela Annette
 Morey, Nellie Dexter t c
 Mussehl, Frederick Otto mu, t c
 Olson, Frank Lewis t c
 Phillips, Laura J. t c
 Ripley, Barbara Ruby t c
 Shillander, Arthur Alexis t c
 Swartz, David Lester
 Thiel, Richard Benjamin
 Weinandy, Oliver Roman
 Wodsedalek, Jerry Edward t c
 Wright, Katharine Desire t c

Cambria
 Boardman
 Oshkosh
 Oshkosh
 Manawa
 Albany
 Stevens Point
 Alma
 Reedsburg
 Wyocena
 Wyocena
 Juneau
 Minocqua
 Oakfield
 Benton
 Platteville
 DeKalb, Ill.
 Red Oak, Ill.
 Darlington
 Cajabamba, Peru
 Augusta
 Edgerton
 Jefferson
 Union Grove
 Whitewater
 Oakfield
 Madison
 Waukesha
 Madison
 Cochrane
 Kewaunee
 Marquette, Mich.

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Course in Chemistry

Budd, Alfred Nelson	<i>Milwaukee</i>
Bugbee, Abel Ralph	<i>Wausau</i>
Fuller, Anna Caroline	<i>Madison</i>
Hofmann, Lothar	<i>Madison</i>
Luethge, George Caspar	<i>Oshkosh</i>
Neumann, John Xavier	<i>New Ulm, Minn.</i>
Noe, Paul William	<i>Milwaukee</i>
Roehling, Herman	<i>Milwaukee</i>
Schuette, Henry August	<i>Green Bay</i>

—9

JUNIORS

Abendroth, Harry Gustav Albert	<i>Milwaukee</i>
Albers, Laurinda Anna t c	<i>Antigo</i>
Allaben, Gerald Randolph m	<i>Rockford, Ill.</i>
Allen, Herman Joseph	<i>Belleville</i>
Allyn, Josephine t c	<i>Madison</i>
Andressohn, John Carl t c	<i>Milwaukee</i>
Annis, Mildred Mary	<i>Oshkosh</i>
Ayer, Mary Lucile t c	<i>Verona</i>
Babcock, Hazel mu, t c	<i>Kasota, Minn.</i>
Baenen, Harriet Carolyn t c	<i>Green Bay</i>
Bahr, Mable Lorraine t c	<i>Milwaukee</i>
Barber, Samuel Lyman	<i>Springfield, Ky.</i>
Bartenbach, Marie Christiana t c	<i>Ablemans</i>
Bass, Everetta Ethel t c	<i>Montello</i>
Batchelor, Roger Putnam	<i>Milwaukee</i>
Becker, Emma Wilhelmina t c	<i>Monroe</i>
Bedwell, Charles William t c	<i>West De Pere</i>
Bishop, Fred G.	<i>Cassville</i>
Blackburn, Paul	<i>Elgin, Ill.</i>
Blake, Elmer Bingham	<i>Milwaukee</i>
Boettge, Cornelia Louise mu, t c	<i>Berlin</i>
Borsack, Karl Kasper t c	<i>Fond du Lac</i>
Boyd, Ward Franklin	<i>Marinette</i>
Bradley, Otto Franc	<i>Madison</i>
Bredette, Mabelle Claire mu, t c	<i>Sinsinawa</i>
Brereton, Gilbert Elliott m	<i>Madison</i>
Brown, Bernice Stockton	<i>Delair, N. J.</i>
Brown, Timothy	<i>Madison</i>
Brunow, Walter Theodore	<i>Milwaukee</i>
Buckley, Glenna Catherine t c	<i>Beloit</i>
Burnson, Anga Marie t c	<i>De Forest</i>
Buth, Otto Edward t c	<i>Hartford</i>
Butt, William Edward	<i>Woodburn, Ind.</i>
Carter, Fred Gay t c	<i>Madison</i>
Case, Lucy Ada t c	<i>West Allis</i>
Cashin, Bernadette Mercedes	<i>Peoria, Ill.</i>

Chappell, Ruby Belle
 Chase, Jewell Sperry
 Childs, John Lawrence
 Clausen, Caroline Louise t c
 Clemens, Albert Harrison
 Coddington, Charles Spencer
 Coe, Laurence Smith
 Collentine, Margaret Loretta t c
 Comstock, Florence
 Connor, Helen Melissa
 Conover, Mary Storer t c
 Conron, Thomas William
 Conyne, Norma mu
 Coon, Frances Catherine t c
 Crawford, Harold Nowell
 Crawford, Willard Goldsworthy
 Curtis, Margaret Morginia
 Dahl, Marion, t c
 Dahle, Agnes Helene t c
 Damon, Marie Warren t c
 Davis, Elizabeth Mary t c
 Dayton, Beatrice Marian
 Dean, James Philip m
 De Boos, Esther Ethel t c
 Degeler, Alida t c
 Deming, Marian Hazel
 Denslow, Raymond Albert
 Dexter, Bessie Hoard
 Didier, Estelle Madaline t c
 Doe, Arthur Brittan
 Dorney, John Alexander
 Draves, Henry Charles
 Dunwiddie, Grace Sue
 Dyke, LeGrande Grandis
 Eberle, Roger Theodore
 Ecke, Hobert Dodo m
 Edge, Merceda
 Eggener, Matilda Elsie t c
 Eidmann, Herbert Walter
 Ellis, William Henry t c
 Emerson, Evelyn t c
 Erb, Eleanore Georgiana
 Erb, Esther Johanna t c
 Eschenburg, Anita May t c
 Falk, Victor Sofus m
 Farrar, Victor John
 Farrell, Bess t c
 Ferrar, Kathleen
 Ferrar, Kayutah

Eau Claire
Oshkosh
Eau Claire
Clear Lake, Ia.
Cuba City
Green Bay
Barron
Argyle
Milwaukee
Marshfield
Hinsdale, Ill.
Danville, Ill.
Warren, Ill.
Rhinclander
Milwaukee
Mineral Point
Oshkosh
Viroqua
Mt. Horeb
Milwaukee
Madison
Mason City, Ia.
Madison
Madison
Milwaukee
Hammond, Ind.
Madison
Madison
Rhinclander
Milwaukee
Stevens Point
Milwaukee
Monroe
Prairie du Chien
Watertown
Auburndale
New Diggins
Marinette
Chicago, Ill.
Freeport, Ill.
Chippewa Falls
Appleton
Appleton
Chicago, Ill.
Stoughton
Madison
Sioux City, Ia.
Madison
Madison

Fink, Hattie Josephine	Paris, Tenn.
Fitzpatrick, Genevieve Catherine	Ishpeming, Mich.
Flagler, James Wallace	Westfield, N. Y.
Flanagan, David Joseph t c	Welcome
Fleck, Belle Louise t c	Brodhead
Fligelman, Frieda	Helena, Mont.
Flint, Alfred Thomas	Madison
Fordyce, Kathryn Margaret t c	Phillips
Fox, Leonard Peter t c	Fond du Lac
Frankenburger, Dorothy	Madison
Frey, Forrest Henry m	Hartford
Frey, Noah Joseph	Madison
Froggatt, Lillian Mary t c	Middletown
Garling, Else	Mayville
Gates, James Roberts	Manchester, Ia.
Gath, Josephine Myrtle t c	Madison
Gillet, Marjorie Burnton t c	Fond du Lac
Gottschalk, Edwin Arthur	Scandinavia
Graham, Mae Lillian	Madison
Gross, Manfred Steven	Milwaukee
Gulliford, Bessie Gertrude	Oshkosh
Habermann, Margaret Oria t c	Lodi
Habegger, Margaret Barbara t c	Waterloo
Haddow, Lovina Lucile	River Falls
Hambrecht, Leonora t c	Madison
Hambrecht, Lulu Ruth t c	Madison
Hames, Anna Margaret t c	Newburg
Hammer, Fern Waugh	Madison
Hancock, Mary Bertha	Madison
Hannan, Loretto Frances t c	Milwaukee
Harding, Charles Ford, Jr.	Chicago, Ill.
Harker, Medora Emmeline t c	Dodgeville
Harper, Hester Lewis Moore t c	Madison
Hartman, Ralph Chapel m	Davis, Ill.
Hartwig, Douglas Ferdinand m	Watertown
Hartwig, Fleurette Sophie t c	Watertown
Head, Margaret Louise	Madison
Heald, Robert Pinkerton	Oak Park, Ill.
Hean, Emma Isabel	Madison
Hebberd, Nell t c	La Crosse
Hecht, Frank Abner, Jr.	Madison
Heidner, Albion Henry m	West Bend
Heilman, Lura Fellows	Evansville, Ind.
Heilman, Roman August	Madison
Hellberg, Irma Amalie t c	Milwaukee
Helmer, Grace Cronkrite t c	Clinton
Hendrickson, Olive Rosetta t c	Darlington
Hessing, Grace Angeline t c	Windsor
Hills, Margaret Lois	Marshfield
Hoebel, Elsie Anna t c	Madison

Hoff, Olga Elleda mu
 Hoffman, Hazel Lotta t c
 Hohler, Gertrude Mary t c
 Holcombe, Florence Ethel t c
 Holley, Malynda Curtice t c
 Holmes, Marion Helen
 Hood, Helen Amanda t c
 Hopkins, Ada
 Hopperstad, Everett Julius
 Housel, Miriam Edna mu
 Houser, Hazel t c
 Hover, William Tracy
 Hurn, Herbert Dutton
 Hyde, William George m
 Jacobs, Hester Antoinette t c
 Jaedecke, Lillian Augusta t c
 James, Ada Frances t c
 James, Mary Elizabeth t c
 Johannes, Wilhelmine Henrietta t c
 Johnson, Aline Victoria
 Johnson, Edna Grace t c
 Johnson, Horace Grandin
 Johnson, Justin LeRoy t c
 Johnson, Katherine Diantha t c
 Johnson, Laurie Child mu, t c
 Johnson, Lloyd William m
 Jones, Quincy Journey
 Kamantigue, Jacinto Manila
 Keats, Marion Caro t c
 Kimball, William Langdon
 Kirch, Iza Barbara
 Kitchell, Gertrude t c
 Kleinschmit, Henry William m
 Kono, Rokuro Goto
 Korn, Bernhard Charles t c
 Kuehnast, Ella Louise
 Landeck, Else Frieda t c
 Lanning, Golden Evelyn t c
 Larsen, Milton William
 Lea, Maud Luella t c
 Lehmann, Sarah Katherine t c
 Lewis, Caroline Margaret t c
 Lewis, Harmon
 Longfield, Sara Regina
 Lord, Frances Marie
 Lorenz, Jennie mu, t c
 Lotz, Alice Muir t c
 MacAdam, Ada Ormsby t c
 McAdow, Ida Belle t c
 McCarthy, Vere Lorraine

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 Syracuse, N. Y.
 Wausau
 Stoughton
 Hudson
 Augusta
 Freeport, Ill.
 Imus, Cavite, P. I.
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 Plano, Ill.
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 Prairie du Sac
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McClure, Martha Swingley t c
 McComb, Arlie Mae t c
 McConville, Marguerite t c
 McDermaid, Delyle Howard t c
 McDonald, James John
 McDougall, Charlotte t c
 McGee, Brutus Andrew
 McGregor, Della
 McKee, Oliver Phillip t c
 McKey, Douglas Francis
 McKinney, Perry Osgood
 McMahan, Frank Bartholomew m
 McNair, Vera
 Mahon, Katherine Margaret
 Mandeville, Mabelle
 Manley, Irene Conway mu, t c
 Mann, Karl Mowry
 Martin, Marie Mathilda t c
 Martin, Marion Eliza t c
 Martin, Mary Anne
 Martin, Patrick Henry t c
 Martin, Roy t c
 Maxon, Harriet t c
 Meloche, Rhea Belle t c
 Merk, Fred t c
 Merz, Elfrieda t c
 Metcalfe, Ocea May t c
 Meyers, Erwin Aaron
 Mielenz, Nora May t c
 Miller, Maude t c
 Mitchell, Ralph Kenneth m
 Monroe, Nellie Grant
 Morgan, Lucy Lovisa
 Moroney, Kathleen
 Morris, Hannah t c
 Morris, Harold Hulett
 Mosel, Ellah Margrette t c
 Murray, Mildred Mamie t c
 Nelson, Alice Jane t c
 Nelson, Casper Irving
 Nelson, Ferne Desire t c
 Newell, Elizabeth Marguerite t c
 Ninabuck, William Louis
 Noll, Oscar Jacob
 Norris, Lona Margaret t c
 Noyes, Arthur Herbert t c
 Nuzum, Frank Richard m
 Nye, Leland William
 Ochsner, Albert Henry
 Odegard, Sager Louis

Mount Morris, Ill.
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 Fargo, N. D.
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 Janesville
 Thorp
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 Merrill

Ofstie, Edda Valborg t c
 Olsen, Anna Margaret
 Paine, Effie Clarissa t c
 Paris, Margaret Irma t c
 Park, Marjorie Gertrude t c
 Partridge, Elva Edyth t c
 Patterson, Elizabeth t c
 Peacock, Leila Irene t c
 Pederson, Lillie Josephine
 Penniston, Laura Maida t c
 Perkins, Agnes Schindler
 Perkins, Louise
 Persch, Adele Marie
 Pettijohn, John J.
 Pierpont, Mabel t c
 Plank, Josephine Adelia
 Porter, Orville Brandon t c
 Potts, Jennie Elizabeth t c
 Quigley, William Joseph m
 Raymond, Alice Helena
 Rehfuess, Isidor Louis t c
 Reichert, Rose Beatrice t c
 Reinking, Lillian Antoinette t c
 Richards, Arch Eldredge
 Richardson, William Duncan
 Ridgway, Grace Gladys mu
 Roehm, Norma Rosalie t c
 Roffers, Leone t c
 Rogers, Dorothy t c
 Rogers, Martha Jane
 Rosencranz, Gertrude Amy
 Ross, Anne Henrietta Elizabeth mu, t c
 Rossberg-Leipnitz, Elizabeth t c
 Ruble, Jesse Jones t c
 Rutherford, William Lincoln
 Ryan, Teresa Marie t c
 Sagen, Carl William t c
 Sander, Marie Rachel t c
 Sanders, Mamie Amelia t c
 Sasuly, Max
 Schladweiler, Katharine t c
 Schmidt, Irma Nathalie t c
 Schmirler, Theodora Geneva t c
 Schoenleber, Gretchen t c
 Schram, Helen Margaret t c
 Schroeder, Charlotte Anita
 Schuh, Matilda Emma t c
 Schuldt, Alma Sophia t c
 Schulze, Emma Johana, t c
 Schuster, Edith Emma t c

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West Bend
Monroe
Platteville
Portage
Madison

Schweppe, Elsa Nona t c	Medford
Scott, Almere Louise	Madison
Scribner, Gladys Carriet c	Fond du Lac
Sears, Edith Amelia t c	Madison
Segall, Julius	Madison
Seilstad, Lillie Emelie t c	La Crosse
Shapiro, Estelle Arlette t c	Medford
Sheafor, Jean Thomas	Richland Center
Shipley, George Abram	Madison
Sinnen, Anna Ida t c	Racine
Sinnen, Emily Ida t c	Racine
Skidmore, Vashti Lucy	Madison
Slater, Alma May t c	Escanaba, Mich.
Smeaton, Luella Belle t c	Milwaukee
Smith, Alice Belle	Wauwatosa
Smith, Ella Mabel	Oconto
Smith, Gladys	Wallace, Idaho
Smith, Grace Marie t c	Madison
Smith, Mabel Marion t c	Beaver Dam
Snell, Florence Wells	Madison
Soland, Johanna Grace	Blair
Sperling, Arthur August t c	Sheboygan
Spohn, William Henry	Janesville
Stark, Lewis Arthur	Sun Prairie
Starr, William	Bau Claire
Steele, Martha Maria t c	Cottage Grove
Steen, Anna Corinne t c	Madison
Stenhouse, Eva t c	Burlington
Stiles, Augusta	Grand Rapids, Mich.
Stine, Ross Orville	Bryan, O.
Stitzer, Sibylla Mae t c	Boscobel
Stone, Millie Coe t c	Reedsburg
Strassen, Irma Susie t c	Lyons
Stryker, Clara Millard	Joliet, Ill.
Swan, Ethyl Frances t c	Madison
Swenholt, Edna t c	Madison
Talbot, Charles Homer	Madison
Taylor, Henry Sterling t c	Sioux City, Ia.
Thayer, Oscar Benjamin	Delafield
Thompson, Charles Goodwin t c	Blair
Thue, Martin John, t c	De Forest
Thursby, Helen Gertrude t c	Madison
Timbers, Michael Francis	Mauston
Tindall, Floyd George m	Kirkland, Ill.
Trowbridge, Isadore Maurine t c	Hayward
Truesdell, Helen	River Falls
Tsu, Wen Shion	Soochow, China
Tucker, Elizabeth t c	Kewanee, Ill.
Tuffley, Margaret Louise t c	Boscobel
Tufts, Helen Augustine	Sioux Falls, S. D.

Tufts, Marion Deane
 Twining, Phoebe Anne
 Tyler, Dorris Lovice t c
 Tyrrell, Bessie Florila t c
 Tyrrell, Helen Christmas t c
 Van Hove, Bertha t c
 Van Vliet, Florence Leotta
 Vaughan, Fay t c
 Viles, Edith Josephine
 Vollmer, George Arthur
 Walsh, Irene Adelaide t c
 Warden, Charlotte Jane
 Weaver, Paul John m
 Weber, Edna Hertha t c
 Weberg, Oscar John
 Wehmoff, Gertrude Janet t c
 Weld, Moselle Edna
 Wells, Wayland Coleman
 Welter, Leslie Longley
 Wendels, Maria Anna t c
 Whidden, Marian
 White, Eva Parker
 Wiechers, Alma Magdaline t c
 Wild, Harry Goetseels
 Wilde, Frederick Erdman Jesse t c
 Williams, Arthur Joseph m
 Wilson, Florence May
 Winholt, Walter Fritz m
 Winslow, Emily Bradley
 Winter, Colla Marie t c
 Winter, Otto Louis
 Witte, Dexter Hathaway m
 Witwen, Edna Pearl t c
 Woerner, Lisette Katherine
 Wolf, Helen Margaret
 Worthington, Cordelia Eleanor t c
 Wright, Marie Louise t c
 Wright, Rowe t c
 Yahn, Harold George
 Zellmann, Anna Barbara
 Zellmer, Aimee Mary t c

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 Omro
 Moorhead, Minn.
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 River Falls
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 Baraboo
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 Milwaukee
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Course in Commerce

Arpin, Harold Augustus
 Ashmun, Clifford Samuel
 Batz, Rupert Joseph
 Burns, Edward Anthony
 Cleary, George Edward
 Dawson, Charles William

Grand Rapids
 Waupaca
 Sun Prairie
 La Crosse
 Platteville
 Ladgerwood, N. D.

Dohmen, Erwin Joseph
 Drewes, Peter Paul
 Glaeser, Martin Gustave
 Green, Robert Dickinson
 Hatch, Robert Littlefield
 Hauck, Fred
 Johns, Charles Lester
 Kauffman, Jacob Lorelle
 Kleinpell, Arthur Schoppenhouer
 McGrath, Charles Blair
 McMillen, Clifford Le Roy
 O'Malley, Robert Connor
 Overholser, Le Roy H.
 Racine, Frank Warden
 Reyer, Will Cleveland t c
 Rohn, Chester Ferdinand
 Ryan, Eugene John
 Schacht, Erwin Arthur
 Schuetter, Robert Louis
 Schwarting, Alvin Walter
 Schwenker, Calvin Floyd
 Sexton, Charles Richard
 Stephens, Leo Joshua
 Stolzenburg, Louis Herman
 Wilson, Edgar Carpenter
 Zipke, William Herman

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Hamburg, N. Y.
Doageville
Madison
Cassville
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Fort Atkinson
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Ottumwa, Ia.
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Monroe
Racine
Appleton
Milwaukee
La Crosse
Madison
La Grange, Ind.
Cleveland
Wausau
Fond du Lac

Course for Normal School Graduates

Boss, Sophia t c
 Conlan, Grace Mary
 Corry, Estelle t c
 Day, Abbie Louise
 Dumphy, Margaret Katherine t c
 Hargrave, Florence Villritt
 Hartwell, Julia Mary t c
 Hatz, Rose
 Infante, Luis Cirilo
 Jennings, Jennie Alice t c
 Johnson, Ruth Margaret t c
 Junkman, Glen Perry
 Kirch, Annie Bell
 Klug, Clara Marie Elizabeth t c
 Krause, Linnie
 Leader, Cora Hall
 Linson, Daisy May
 Loomis, Helen Verne t c
 McCormick, Elizabeth Rosalia
 Murphy, Mary Ellen t c
 Nimitz, Anthony Louis

Oshkosh
Milwaukee
Marinette
Minneapolis, Minn.
Livermore, Ia.
Wilton
Paupaw, Ill.
Bangor
Huaras, Peru
Warrens
Colgate, N. D.
Ellsworth
Madison
Arcadia
Ridgeland
Superior
Columbus, Ind.
Kilbourn
Superior
Superior
Grand Rapids

O'Hara, Sarah Estelle t c
 Quackenbush, Elizabeth
 Schneller, Anna Margaret
 Schoepp, Elizabeth Dora t c
 Sears, Gertrude Van Der Zee
 Shepherd, Roxie Eva Barbara mu
 Simmers, Anna Mary
 Simmers, Virgil Franklin
 Toraason, Minnie Evangeline
 Webster, Hattie Edith

Avoca
 Pittsburg, Pa.
 Prairie du Sac
 Alma
 Topeka, Kansas
 Platteville
 Madison
 English, Ia.
 Blair
 River Falls

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Course in Chemistry

Bentzen, Frederick Whelpley
 Cathcart, Charles William
 Dewey, Leon Henry
 Geidel, Carl Diedrich
 Knight, Oliver Drake
 Schranck, Henry Charles, Jr.
 Schreier, John August
 Spence, Aubrey Dayton
 Tharp, Charles Hobbs
 Wiese, Otto
 Zander, August William mu

Warrens
 Lafayette, Ind.
 Marshall
 Madison
 River Falls
 Milwaukee
 Milwaukee
 Camp Point, Ill.
 Lake Geneva
 Avoca, Ia.
 Algoma

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SOPHOMORES

Aberg, William John P.
 Adler, Sigmund
 Albaugh, Mary Edna
 Albers, Edgar Harvey
 Albers, Emily Katharine
 Albertson, Phyllis
 Allison, Albert Fay
 Andersen, Sidney Wright
 Anderson, Alice Therese
 Anderson, Alvin
 Anderson, Marion Suzanne
 Antes, Madeline Elizabeth
 Anthony, Marie Alexia
 Arnsdorf, Henry Gustave
 Atkinson, Ruth Voorhees
 Austin, Edwin Charles
 Bagley, Lorna Doone mu
 Ballard, Roger Kingsley
 Barber, Jessie Olive
 Barkhausen, Amanda Rose
 Barkley, William Grover Cleveland
 Barrett, Grace Mary
 Barrett, Maude Truscott
 Barrett, Stephen Austin

Shell Lake
 Madison
 Kingman, Kans.
 Thiensville
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 West Newbury, Mass.
 Sioux Falls, S. D.
 Whitewater
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 Chicago, Ill.
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 Indianapolis, Ind.
 Rockford, Ill.
 Green Bay
 Madison
 Wauwatosa
 Galena, Ill.
 Chippewa Falls

Barrows, Paul Mather
 Bartmann, Selma Henrietta
 Baskerville, Grace Dilla
 Batz, Margaret Carmen
 Baumgartner, Marie Elizabeth
 Bechtel, Anita Elise
 Bedford, Edgar William
 Benson, Ida Bertina
 Bettinger, Beulah Elizabeth
 Bilkey, Henry Edward
 Birchard, Ruth
 Blanchard, Pearl Ethel
 Blee, Gladys E.
 Blood, Laura Lillian
 Blust, Harry John
 Blythe, Stuart Oakes
 Boott, Ella Haden
 Borgen, Mabel Pearl
 Bowen, Robert Linde
 Bradshaw, Ethel Belle
 Breen, Helen Marie
 Brennan, Ann Ursula
 Brereton, Ruth Virginia mu
 Brooke, Edith Mary
 Brown, Fannie Arnetta
 Brown, Helen Mariette
 Brown, Mary Abigail
 Browne, Neil Allan
 Brunner, Mary Regina
 Buchen, Walther Albert
 Buhlig, Alma Emma
 Bunta, Emil
 Burke, Elsie Margaret
 Burke, Leroy Thomas
 Burke, Nelle Ellen
 Bussell, Nellie
 Carson, Mildred Harriett
 Carter, Doris Eleanor mu
 Cavanaugh, Leo David
 Chang, Yu Lin
 Chave, Ella Bean
 Clark, Hazel Blanche
 Cleveland, Clarence Rugg
 Cody, Irene Marsh
 Coldwell, Valeria Geneva
 Collignon, Constant Moreaux
 Collins, Edmund Richard
 Commons, John Alvin
 Cook, Lillian Elizabeth
 Cooper, Harold

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 Lancaster
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 Dodgeville
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 Colby
 Sandwich, Ill.
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 Sheboygan Falls
 Washington, D. C.
 Milton Junction
 Rice Lake
 Oshkosh
 Rockford, Ill.
 E. Cedar Rapids, Ia.
 Fort Dodge, Ia.
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 Chippewa Falls
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 Sinsinawa
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 Grand Rapids, Mich.
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 Hartford
 Foochow, China
 Tomahawk
 Kansas City, Mo.
 Rockford, Ill.
 Sturgeon Bay
 Blue Mounds
 Sturgeon Bay
 Racine
 Madison
 Park Falls
 Milwaukee

Cotten, Ruth
 Coyle, Ruth
 Crane, Winifred Lucy
 Crowell, Ruth
 Cunningham, George Roger
 Dahl, Alice Idell
 Daley, Frank Aloysius
 Davis, Agnes Hopkins
 Davis, Irwin Grant
 Deming, Edith May
 Deming, Wayne Edgar
 Demmer, Edward U.
 Dillman, Elsie Emma
 Dino, Nicholas, Jr.
 Dostal, Bernard Francis
 Dresbach, Glenn Ward
 Dunn, Lulu Irene
 Ebert, Royal Benjamin
 Eckart, George Harold
 Eckstein, John William
 Edwards, Henry Patrick
 Edwards, Merwin Guy
 Ellsworth, Sarah Frances
 Ely, Mary Chisholm mu
 Emery, Hazel
 English, Norman Allan
 Evans, Emma Adelaide
 Evans, Russell Argyle
 Evans, Sara Ellen
 Ewing, Donald Knox
 Farnham, Willard Edward
 Farnum, Clement Bernette
 Farquhar, Alice Milne
 Faville, Florence Mary
 Feldschneider, Erwin William
 Fenn, Clarence Charles
 Finner, Fred Frank
 Fleming, Anna Rhea
 Flower, Dorothy
 Floyd, John George
 Foerster, Henry Robert
 Ford, Mary Estelle
 Ford, Stella Endora
 Foster, Fayette Laverne
 Foulkes, Marie Nuzum
 Foxwell, Daniel Donato
 Frawley, Honora Margaret
 Friedmann, Max Edward
 Froelich, Arno August Carl
 Fuller, Frank Randall, Jr.

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Denver, Colo.
Kalispell, Mont.
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Janesville
Madison
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Vandling, Pa.
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Chicago Heights, Ill.
Madison
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Milwaukee
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Fall River
Oregon
Racine
Eau Claire
Milwaukee
Sheboygan
Madison

Gehl, Edward John
 Geisler, Henry LeRoy
 Geisse, Ruby Antoinette
 George, Emily Cornelia
 George, Leo Byron
 George, Mable Hamilton
 Gillen, Edna Florian
 Gillen, Verna Elizabeth
 Gilman, Helen Clare
 Graff, Einar Hagemann
 Graham, Mabel Blanche
 Gratiot, Mary Anne
 Gratz, Mable Maud
 Grimes, Ida V.
 Grimm, Dacotah Belle
 Groom, Samuel Burton
 Gross, Selma
 Habermann, Beatrice Estella
 Habermann, Eugenia Blanche
 Halbert, Blanche Lodema
 Hall, Raymond Gilbert
 Halls, Jay Clarence
 Hanan, Florence Louise
 Hanson, Otto Ludwig
 Harris, Katheryn Genevieve
 Harrop, George Argale, Jr.
 Hartley, Marion Belle
 Hathaway, Warner
 Hayden, Gladys Langton
 Hayes, Frank Dennis
 Headland, Oscar Bernhardt
 Heilman, Raymond Julius
 Heitkamp, George William
 Henderson, Georgiana Dorothy
 Hibbard, Ralph Rollins
 Hill, Charles Laurence
 Hill, Edna Marion
 Hinn, Anna Marie
 Ho, Kim-Tong
 Hoesly, Frieda Agatha
 Hoffman, Bernard Parsons
 Hoffmann, Carl Richard
 Hogan, Dana Jay
 Holm, Mahala Rosecrans
 Hook, Maude Persis
 Hooper, Lorna
 Horner, Chester William
 Hoverson, Ethel Madeline
 Howard, Edna
 Hoyer, Theodore Robert

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 Lodi
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 Augusta
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 Oregon
 Holmes
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 South Bend, Ind.
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 Dubuque, Ia.
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 Cuba
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 El Paso, Ill.
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Hubbard, Joseph Bradley	Madison
Hubbell, Affa	Madison
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Hull, Phoebe Gertrude	Baraboo
Hunt, Myrtle Mae	Madison
Hyatt, Chauncey Adelbert	Sheboygan
Ingalls, John Stewart	Menomonie
Irvine, Perry Dalber	Lidgerwood, N. D.
Jackman, Margaret Jane	Madison
Jacques, William Henry	Neillsville
Jenner, George Herbert Austin	Madison
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Johnson, Edward Ellsworth	Waupaca
Johnson, Laura Butler mu	Madison
Johnson, Palmer Oliver	Lakefield, Minn.
Johnson, Russell Martin	Stoughton
Jones, Flint H.	Fond du Lac
Jones, Margery Vining	Delafield
Jones, Merritt La Count	Wausau
Josten, Harriett Margaret Hazel	La Crosse
Jungkunz, Ilma De Murska mu	Freeport, Ill.
Kelly, Paul Frederick	Clinton, Ia.
Kennedy, James Peter	Sheboygan
Kieselbach, Clara Otillie	Mendota, Ill.
Kincaid, Jennie Dean	Mattoon, Ill.
Kirch, Henrietta Ann	Des Moines, Ia.
Kitchell, Bertha	Topeka, Kans.
Kleinpell, Lulu Carolyn	Elkador, Ia.
Klieforth, Alfred William	Mayville
Kneeland, Dwelle Martin	Northwood, Ia.
Knox, Flora Roberts	Milwaukee
Knudson, Jeanette Louise	Madison
Knudtson, Clarence Andrew	Blair
Koch, Oswald Theodore	Osceola
Koehler, Lucy Josephine	Menomonee Falls
Kolinsky, Pete Charles	Racine
Kragh, Stella Marguerite	Madison
Kremer, Eugene Edward	Fond du Lac
Kunz, Fritz	Madison
Lake, Earl Garon	Madison
Lake, Gustav Adolf	Kensington, Minn.
Lane, Kan-Toh	Canton, China
Lau, Lloyd William	Madison
Lawton, Sophia Louise	River Forest, Ill.
Leach, Olive Marion	Sioux Falls, S. D.
Leeden, Hebe mu	Kewaunee, Ill.
Lent, Rudolf Ernest	Washington, D. C.
Levitan, Abe Mortimer mu	Madison
Levitan, Esther mu	Madison

Lewis, John Parish
 Lindas, Ida Caroline mu
 Ling, Pyan
 Little, William Douglas
 Loeffler, Oscar Frederick
 Lorenz, Hollis Blood
 Lorenz, LeRoy Blood
 Lucas, Lillian Bertha
 Lucius, Blanche Agnes
 Lucius, Grace Emily
 Leuckenbach, Edward Jacob
 Luscher, Julia Gordon mu
 McEldowney, Edna
 McLaughlin, Mabel Catherine
 Mabis, Marie Katherine
 Mailer, Katherine Margaret
 Malone, Edward Heber
 Marks, Marie Anna
 Martin, Harriet Genevieve
 Mauer, Florence Elizabeth
 Maw, Margaret Ellen
 Mayer, George Frederic
 Meissner, Harry Victor
 Mercer, Joseph David
 Miller, Boynton King
 Miller, Nina Barnes
 Minch, Frances Eva
 Minister, Charlotte Mae
 Mitchell, Morris Bockee
 Moerke, Rosalind Emilie
 Moore, Edith
 Moore, Edith Weiser
 Morley, Laura Hazel
 Morrell, Gladys Leone
 Mott, Anna Signa
 Mowre, Edna Luella mu
 Mueller, Corinne Charlotte
 Munger, George Howard
 Murphy, Clarence Francis
 Murray, Frances Josephine
 Nash, Leo
 Neitzel, Anna Louise
 Nelson, Leonard
 Neprud, Carl Alvin
 Newman, Harriet Marie
 Nickerson, Lona Belle
 Nickerson, Pearl Irene
 Niss, Clarence Charles
 Nye, Clark Chesebro
 Ohm, Howard Frederick Edward

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 Shanghai, China
 Geneva, Ill.
 Milwaukee
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 Milwaukee
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 Chicago, Ill.
 Chicago, Ill.
 Marshfield
 Oshkosh
 Chicago Heights, Ill.
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 Des Moines, Ia.
 De Pere
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 Aurora, Ill.
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 So. Milwaukee

Oldham, Leslie Latham
 Olsen, Thomas John
 Onsrud, Minnie Christine
 Packard, Edna
 Parent, Mary
 Parke, Newton Clyde
 Parker, Reed Lynne
 Parmentier, Jules Merrill
 Pellette, Arthur Jay
 Perry, Clara Harmon
 Perry, Elizabeth Dorothy
 Peterson, Hazel Victoria mu
 Peterson, Reuben Carlton
 Phelps, Harold Frederick
 Pickering, Harold Gregg
 Pierce, Maurice Campbell
 Pierson, Merle
 Piper, Raymond Frank
 Pope, Minnie Henrietta
 Porter, Anna
 Porter, Phillip Howe
 Potts, Marian Edith
 Powell, Charles Healy
 Pratt, Verona Fae
 Pritchard, Richard Guy
 Pullen, Jones Spencer
 Quinn, Audrey
 Ragan, Mary Elizabeth
 Ramsdell, Bailey Edwin
 Rau, Erwin Frank
 Raymond, Mary Mercer
 Reed, Nathan William
 Reid, Althea Patton
 Reilly, Marguerite Elizabeth
 Richards, Robert Baker
 Richardson, Emma Hauks
 Richmond, Ada Maud
 Richmond, Adam
 Rietz, Walter Herman
 Ringling, Alice Josephine
 Rissmann, Henriette Louise
 Roberts, Hazel Isabelle
 Robinson, Katherine Young mu
 Robinson, Miriam Josephine mu
 Rowley, Alden Bruce
 Runzler, Arthur Charles
 Ryder, Katherine Estelle
 Scherneck, Eleanor Frances
 Schneider, William John
 Sell, Lucile Iva

Madison
 Herscher, Ill.
 Stoughton
 Basco
 Madison
 Troy, O.
 South Bend, Ind.
 Green Bay
 Hartland
 Milwaukee
 Davenport, Ia.
 Rice Lake
 Neenah
 Minot, N. D.
 Superior
 Madison
 Milwaukee
 Madison
 Madison
 East Troy
 Madison
 Appleton
 Milwaukee
 Oak Park, Ill.
 Drake, N. D.
 Evansville
 Lake Geneva
 Napoleon, O.
 Wausau
 Baraboo
 Aurora, Ill.
 Rosendale
 Lucerne, Minn.
 Watertown
 Racine
 Janesville
 La Crosse
 Council Bluffs, Ia.
 Manitowoc
 Madison
 Bartlesville, Okla.
 Milwaukee
 Oconomowoc
 Madison
 Huron, S. D.
 Milwaukee
 Dubuque, Ia.
 Sun Prairie
 Horicon
 Reeseville

Sexton, Marie Jeannette
 Shapiro, Lily
 Shea, Catherine Mary
 Shea, Edmund Burke
 Shoop, Bonnie Louise
 Simpson, Harold Goodsir
 Simpson, Olive Mary
 Sizer, Randolph Spelman
 Skinner, Margaret Miron
 Smith, Callie Sutherland
 Snyder, Clarendon Sweet
 Soutar, Richard Gray
 Stahl, Lena
 Stanley, Elton Wood
 Stapp, Gail Miers
 Stark, Ada Lena
 Starks, Irene Valanche mu
 Steinberg, William Harrison
 Stevens, Elbert Crandall
 Stevens, Mabelle Erma
 Stoddard, Alfred L.
 Story, Harold Willis
 Strike, Margaret Hazel
 Sullivan, William Kirk
 Sutherland, Gladys
 Swerig, Mabel Beatrice
 Swetting, Florence
 Swift, Winifred Jessie
 Taylor, Archibald Roger
 Taylor, William Amory
 Thompson, David Reginald mu
 Thomson, Harold Page
 Todd, Louise Frances
 Todd, Ralph Lallaway
 Tomhagen, Edith Sommer
 Toole, Eben Henry
 Torstenson, Selma Gunilda
 Townsend, De Wayne
 Trautman, Bertha
 Traver, Chalmer Boorman
 Trowbridge, Lucy Marcia
 Tschudy, Marianne Helene
 Turner, Dorothy Kinsley
 Vaas, Marie Herfurth
 VanBlarcom, Maude Estelle
 Vitz, Frank Edward
 Waite, Jay Davies
 Wakefield, Lois
 Wallis, Eva Elizabeth mu
 Wambold, Grace Isabelle

Marshfield
 Medford
 Ashland
 Ashland
 Sticator, Ill.
 Minneapolis, Minn.
 Shullsburg
 Coram, Cal.
 Madison
 De Pere
 Monroe Center, Ill.
 Lake Geneva
 Kalispell, Mont.
 Hot Springs, S. D.
 Hope, Ind.
 Hartford
 Madison
 North Freedom
 Oak Park, Ill.
 Madison
 Villisca, Ia.
 Milwaukee
 Madison
 Oak Park, Ill.
 Madison
 Madison
 Berlin
 Cleveland, O.
 Barron
 Portage
 Madison
 Cavalier, N. D.
 Dixon, Ill.
 Aurora, Ill.
 Chicago, Ill.
 Baraboo
 Milford, Ia.
 Oconomowoc
 Decatur, Ill.
 Milwaukee
 Milwaukee
 Monroe
 Madison
 Madison
 Fond du Lac
 Plymouth
 Prairie du Sac
 Milwaukee
 Milwaukee
 Milwaukee

Warwick, Charles Earl	Keokuk, Ia.
Washington, Lawrence	Chicago, Ill.
Weigen, Anders Johann	Sun Prairie
Wernicke, Carl Friederich Gustave	Grand Rapids, Mich.
Westphal, William Carl	Mayville
Whelan, Mary Elizabeth	Mondovi
Whelan, Paul	Mondovi
Whitaker, May Bell	Kenosha
Whitley, William Richard	Waterford
Wieboldt, Elmer Frederick	Chicago, Ill.
Wiedenbeck, Albert Louis	Lancaster
Weise, Walter Fred	Milwaukee
Willaman, John James	Rockford, Ill.
Williams, Jay Henlay	Poynette
Williamson, Robert Crosier	Beloit
Winslow, Edith Agnes	Madison
Wipperman, Elfrieda Hertha	Shawano
Wright, Florence Matilda	St. Cloud, Minn.
Wuesthoff, William Walter	Milwaukee

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Course in Commerce

Babler, William Emil	Monticello
Bailey, George Davis	Sioux City, Ia.
Baldwin, Lawrence Merrill	Kenosha
Bell, Rae Floyd	Madison
Bennett, George Edward	Lake Geneva
Biersach, Hugo	Milwaukee
Black, John Curtis	Shawano
Boguslawsky, Marc	Milwaukee
Bonesteel, Verne Clinton	Padus
Braasch, William Karl	Sheboygan
Bunin, Nohum Ban	Stevens Point
Butts, George Henry	Evansville
Carpenter, Floyd Goodrich	Madison
Carr, Jesse George	La Crosse
Christians, George Fredrick	Johnson Creek
Coerper, Roland Frederick	Hartford
Cottingham, Rankin Dixon	Madison
Crissey, Roy John	Janesville
Culbertson, Harold Edwin	Joliet, Ill.
Day, Le Roy Irving	Lake Geneva
Dickelman, Reinhold Julius	Horicon
Doar, Fred Larkin	Cumberland
Eason, James Roy	Milwaukee
Ekern, Paul Chester	Superior
Fraser, William	Honey Creek
Frey, Frank Armin	Milwaukee
Greenwood, Albert Ernest	Johnson Creek
Greenwood, Arthur Stanley	Lake Mills

Greiffenhagen, Paul Frederick
 Grell, Walter Henry
 Hibbard, Charles Frederick, Jr
 Hobart, Arthur Thomas
 Howard, Claude Earl
 Ingleheart, Austin Smith
 Janda, George Walter
 Johnson, Alvin Oscar
 Johnson, Carl John
 Johnson, Margaret
 Karstaedt, Earl Lewis
 Kinsman, Thomas Le Roy
 Knauf, Arthur Raymond
 Knorr, Lynn Elmer
 Kuechle, Benno Ernest
 Lake, George Burditt
 Lilly, Lewis
 Mapel, Dexter Roundy
 Martinson, Bennie
 Medberry, Chauncey Joseph
 Moore, Sidney John
 Morgan, Thomas Henry
 Moy, John Benjamin
 Neprud, Selmer
 Norsman, Edgar
 Nuzum, Ralph Edgar
 Oetking, Frank George
 Paulsen, August Herman
 Pullen, Paul Pike
 Ruedebusch, Hans Henry
 Schroeder, Walter Henry
 Skinner, Roger Allen
 Smith, Kenneth Loveland
 Smith, Lawrence Edward
 Stoppenbach, Frank Emil
 Torbet, Albert William
 Tulloch, Harry A.
 Tye, Frank Edward
 Wetherby, Lucian Porter
 Wheeler, Elisha Ford
 Williams, Milton Bryan
 Wilmanns, Arthur John
 Wood, Arthur Bowan

Chicago, Ill.
Johnson Creek
Milwaukee
Batavia, Ill.
Kenosha
Evansville, Ind.
Kewaunee
Woodville
Madison, So. Dak.
Kokomo, Ind.
Beloit
Platteville
Chilton
Granton
Sheboygan
Harvard, Ill.
La Crescent, Minn.
Milwaukee
Hayward
Fond du Lac
So. Milwaukee
Madison
Mondovi
Westby
Madison
Viroqua
Sheboygan
Chilton
Evansville
Mayville
Manitowoc
Brodhead
City of Mexico, Mexico
Fort Atkinson
Jefferson
Harbor Springs, Mich.
Victory
W. Chicago, Ill.
Minneapolis, Minn.
Plymouth
Seneca, Kans.
Milwaukee
Fonda, Ia.

Course in Chemistry

Ballance, Nevius Van Dyke
 Bentley, Wayne Harrison
 Blair, Walter Ellsworth
 Chaplin, Edgar Lea

Peoria, Ill.
Stevens Point
Winona, Minn.
Plymouth

Crosby, Harold Sutor
 Dickinson, Ray Levi
 Hollmeyer, Harry Louis
 Mirrielees, Archibald Frazer
 Nelson, Victor Emanuel
 Oates, Arthur Raymond
 Pflaum, Walter Otto
 Roehling, Otto Carl
 Rossback, Clement Astor
 Schneider, William John
 Slivinski, Albert Adolph
 Street, Bernard John
 Witherell, Archie Lee
 Wollin, Andrew Albert

Rhinclander
La Crosse
Newport, Ky.
Chicago, Ill.
Eau Claire
Darlington
Evansville
Milwaukee
Milwaukee
Horicon
Oconomowoc
Lead, S. D.
Janesville
Oconomowoc

FRESHMEN

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Abaly, Winnifred
 Adams, Ellen Harrington
 Adams, James Reva
 Allen, Mae Laurette
 Alton, Robert Leslie
 Alvord, Thomas Gale
 Anderson, Gerhard Adolph
 Anderson, Harold Gilbert
 Anderson, Jessica Banderoff
 Anderson, Joseph
 Anderson, Margaret
 Anderson, Susie May
 Arnold, Leah
 Aten, Ruth Bernice
 Atkinson, Edith Ann
 Atwood, Grace Ione
 Atwood, Nellie Pearl
 Aylward, Thomas James
 Bagley, Dan Austin
 Baldauf, Anthony Edward
 Bandelin, Meta Christine
 Bardin, Harry Melvin
 Barker, Basil Herbert
 Barker, Harold Henry
 Baxter, Albert Rodney
 Beath, Sterling Stanley
 Beck, John Linus
 Becker, Herbert William
 Beers, Fayette
 Beers, Glenn Smith
 Blanding, Virgil Lowrie
 Blowers, Leroy Eugene
 Boardman, Robert Palge
 Boas, Rosa Kathleen

Madison
Philadelphia, Pa.
Appleton
Randolph
Winnetka, Ill.
Superior
McFarland
Whitewater
Milwaukee
Hartford
Eau Claire
Madison
Sturgeon Bay
Englewood, Ill.
Paoli, Ind.
Brodhead
Brodhead
Green Bay
Pueblo, Col.
Eden
Milwaukee
Whitefish, Mont.
Chippewa Falls
Sparta
Brodhead
Verona
Jefferson
Chicago, Ill.
Sun Prairie
Stoughton
Moline, Ill.
Mason City, Ia.
Oshkosh
Sioux City, Ia.

Bonar, Jessie
 Bonino, Mary Cecelia
 Bourbeau, Elmore Alfred
 Boutin, Francis Charles
 Boutwell, Roswell Knight
 Bowman, Aleda May
 Boyle, Margaret
 Boynton, Mary Woodward
 Bradley, Charles Harlow
 *Bradley, Cora M.
 Brethouwer, George
 Brown, Adalin
 Brown, Damon Alonzo
 Brown, Harlow Blair
 Brown, Ralph Vernon
 Brown, Susan Knight
 Brundage, Phoebe Farnum
 Buech, William Frederick
 Buehler, Emil
 Buell, Pauline Merry mu
 Bundy, Harry Eugene
 Bundy, Nellie Reubena
 Butler, Eliza May
 Butz, Charles Harold
 Byrne, Margaret Jane
 Cady, Mildred Theodora
 Cantwell, Grace Servatia
 Carpenter, Carroll Frank
 Carr, Elsie Hawley
 Casey, Cyrus Ambrose
 Casey, Eunice Marion
 Chambers, Charles Carroll
 Chapman, Hazel Hortense
 Charlton, Charlotte Ruth
 Chesick, Henry Louis
 Chevallier, John Walter
 Christie, George West
 Clarke, Bruce Walrath
 Clarke, Kathryn Elizabeth
 Clausen, Florence Rosalie
 Clawater, Earl William
 Clayton, Gertrude Samantha
 Cleveland, Ewart
 Coapman, Lillian Emily
 Coleman, Marguerite Mary
 Collard, Justus Clark
 Collins, Irene Margaret
 Collins, William Morris

Streator, Ill.
 Hurley
 Brooklyn
 Bayfield
 Boston, Mass.
 Sterling, Ill.
 Butte, Mont.
 Portage
 Milwaukee
 West Salem
 Oostbury
 Madison
 Spring Green
 Kewanee, Ill.
 Arena
 Laverne, Minn.
 Somonauk, Ill.
 Milwaukee
 Alma
 Madison
 Milwaukee
 Eau Claire
 Menomonee Falls
 Mazomanie
 Madison
 Green Bay
 Madison
 Windsor
 Montesano, Wash.
 Watertown
 Madison
 Little Rock, Ark.
 Oshkosh
 Janesville
 South Milwaukee
 Clintonville
 Milwaukee
 Augusta
 Beloit
 Washburn
 Viroqua
 Monroe
 Madison
 Kilbourn
 Madison
 Red Oak, Ia.
 Madison
 Richland Center

* Died Jan. 29, 1910.

Colton, Mabel Adella
 Connor, Donald Witter
 Conyne, Marguerite
 Corley, John Scripps
 Corry, Bernadette
 Crane, Mildred Collver
 Crawford, Abiram Lee
 Crile, Dennis Rider Wood
 Croll, Eulalia Hattie
 Crowley, Jennie Gertrude
 Curschmann, Elsa Maria
 Curtis, Emory Blake
 Dahm, Everett Francis
 Dallwig, Lydia Irma
 Danielson, Hilda Josephine
 Davies, John Pugh
 Davis, Homer Allan
 Day, Cecil Egbert
 Deming, Helen
 Dexheimer, Earl Chambers
 Dexter, Willis Edmund
 Dickens, Riddell
 Dickerson, Agnes Woodworth
 Donaldson, Jessie Louise
 Donovan, Adelaide Veronica
 Dowling, Raymond Francis
 Doyle, Raphael Morgan
 Dreutzer, Genevieve
 Duncan, Robert Frederic
 Dunn, Mary Louise
 Dutton, Frederick Gary
 Eagan, Joseph Bernard
 Eberle, Margaret Olivia
 Edwards, Nina Margaret
 Ellefson, George Nicholas
 Ellman, Frances Catherine
 Ely, Dorothy Belle
 Enright, Eleanor Marie
 Esch, Paul Herbst
 Estabrook, Benjamin
 Etter, Arthur Edward
 Evans, Howell
 Fargo, Helen Marguerite
 Farley, Mary Margaret
 Fauerbach, Angelica Anne
 Fay, Carl Harding
 Ferguson, Keta Hinkley
 Finney, Nellie Edilla
 Fish, Harriette Hilton
 Fligelman, Belle

Sheboygan
 Marshfield
 Warren, Ill.
 Des Moines, Ia.
 Marinette
 Madison
 Genoa, Ill.
 Chicago, Ill.
 Manitowoc
 Madison
 Milwaukee
 Davenport, Ia.
 McGregor, Ia.
 Milwaukee
 Madison
 Racine
 La Crosse
 Duluth, Minn.
 Neillsville
 Fort Atkinson
 Dubuque, Iowa
 Milwaukee
 Helena, Mont.
 McGregor, Ia.
 Madison
 Oudahy
 Mitchell, S. D.
 Sturgeon Bay
 Eau Claire
 Black River Falls
 Green Bay
 Avoca
 Watertown
 Oshkosh
 Racine
 Madison
 Madison
 Janesville
 La Crosse
 Milwaukee
 Monroe
 Dodgeville
 Deersfield
 Madison
 Madison
 Lyons, Ia.
 Buffalo, N. Y.
 Waupun
 Milwaukee
 Helena, Mont.

Foote, Gladys Nellore
 Forrester, Clifford Charles
 Francis, Robert Raymond
 Franzen, Ella
 Freeman, Forrest Washburn
 Freund, Carl
 Frey, Robert Rogers, Jr.
 Fulton, Byron Edward
 Gale, Ada
 Gates, Neva Florence
 Gaveney, Shirleigh Marguerite
 Gay, Sidney
 Geisler, Clara Ellen
 George, Philip Willimann
 Gesell, Carl Franklin
 Gilbert, Charles Sherwood
 Gilbert, John Webster
 Gill, Gladys Grimshaw
 Gilman, Laura Leonard
 Glab, Edward Aloysius
 Glasgow, May Genevieve
 Goe, Elizabeth Rounds
 Goes, Frederic Theodore
 Gohdes, Henry Louis
 Gold, John Kedney
 Goodsmith, Howard Moulding
 Gordon, Stanley George
 Graef, Henry William
 Grant, Elizabeth Hunt
 Greenough, Francis Xavier
 Grenfell, Donald Stuart
 Groff, Eleanore Marie
 Haase, William Frederick
 Habighorst, Leona Marie
 Hadfield, William Adrian
 Haessler, Herbert Ferdinand
 Haley, Camilla Myrtle
 Hall, Fred Menzo
 Halley, Sara
 Hanchett, Russell Curchill
 Hanchette, James Harold
 Hanna, Julia Florence
 Hannahs, Fred Charles, Jr.
 Hansen, Margaret Cecelia
 Harker, Melva Delia
 Harlin, Wilbur Albert
 Harn, Hugh Val
 Harrington, Cornelius Louis
 Harwood, Benjamin
 Hauge, George Henry

Honey Creek
Waukegan, Ill.
Ackley, Ia.
St. Paul, Minn.
Chillicothe, O.
Felvidere, Ill.
Minneapolis, Minn.
Britton, S. D.
Oregon, Ill.
Fort Dodge, Ia.
Arcadia
Madison
Milwaukee
Menomonic
Tomahawk
Burlington, Ia.
Burlington, Ia.
Mauston
Madison
Dubuque, Ia.
Fond du Lac
Madison
Milwaukee
Wausau
Sevancee, Tenn.
Chicago, Ill.
La Crosse
Plymouth
Louisville, Ky.
Pierre, S. D.
Madison
Winona, Minn.
Marinette
Rice Lake
Madison
Milwaukee
Madison
Enid, Okla.
Rapid City, S. D.
Chicago, Ill.
Sioux City, Iowa
La Grange, Ill.
Kenosha
Madison
Dodgeville
South Bend, Ind.
Mason City, Ia.
Hurley
Butte, Mont.
Viroqua

Hayes, Agnes Mary
 Heddles, Beula Sloan mu
 Hemmy, Arthur Richard
 Hendrickson, Manville Fritjoff
 Herreid, Cecelia
 Hetherington, Bonnie
 Heyl, Lulu Johanna
 Hill, Earl Myron
 Hinckley, Marguerite Josetta
 Hinman, George Wheeler
 Hohm, Lola Charlotte
 Holcombe, Helen Lucile
 Holman, Evalyn Constance
 Hopkins, Mary Marguerite
 Hornaday, Walter Charles
 Howard, Beatrice Marguerite mu
 Hovery, Benjamin Franklin
 Hoyer, Harriet Elizabeth
 Hunt, Harriet Larned
 Hunt, Maud Iva
 Hurlbut, Margie Spearing
 Hyslop, Clayton James
 Ingwerson, Margaret Rebecca
 Jalandoni, Jose Ledesnia
 James, Sadie
 Janisch, Harold Peter
 Jeffery, Stella Marie
 Jennings, Rhea Mabel
 Jevne, Kadelia Gilbertson mu
 Johnson, Alice Clare
 Johnson, Helen Amanda
 Johnson, Herbert Theodore
 Johnson, John Hamilton
 Johnson, Mary Jane
 Johnson, Willard Ashton
 Jones, Harry Erwin
 Junge, Otto Peter
 Juergens, Hubert Frederick
 Kabat, Mary Wright
 Kahn, Samuel Carroll
 Kailen, Max
 Kanouse, Mary
 Keesecker, Clara
 Kehrmann, Rolla
 Kelly, Mabell Grace mu
 Kennicott, Kenneth Boyden
 Kessler, Alvin Herman
 Kieckhefer, Anna Elizabeth
 Kiewert, George Ferdinand
 Kilmer, Eva Marie

La Crosse
 Madison
 Juneau
 Portland, Oregon
 Madison
 Seattle, Wash.
 Madison
 Grand Rapids
 Abbotsford
 Winnetka, Ill.
 Sycamore, Ill.
 Milwaukee
 Deerfield
 Madison
 Austin, Tex.
 Greenwood
 Black Earth
 Madison
 Fargo, N. D.
 Madison
 Oconomowoc
 Blair
 Chicago, Ill.
 Jaro, Iloilo, P. I.
 Wales
 Waterloo
 Monroe
 Necedah
 Meridian
 Jackson, Minn.
 Brodhead
 Crown Point, Ind.
 Cedar Rapids, Ia.
 Kokomo, Ind.
 Rockford, Ill.
 West Salem
 New Holstein
 Hamburg, N. Y.
 Reedsville
 Indianapolis, Ind.
 Madison
 Madison
 Dubuque, Ia.
 Bonne Terre, Mo.
 Madison
 Luverne, Minn.
 Evansville, Ind.
 Milwaukee
 Milwaukee
 Portage

King, Esther Josephine	Waterloo
Knutsen, Martin Halvor	Ridgeway, Wis.
Koch, Vincent William	Janesville
Koehsel, Minnie Clara	Madison
Kohl, Edwin Philip	Marshfield
Kohler, Bert M.	Chicago, Ill.
Kuhnen, Arthur Nicholas	Chicago, Ill.
Kulasavicz, Norbert	Bessemer, Mich.
Lacey, William Randolph	Madison
Lacher, Gilbert Lincoln	Waukesha
LaCombe, Ina Gertrude	Green Bay
Lamb, Clara Genevieve	Madison
Lampert, Harold Milton	Madison
Lange, Gladys Wilhelmina	Eau Claire
Lapham, Olena	Lake Beulah
Lawson, Lillian Edith	Menasha
Leaming, Harriet Louise	Ravinia, Ill.
Leary, Mary Ella	Madison
Leavens, Marie Therese	Milwaukee
Leavins, Frederic William	Chippewa Falls
Lee, Olive Marion	Stoughton
Legler, Rose Magdalen	Valley Falls, Kan.
Leitch, Ann Arnold	Sun Prairie
Lemon, Kenneth	Madison
Lester, John King	Madison
Lewis, Marian	Milwaukee
Lewis, Ritchie David	Sun Prairie
Lewis, Theodore Gorman	McFarland
Lichtenberg, Harry Raymond	Alta, Ia.
Lindsey, Roy James	Ashland
Lingelbach, Hugo William	Oconto
Link, Frances Mary	Madison
Lloyd-Jones, Ralph	Hillside
Long, Vinje M.	Webster, S. D.
Loos, Lydia Emeline	Elkhart Lake
Lucke, Wylda Jay	Madison
Lund, Mildred Joyce	Madison
McCann, Vernie Lucile	La Crosse
McCordic, Almer Sheridan	Zion City, Ill.
McGill, Allan Marsten	Ladysmith
McGinnis, Ella Frances	Strathmore, Alta, Can.
McGruer, Earl	Langdon, N. D.
McKay, John Gordon	Eau Claire
McKinney, Maurice Doane	Janesville
McQuown, Norvin	Denver, Colo.
Mahoney, Bessie	Juneau
Malone, Ralph Douglas	Dell Rapids, S. D.
Massey, Mildred	Beaver Dam
Marek, Frank Benjamin	Cadotte
Margoles, Nahan	Milwaukee

Martin, Kenneth Dion
 Martin, Marguerite Emma
 Martin, Thomas Andrew
 Massey, Mildred
 Mathys, Erna Henrietta
 Matts, Mary Ventura
 Meland, Hazel Amanda
 Menne, Frank Raymond
 Menzies, Jessie
 Mereness, Elsie May
 Merrill, James Davidson
 Merryman, Frances Mildred
 Meyer, Mabel Matilda
 Meyer, Morris
 Milhaupt, Vera Amalia
 Millsbaugh, John Wheeler
 Miner, Marjorie Rose
 Minor, Stanley Nelson
 Mitchell, Ellen mu
 Mitchell, Vera
 Mittelman, Edward Becker
 Moe, Harry Bugge
 Mohr, Lloyd H.
 Morgan, Flossie Warren
 Morley, Inez Elizabeth
 Morsbach, Alonzo Albert
 Mueller, Therese Catherine
 Mullon, Barbara
 Mullon, Marjorie
 Murphy, Walter Henry
 Nash, Harry Slade
 Nelson, John Alfred
 Nelson, Kathryn Leamon
 Nevin, Richard Clarence
 Newell, Arthur
 Newman, Eleanor Adelia
 Newman, Elizabeth Laura
 Nicolls, Mary Mohr
 Niles, Sarah Isabelle
 Oakey, Edna Kathryn
 Obata, Shigeyoshi
 Olds, Minnie Malinda
 Olin, Burton Wilson
 O'Malley, Agnes Elizabeth
 Osborn, Esther Sarah
 Ostrander, George Emmet
 Parkinson, Margaret Allen
 Parmentier, Douglas Merrill
 Parsons, Isabel
 Peabody, Arthur Cochrane

Baraboo
 Madison
 Madison
 Danvers, Mass.
 Arcadia
 Verona
 De Forest
 Empire
 Janesville
 Watworth
 Sparta
 Decatur, Ind.
 Kirkland, Ill.
 Milwaukee
 New Holstein
 Milwaukee
 Madison
 Kansas City, Mo.
 Hillsboro
 Hillsboro
 Milwaukee
 McFarland
 Pierce, Nebr.
 Albany
 Madison
 Durand
 Sauk City
 Madison
 Madison
 Elkhorn
 Kingsley, Ia.
 Rockford, Ill.
 Lena, Ill.
 Racine
 Ashland, Mont.
 Milwaukee
 Madison
 Wausau
 La Porte, Ind.
 Madison
 Osaka, Japan
 Albany, Ill.
 Racine
 Madison
 Ashland
 Columbus
 Columbus
 Green Bay
 Madison
 Madison

Pearce, Jane	Dodgeville
Pease, Edna Crystal	Madison
Pease, Mary Ennever	Wauwatosa
Pence, Nellie Ada	Madison
Perky, Laura Esther	Boise, Idaho
Peterson, Arnold Richard	Hudson
Pfunderer, Helen Virginia mu	Berwyn, Ill.
Platten, Helen Irene	Green Bay
Pollock, Edith Blanche	Polo, Ill.
Pomeroy, George Grove	Gays Mills
Pond, Ethel Pooley	Madison
Post, Frances	Madison
Poston, Virgil	Bonne Terre, Mo.
Prees, Reginald Lloyd	Cambria
Pressentin, Olga Charlotte	Madison
Price, Earl Marvin	Racine
Proctor, Roy Harrison	Rochester, Ind.
Prosser, Eugene Chevalier	Minneapolis, Minn.
Proud, Sara Davidson	Madison
Purcell, Mary Ellen	Madison
Quale, Norman Milton	Madison
Quick, Edward Connell	Madison
Radtke, Leonard	Watertown
Ravn, Erling Oscar	Merrill
Raymer, Abigail Mercy mu	Chicago, Ill.
Rayne, Lucile Price	Madison
Reber, Hugh Jackson	Madison
Reed, Charles La Forest	Oshkosh
Reek, Alice Kaye	Walworth
Reid, Maude Dunlap	Oconomowoc
Reif, Eugene	Sauk City
Reis, Aldin Carl	Evansville, Ind.
Reuss, Beth Anna	Sun Prairie
Reynolds, Edward Dannie	Cottage Grove
Rhyner, Oscar	Oshkosh
Rice, Ruth Catherine	Madison
Richardson, Moses Alexander	Milwaukee
Rickert Margaret Bernadine	Milwaukee
Riley, Thomas Edward	Altoona
Riley, William J.	Darlington
Ring, Avis	Neillsville
Rintelman, Clara Augusta	Milwaukee
Robbins, George Hiram	Milwaukee
Robertson, Frank Alfred	Lodi
Robinson, Carol Taylor	Milwaukee
Root, Herman Martin	Viroqua
Rose, Milton Edward	Dubuque, Ia.
Ross, Evelyn Townsend	Madison
Roter, Charles R.	Parsons, Kan.
Ruka, Emil Albert	Boscobet

Ryan, Eunice Veronica
 Ryan, Frederick Hall
 Ryan, Mary Agnes
 Samp, Edward Joseph
 Sawyer, Frances Cecelia
 Schmidt, Erwin Rudolph
 Schneider, Edward August
 Scoles, John Calvert
 Scott, Marshall Robert
 Seeber, Helen Marie
 Seise, Kathryn Marie
 Serviss, Chester Arthur
 Seward, Leila Huntington
 Sexauer, Minnie Catherine
 Shane, Lyle Emerson
 Sheehy, Etta Johanna
 Shibuya, Dan Rikiyo
 Shoesmith, Harold James
 Siegel, Isaac
 Simonson, Stella Meranda
 Simpson, Hugh Miller
 Sivyer, Allen Walters
 Skavlem, Rebecca Janet
 Skinner, Richard Manson, Jr.
 Slade, Henrietta Sprague
 Smith, Harley Allison
 Smith, LaRue
 Smith, Vivian Muir mu
 Snow, Lottie Louise
 Sosman, Merrill Clary
 Spence, Elizabeth Lillas
 Spencer, Marian Louise
 Spiegel, Elsie Elizabeth
 Stark, Lila
 Stason, Edwin Blythe
 Stavrum, Sigvald Asbjorn
 Stearns, Eva Jewett
 Steel, Gladys Katherine
 Steensland, Lohra mu
 Stein, Clarence Paul
 Stein, Nathan Manning
 Steinmueller, Charles Hans
 Stewart, John
 Stowell, Leta Grace
 Sumner, Jessie Walthew
 Swarthout, Edyth Clare mu
 Syverson, Bion Claude
 Tack, Willis James
 Tappins, James Garold
 Taylor, Olivia Jane

Lodi
 Chicago, Ill.
 Sun Prairie
 Cecil
 Milwaukee
 Arcadia
 Dubuque, Ia.
 Granton
 Hancock
 Waterloo
 Lena, Ill.
 Blair
 Binghamton, N. Y.
 Belvidere, Ill.
 Altoona
 Green Bay
 Fukuachima, Japan
 Lena, Ill.
 La Crosse
 Fargo, N. D.
 Madison
 Milwaukee
 Stoughton
 Princeton, Ill.
 Hinsdale, Ill.
 Evansville
 Helena, Mont.
 Eagle Grove, Ia.
 Madison
 Chillicothe, Ohio
 Chicago, Ill.
 River Forest, Ill.
 Milwaukee
 Bayfield
 Sioux City, Ia.
 La Crosse
 Racine
 Dixon, Ill.
 Madison
 Milwaukee
 Milwaukee
 Milwaukee
 Aurora, Ill.
 Madison
 Madison
 La Crosse
 Westby
 Marshfield
 Madison
 Necedah

Thomson, Jay St. Claire
 Tierney, Mary Anna
 Tomlinson, Charles Weldon
 Topping, Clarence James
 Tristram, Robert Dix
 Turner, Glenn Patterson
 Twitchell, Edward Chauncey
 Uber, Walter Fred
 Uhen, Rudolph Martin
 Van Gorden, Clyde Schuyler
 Van Hise, Hilda Alice
 Van Slyke, Maie Eleanor
 Vaughn, Marjorie Olive
 Vergeront, Glen Wallace
 Vergeront, Grace Margaret
 Vinje, Arthur Theodore
 Vinje, David Ray
 Vorse, Dorothy
 Wahl, Frederick Rice
 Wahl, Natalie Rice
 Waite, Mark Oakey
 Walker, Frances Annis
 Walker, May Estella
 Walsh, Maxwell Gilbert Baring
 Warner, Ella Matilda
 Wattawa, John
 Webb, Marc Archie
 Wells, Chester Charles
 Werlich, Richard Eugene
 Werner, Allan Charles
 Wheeler, Frances Marie
 White, Frances Eva
 White, Raymond Baird
 Wilkinson, Marcus Everts
 Williams, Caryl Rockwood
 Williams, Walter Leonard
 Wipperman, Valeska Meta
 Withington, Frances Eleanor
 Woodworth, Margaret Deane
 Yabe, Masao
 Youngman, Frank Nourse
 Zahn, John Phil
 Zatoci, Edward
 Zinsmaster, Lena Grace
 Zollner, Louis Albert

Eau Claire
Evansville
North Chicago, Ill.
Madison
Norwalk, Conn.
Milwaukee
Madison
Hartford
Burlington
Hixton
Madison
Madison
Delavan
Montfort
Montfort
Nevada, Ia.
Superior
Des Moines, Ia.
Madison
Madison
Madison
Madison
Milwaukee
Oregon
Warrens
Madison
Evansville
Freeport, Ill.
Weston
La Crosse
East Bloomfield, N. Y.
Monroe
Kansas City, Mo.
Ashland
Viroqua
Iola
Shawano
Baraboo
Sioux Falls, S. D.
Chibaken, Japan
Wautoma
Fond du Lac
Mazomanie
Des Moines, Ia.
Indianapolis, Ind.

—477

Course in Commerce

Akin, Earle Davis
 Ash, Brisbane Clay
 Barney, Willis Wilder

Hillsboro
Pierre, So. Dak.
Milwaukee

Barthe, Eugene Albert
Bergh, Stephen Tolman
Bergstein, Ernest Augustus
Bliss, Hugh Porter
Brumm, Lester Frank
Buggie, Horace Hobart
Burhoe, Brainerd Desaix
Burhop, William Henry
Burrow, Herbert Theodore
Carpenter, Harry Chester
Castle, Lewis Gould
Chatterton, George Alonza
Collmann, Martin George
Condit, Ralph George
Cooley, Spencer Henning, Jr.
Copeland, Charles Edward
Daly, Percifer Charles
Davis, Henry Chandler, Jr.
Desing, Arthur Charles
Defienne, Harold David
Dietze, Carl Edgar
Dohr, James Lewis
Draves, Albert William
Drewes, Harley Frank
Easthope, Stanley Roy
Ellis, Guy Thomson
Fargo, Howard Corydon
Farley, Thomas Joseph
Farnum, Willard Cushman
Findeisen, Alvin Louis
Foster, Raymond Francis
Fox, Neill Williams
Frary, Paul Vere
Geisse, Charles Earl
Griffith, George Perry
Gronzo, Robert Fred
Hammond, Ralph Perry
Hay, Townsend
Hilts, Harry Nelson
Hoskins, Mark Hadley
Hutchinson, Earle D.
Hutson, Thomas Ralph
Hyde, Armin William
Jefferson, Earle Alvah
Johnson, Carl Emil Hobart
Jones, Donald Labann
Kirk, Stanley Butcher
Kirk, William Edward
Knauss, Otto Adolph
Kuchenmeister, Hugo

Pt. Washington
Hendrum, Minn.
Florence
Madison
Middleton
Cleveland, O.
Chicago, Ill.
Sheboygan Falls
Beaver Dam
Omaha, Nebr.
Milwaukee
Spring Green
Madison
Rock Elm
Chippewa Falls
Jefferson
Grand Rapids
New York City, N. Y.
Elkhorn
Green Bay
Mayville
Madison
Milwaukee
Johnson Creek
Chicago, Ill.
Monroe
Lake Mills
Madison
Kansas City, Mo.
Green Bay
Chicago, Ill.
Madison
Chicago, Ill.
Fond du Lac
Chicago, Ill.
Elkhorn
Wauwatosa
Oshkosh
Augusta
Bloomington
Weyauwega
Madison
Milwaukee
Madison
De Kalb, Ill.
Burlington
Kenosha
Racine
Evansville, Ind.
West Bend

Kuehn, Henry Carl
 Kypke, Francis Henry Walter
 Lamb, Francis Stewart
 Lamm, Theodore Godfrey Christ
 Lang, Hal Herman
 Larsen, Archibald John
 Look, Walter
 McCauley, Clarence Edwin
 McCrory, Walter
 McGuire, Leslie Frank
 Moore, Hinman Rayworth
 Moore, John Dobner
 Morgan, Lynn James
 Newman, Robert Raymond
 Novak, Frank John
 Nye, James Gordon
 Oistad, Elmer Nels
 O'Keefe, Eugene
 Perrill, Alger
 Pierce, Marson Wilgus
 Piper, Leon Charles
 Porter, Dorie Chipman
 Pritzlaff, John Charles
 Raithel, Andrew George
 Reynolds, Preston Alfred
 Robar, Lyle Davis
 Roberts, William C.
 Robinson, Samuel Benette
 Rueth, George Albert
 Schattschneider, Elmer Eric
 Schuster, Daniel Devendorf
 Sheffer, Ralph Jay
 Sherilan, John Ensign
 Soper, James Philander, Jr.
 Steen, Arthur Lewis
 Stephens, Newbre George
 Stone, Benjamin DeWitt
 Tandberg, Alvin
 Thielke, Almond John
 Thomas, Earl Allison
 Truesdell, William Watkins
 Underwood, Robert Judson
 Van Schleinitz, Rene
 Watkins, Roderick Henderson
 Watts, Howard Manley
 Wedlock, Elmer Leroy
 Weil, Earl Dave
 Wolfe, Arthur Charles
 Wolford, Harold Ernest

Milwaukee
 Lake Mills
 Madison
 Watertown, S. D.
 Sioux City, Ia.
 La Crosse
 Eau Claire
 Hillsboro
 Milwaukee
 Rockford, Ill.
 Joliet, Ill.
 La Crosse
 Milwaukee
 Chicago, Ill.
 La Crosse
 Madison
 Bayfield
 Appleton
 Chicago, Ill.
 Milwaukee
 Darien
 Fontana
 Milwaukee
 Chicago, Ill.
 Madison
 Walworth
 Shullsburg
 Westfield
 Sun Prairie
 De Forest
 Milwaukee
 Madison
 Janesville
 Chicago, Ill.
 Madison
 Oconomowoc
 Wausau
 Chippewa Falls
 Mayville
 Mazomanie
 Dayton, O.
 Fergus Falls, Minn.
 Milwaukee
 Winona, Minn.
 Milwaukee
 Mineral Point
 Chicago, Ill.
 Streator, Ill.
 Danville, Ill.

Woodard, Selwyn Clarke
Zander, Frank William
Zinke, Arno Louis

Cherry Valley, Ill.
Algoma
Pond du Lac

—105

Course in Chemistry

Bohnson, Van Lorens
Cooke, Raymond Denney
Denis, Alphonse Derbigny
Duggan, Arthur Jacob
Echlin, Royal Edmund
Freiburger, William Howard
Heise, Herman Alfred
Johnston, Angus James
Jones, Maldwyn Lloyd
Ladon, Aaron Arthur
McGrath, Raymond Dyer
Miller, Frederick William
Miller, Hugh Baker
Moeschler, Carl Theodore
Roach, James Thomas
Spero, Samuel

Clinton, Ia.
Eau Claire
New Orleans, La.
Bradford, Pa.
Odanah
Armor, N. Y.
Milwaukee
Oconto
Racine
Monroe
Keokuk, Ia.
Merrill
Denver, Colo.
Stevens Point
Waterloo
Milwaukee

—16

ADULT SPECIAL STUDENTS

Anderson, Anna Louise
Arnemann, George Elmer
Baird, Chester Dillon
Baker, Bessie Anna
Baldwin, Raymond Lawrence
Ballantyne, Rose
Bizley, Emily Louise
Bohan, Ira James
Bowman, Frank Elliott
Bridges, James Henry
Bright, George Noyes
Brimmer, Charles John
Brinkhoff, Clara Gertrude
Buckstaff, John Day
Cavaney, Arthur James
Clark, Emily Ethel
Coddington, Robert Leroy
Coleman, Robert Earl
Combacker, Marie Frances
Conner, Ruth Priscilla
Duckart, Henry Francis
Emmet, Boris
Field, Harriet
Fusch, Laura Belle
Gallagher, Joseph Thomas
Grady, Julia Ricketts

Madison
Two Rivers
Milwaukee
Madison
Chicago, Ill.
Madison
Bridgeport, Conn.
Avoca
Sterling, Ill.
Roundup, Mont.
Minneapolis, Minn.
Milwaukee
Madison
Oshkosh
Milwaukee
Portage
Madison
Grand Rapids
Ellsworth
Auburndale
Stoughton
Milwaukee
Madison
Madison
Racine
Madison

Graham, Alexander Richard
 Grannis, Irving Van Vliet
 Gutowski, Leon Alexander
 Gysbers, John Henry
 Harms, Emma Sarah Louise
 Heinrich, Arnold Anton
 Imboden, David Calvin
 Jackman, Johnston Charles m
 Jackson, Sydney Charles
 Jarvis, Harold Pyott
 Kasen, Edwin Gerhard
 Kiley, Gerald John
 King, Charles Curtis
 Kinne, Arch Will
 Kinne, Burdette Ingersoll
 Knight, Florence Ledora
 Knox, George Minshall
 Kurth, Myron Bernard
 Lee, Henry Gustave
 Loew, Jessie Daisy Ida
 Lynch, Connor Arthur
 McGowan, Genevieve Margaret
 McGowan, Gladys Huldah
 Maher, Mary Iva
 Martin, Estelle Marie
 Martineau, Eugene Bird
 Miller, William Salmeron
 Narbo, Lauritz Martin
 Nespor, Zdenek
 Notz, Helen Eda
 Peet, Etta Ione
 Pinkerton, Harriet Louise
 Raymond, Geneva Dollie
 Richardson, Gertrude
 Rose, Maude
 Sanderson, Edward
 Saposs, David Joseph
 Schiffbauer, Paul Peter
 Schlichting, Victor Hugo
 Schmidt, John Johnson
 Schunck, John Ernest
 Scott, Laura
 Shimoda, Kanji
 Smith, Harry Forsythe t c
 Stosick, Edmund Charles
 Swail, Hazel Feakin
 Truitt, Albert Charles
 Wakeman, Hattie Josephine
 Warner, Robert Girdner
 Washburn, Raymond Heath

Whitewater
 Menomonte
 Racine
 Madison
 Belmont
 Cedarburg
 Green Bay
 Madison
 Madison
 Hamburg, N. Y.
 Harmony, Minn.
 Chicago, Ill.
 Winona, Minn.
 Madison
 Madison
 Madison
 Portland, Ore.
 Hayward
 Madison
 Colgate
 Chicago, Ill.
 Madison
 Madison
 Madison
 Madison
 Marquette
 Hixon
 Stavanger, Norway
 Manitowoc
 Milwaukee
 Kansas City, Mo.
 Prairie du Chien
 Manitowoc
 St. Paul, Minn.
 Janesville
 Milwaukee
 Milwaukee
 Benson, Ill.
 Deadwood, So. Dak.
 Madison
 Milwaukee
 Madison
 Ueda Nagonoken, Japan
 Jacksonport
 So. Milwaukee
 Madison
 Tuscola, Ill.
 Madison
 Ellensburg, Wash.
 Pewaukee

Webster, Winifred Cecil
 Winden, Guida Constance
 Woodruff, Mary Louise
 Wright, Hubert Pratt
 Yantis, George Franklin

Cresco, Ia.
Madison
Baraboo
Oshkosh
Olympia, Wash.

—81

ADULT SPECIAL STUDENTS, COURSE IN COMMERCE

Hansen, John Emil
 Jamison, Charles Laselle
 Lind, George Robert
 Martin, Jules Thomas
 Strong, William Barstow
 Voland, Phillip Walter
 Walker, Earl Reuben

Minwaukee
Knorrville, Tenn.
Rockford, Ill.
Sioux City, Ia.
Beloit
Kiel
Friendship

—7

ADULT SPECIAL STUDENTS, COURSE IN CHEMISTRY

Dvorak, Albert Charles
 Hawkins, Edwin Cameron
 Seeman, Frank John

Kewaunee
Madison
Kewaunee

—3

MUSIC

Graduates

Coon, Winifred Pansy
 Hudson, Josephine
 Klinefelter, Barbara Hazel

Edgerton
Madison
Madison

—3

FOURTH YEAR

Carter, Doris Eleanor Is
 Harrison, Edna Lucretia
 Holt, Grace
 Sanders, Belinda Marie

Hinsdale, Ill.
Madison
Sun Prairie
Madison

—4

THIRD YEAR

Babcock, Hazel Is
 Boettge, Cornelia Louise Is
 Brandt, Fredolia Eugenia Is
 Dahle, Gertrude Agnes
 Greene, Dotha Esther
 Johnson, Laurie Child Is
 Lehmann, Frances Esther
 Polley, Grace Irma
 Thrasher, Sarah Ellen Is
 Williams, Mable Elizabeth

Kasota, Minn.
Berlin
Watertown
Sun Prairie
Mazomanie
Hudson
Woodland
Madison
Kewanee, Ill.
Cobb

—10

SECOND YEAR

Birkinbine, Minnie Cordella
 Boyd, Alma Marie
 Currie, Jean Young
 Ely, Mary Chisholm Is
 Jencks, Vescey Belle
 Jennings, Helen
 Jungkunz, Ilma DeMurska Is
 Kasiska, Mable Josephine Is
 Kratz, Clara
 Mead, Jessie Rose
 Robinson, Miriam Josephine Is
 Simon, Lucile Clare
 Sullivan, Helen
 Terry, Clara Jeannette Is
 Verbeck, Vivian Edith

Sun Prairie
Madison
Milwaukee
Madison
Lodi
Madison
Freeport, Ill.
Pocatello, Idaho
Scheisingerville
Plymouth
Madison
Madison
Madison
Madison
Lodi

FIRST YEAR

Aarvig, Bessie Lillian
 Bagley, Lorna Doone Is
 Beecher, Benjamin Sanford Is
 Berry Otto Carter
 Borgman, Elizabeth Vera Is
 Bredette, Mabelle Claire Is
 Brereton, Ruth Virginia Is
 Buell, Paulina Merry Is
 Carr, Lucina Langworthy
 Colbert Cora Elizabeth
 Conklin, Mary Agnes
 Conrad, Elizabeth G
 Conyne, Norma Is
 Currie, Jean Young Is
 Doyle, Frances Hazel
 Elias, Elizabeth Hannah
 Foote, Genevieve Laura
 Frederickson, Lorraine Elizabeth a
 Freeman, Courtney Dodge Is
 Gilman, Flora Moseley
 Glanville, Mae Helen
 Gosselin, Florence Lea
 Heddles, Benea Sloan Is
 Heller, Anna
 Henking, Ruth E.
 Hink, Louise Clark
 Hoff, Olga Elleda Is
 Horton, Lorene Ringling
 Housel, Miriam Is
 Howard, Beatrice Marguerite Is

Pontiac, Ill.
Madison
Peoria, Ill.
Madison
Kewaupee
Sinsinawa
Madison
Madison
Madison
Ft Dodge, Ia.
Madison
Madison
Warren, Ill.
Milwaukee
Ft. Atkinson
Wales
Ft. Atkinson
Madison
Hinsdale, Ill.
Madison
Montfort
Green Bay
Madison
Waunakee
San Diego, Cal.
Chicago, Ill.
Tarrytown, N. Y.
Madison
Madison
Greenwood

Hugill, Florence Ione
 Ibach, Esther Matilda
 Jevne, Kadelia Gilbertson ls
 Johnson, Laura Butler ls
 Jones, Carol Richmond
 Keator, Edward Hallis e
 Kelly, Mabell Grace ls
 Kincaid, Ruth Gladys
 Koblitz, Helen Margaret
 Koenig, Ruby g
 Leeden, Hebe ls
 Levitan, Abe Mortimer ls
 Levitan, Esther ls
 Lewellin, Leota Marie
 Lindas, Ida Caroline ls
 Longhead, Mary Isabelle
 Lorenz, Jennie ls
 Lukes, Doris
 Luscher, Julia Gordon ls
 Manley, Irene Conway ls
 Matson, Elvera
 McMillen, Florence Edith
 Merryman, Frances Mildred ls
 Miller, Leile Evangeline
 Miner, Marjorie Rose ls
 Mitchell, Ellen ls
 Mowre, Edna Luella ls
 Murrish, Frances Louise
 Mussehl, Frederick Otto ls
 Northstrum, Charlotte Antoinette
 Owen, Ralph Albert g
 Peterson, Hazel Victoria ls
 Pfuderer, Helen Virginia ls
 Randolph, Marie Elizabeth
 Raymer, Abigail Mercy ls
 Rhodes, Jennie Culver ls
 Ridgway, Grace Gladys ls
 Ringling, Mattie Salome ls
 Robinson, Katherine Young ls
 Ross, Anne Henriette Elizabeth ls
 Schmitt, Pearl Ruby
 Schultz, Edith Caroline
 Schwalbe, William Louis e
 Sheperd, Roxie Eva ls
 Simpson, Esther Helen
 Smith, Beatrice Crow
 Smith, Dean Earl
 Smith, Vivian Muir ls
 Starks, Irene Valanche ls
 Steensland, Lohra ls

Darlington
 Alma
 Mcridian
 Madison
 Portage
 Moline, Ill.
 Madison
 Mattoon, Ill.
 Waterloo
 Two Rivers
 Kewanee, Ill.
 Madison
 Madison
 Waterloo
 Kenosha
 Belleville
 Sheboygan
 Sioux City, Ia.
 Oshkosh
 Beaver Dam
 Madison
 Ft. Atkinson
 Decatur, Ind.
 Belleville
 Madison
 Hillsboro
 Madison
 Mazomanie
 Jefferson
 Marinette
 Watertown
 Rice Lake
 Berwyn, Ill.
 Chicago, Ill.
 Chicago, Ill.
 Estherville, Ia.
 Madison
 Madison
 Madison
 Madison
 Madison
 Lake Mills
 Milwaukee
 Platteville
 Madison
 Montclair, N. J.
 Lake Mills
 Eagle Grove, Ia.
 Madison
 Madison

Sunstrom, Lillian Victoria	<i>Marinette</i>
Swarthout, Edyth Clare ls	<i>La Crosse</i>
Swarthout, Susie a	<i>La Crosse</i>
Swenson, Helen Katrina a	<i>Madison</i>
Theobald, Almina Mae	<i>Madison</i>
Thompson, David Reginald ls	<i>Madison</i>
Wallis, Eva Elizabeth ls	<i>Milwaukee</i>
Weaver, Paul John ls	<i>Madison</i>
Whitney, Mary Park	<i>Madison</i>
Worthington, George Edmund ls, 1	<i>Madison</i>
Young, Lena Hermione	<i>Madison</i>
Zander, August William ls	<i>Algoma</i>

—92

ADULT SPECIALS

Byrne, Agnes R.	<i>Madison</i>
Campbell, Harriette C.	<i>Calmar, Ia.</i>
Daly, Maude Hoyman	<i>Orangeville, Ill.</i>
Douglas, Edward Milton	<i>Madison</i>
Grimes, James Allen	<i>Madison</i>
Karberg, Elsie Anna	<i>Madison</i>
Ketcham, Edna Murray	<i>Madison</i>
Lane, Nina	<i>Madison</i>
Olson, Mollie	<i>Madison</i>
Post, Ethel Roe	<i>Madison</i>
Proell, Mary Rose	<i>Marshfield</i>
Reidenbach, Alice Blanche	<i>Lake Mills</i>
Reque, Sarah Juliana	<i>Morrisonville</i>
Rime, Olga Henrietta	<i>Del Rapids, S. D.</i>
Steinle, Margaret Anne	<i>Madison</i>
Stevenson, Claire Lillian	<i>Marinette</i>
Trulson, Dikka Falk	<i>Stoughton</i>
Wehrman, Frederica Adelaide	<i>Madison</i>

—19

MEDICAL SCHOOL

SECOND YEAR

Allard, Louis William ls	<i>Fond du Lac</i>
Axley, Albert August ls	<i>Cleveland</i>
Ballard, Charles McElroy	<i>New York, N. Y.</i>
Brophy, Norman Delroy g	<i>Madison</i>
Culver, Harry ls	<i>Appleton</i>
Franke, Meta Ellse ls	<i>Milwaukee</i>
Godfrey, Rush Clayton ls	<i>Lancaster</i>
Konrad, Frank Charles William ls	<i>Oshkosh</i>
Newman, John Robert ls	<i>Madison</i>
Petersen, Marius Smith ls	<i>Milwaukee</i>
Richardson, Maurice Leonard ls	<i>Turtle Lake</i>
Riley, William Henry	<i>Altoona</i>
Schulz, Raymond Louis	<i>Milwaukee</i>

Sutherland, Harry Nicholas g
Tearnan, Clyde Hadrian ls
Tearnan, Raymond Arthur ls
Wahl, Harry Roswell g

Madison
Marshfield
Marshfield
Stratford

—17

FIRST YEAR

Allaben, Gerald Randolph ls
Brandel, Harry McPherson ls
Brereton, Gilbert Elliott ls
Cook, Lyman Joseph
Dean, James Philip ls
Ecke, Hobert Dodo ls
Falk, Victor Sofus ls
Frey, Forrest Henry ls
Gasser, Herbert Spencer ls
Gesell, Robert Albert ls
Hartman, Ralph Chapel ls
Hartwig, Douglas Ferdinand ls
Heidner, Albion Henry ls
Helm, Harold McMurdo
Hyde, William George ls
Jackman, Johnston Charles ls
Jobse, Oliver John
Johnson, Lloyd William ls
Kleinschmidt, Henry William ls
Lothe, Herbert
McMahon, Frank Bartholomew ls
Middleton, William Drummond
Mitchell, Ralph Kenneth ls
Nadeau, Oscar Eugene ls
Nuzum, Frank Richard ls
Quigley, William Joseph ls
Stetler, Pearlle Mae ls
Tindall, Floyd Glo ls
Watke, Richard Puls ls
Williams, Arthur Joseph ls
Winholt, Walter Fritz ls
Witte, Dexter Hathaway ls

Rockford, Ill.
Oshkosh
Madison
Wheaton, Ill.
Madison
Auburndale
Stoughton
Hartford
Platteville
Madison
Davis, Ill.
Watertown
West Bend
Beloit
Racine
Madison
Milwaukee
Augusta
Oshkosh
Madison
Milwaukee
Davenport, Ia.
Milwaukee
Marquette
Janesville
Antigo
Richland Center
Kirkland, Ill.
Fond du Lac
Waukesha
Chicago, Ill.
Waukesha

—32

COURSE IN PHARMACY

FOUR YEAR COURSE

Atwood, Walter Myron
Ruenzel, Carl Henry
Russell, G. Archibald
Simons, Jasper Edgar

Madison
Milwaukee
Fond du Lac
Lodi

Senior
Sophomore
Senior
Senior

—4

TWO YEAR COURSE

Arnold, Edwin Bruce	<i>Lake Geneva</i>	First Year
Baker, John August	<i>Randolph</i>	First Year
Beedle, John Raymond	<i>Madison</i>	First Year
Boberg, Edwin John	<i>Eau Claire</i>	First Year
Burns, Walter Clement	<i>Oakfield</i>	Second Year
Cleophas, Walter Edmund	<i>Beloit</i>	Second Year
DuMez, Evora	<i>Cashton</i>	First Year
Fischer, Ray Otto	<i>Jefferson</i>	Second Year
Frills, Hans Christian	<i>Superior</i>	First Year
Gigot, Gustave Joseph	<i>Casco</i>	First Year
Gray, Harvey Oliver	<i>Oregon</i>	Second Year
*Hall, Morris Henry	<i>Racine</i>	Second Year
Hammersley, William Seymour	<i>Lake Geneva</i>	First Year
Hanson, Henry Peter	<i>Hayward</i>	Second Year
Hanson, James	<i>Sturgeon Bay</i>	First Year
Jaastad, Henry Olia	<i>Iola</i>	First Year
Jordan, Jennings Howe	<i>Glen Haven</i>	Second Year
King, Louis Fernand	<i>Lake Geneva</i>	First Year
*Kleinheinz, William Otto	<i>Madison</i>	Second Year
Lewis, William Henry	<i>Madison</i>	First Year
Lorch, Elmer August	<i>Madison</i>	Second Year
Lovejoy, Isaac Nelson	<i>Stoughton</i>	Second Year
*McGowan, Ray Elmer	<i>Milton Junction</i>	Second Year
Naffz, Otto	<i>Madison</i>	Second Year
Netzel, Arthur Frank	<i>Crandon</i>	Second Year
Nowakoski, Anthony Lawrence	<i>Berlin</i>	First Year
Peterson, Lawrence Peter	<i>Viroqua</i>	Second Year
*Pfeil, Paul Francis	<i>Fond du Lac</i>	First Year
Pomeroy, Ralph	<i>Gays Mills</i>	First Year
Quigley, Andrew LeRoy	<i>Lake Geneva</i>	First Year
Rennebohn, Oscar	<i>Milwaukee</i>	First Year
Stephenson, Louis DeWitt	<i>Madison</i>	First Year
Stordock, Gilman Llewellyn	<i>Beloit</i>	Second Year
Thoreson, Edward Norman	<i>Clintonville</i>	First Year
Wigren, John	<i>Chicago, Ill.</i>	First Year
Worthing, Hugh Otis	<i>Oakfield</i>	First Year

—36

COLLEGE OF ENGINEERING

SENIORS

Allen, Carlton Harrison	<i>Belleville</i>	M. E.
Andrews, Walter Cooper	<i>Baraboo</i>	Ch. E.
Ballschmeider, Arno Louis	<i>Sheboygan</i>	E. E.
Barth, John Herman	<i>Port Washington</i>	C. E.
Bartlett, Charles Lynn	<i>Milwaukee</i>	C. F.
Barton, Jesse Billings, Jr.	<i>Hinsdale, Ill.</i>	C. E.

* Taking three year course.

Beasley, Phineas Welles	Madison	C. E.
Belsky, Charles James	Dubuque, Ia.	E. F.
Bennett, Arthur Earl	Crandon	C. F.
Bennett, Benjamin Floyd	Madison	Ch. F.
Berssenbrugge, Bernard Joseph Benj.	Rotterdam, Holland	E. E.
Birchard, Ralph Rogers	Madison	G. E.
Blake, George Barnes	Madison	E. E.
Boardman, Clark Clinton	New Richmond	M. E.
Bonesteel, Lloyd Gomer	Padus	Min. F.
Boon, Leonard Francis	Appleton	C. L.
Bucher, Henry	Madison	C. F.
Budd, Harry Lockwood	Madison	E. E.
Caldwell, Walter Gaynor	Pewaukee	C. E.
Chadwick, Arthur Benjamin, Jr.	Milwaukee	Ch. E.
Chamberlin, George Willard	Whitewater	C. E.
Cnare, Frank	Madison	C. E.
Crowell, George G.	Almond	E. F.
Curtiss, Edwin Ford	Madison	E. E.
Daniells, Percy Hiram	Tomah	C. E.
Davis, Louis Samson	Granton	C. E.
Dean, Harry Jennings	Racine	E. E.
Dietrich, Frederick William	Madison	E. E.
Doherty, Ralph Edmund	Oshkosh	M. E.
Downing, Raymond Clarence	Watertown	Ch. E.
Draves, William August, Jr.	Milwaukee	E. E.
Falk, Gordon Sands	Milwaukee	G. E.
Force, Henry Hill	Oglesby, Okla. (Adv. Course)	E. E.
Fretz, Edmund Anthony	Milwaukee	C. E.
Fretz, Leo Armand	Madison	E. E.
Fucik, Robert Alexander	Williams Bay	E. E.
Fuller, Clifford	Madison	M. E.
Geyer, Arthur Norman	Roswell, N. M.	E. E.
Gibson, Leo Edgar	Fort Atkinson	F. E.
Gilman, Alexander Falk	Racine	C. E.
Gilman, Stephen	Madison	G. E.
Gingrich, Hiram Eugene	Rockford, Ill.	C. E.
Gleason, Edward Peck	Madison	M. E.
Glick, George Abbott	Marshalltown, Ia.	M. E.
Godfrey, Paul Swan	Wauwatosa	M. E.
Gottschall, Herbert Harvey	Madison	E. E.
Hain, Elmer Lamont	Edgerton	C. E.
Hall, Sidney Phillips	Madison	C. F.
Hambrecht, Albert Lewis	Madison	C. E.
Hammond, Lewis Merrick	Wauwatosa	C. E.
Hart, Ray Weston	Madison (Adv. Course)	C. E.
Henke, Fred Christian	Wautoma	C. F.
Hills, Earl Vinton	Waupun	E. E.
Hinckley, Dana Alexander	Milwaukee	C. E.
Hinn, William Henry	Fennimore	C. E.

Hitchcock, Frank Artemas	Edgerton	C. E.
Holverscheld, Robert	Hinsdale, Ill.	M. E.
Horneffer, Fred Clarence	Milwaukee	C. E.
Iakisch, Robert	Granton	C. E.
Jones, Charles Edward	Madison	C. F.
Kastler, Edward Louis	Racine	M. E.
Kayser, Nicholas James	Green Bay	G. E.
Keator, Edward Hollis mu	Moline, Ill.	G. E.
Klinger, William August	Milwaukee	C. E.
Kringel, August Emil	Wauwatosa	C. E.
Kruell, George John	Madison (Adv. Course)	C. E.
Lent, William Francis	Washington, D. C. (Adv. Course)	E. E.
Lidral, John Frank	Algoma	C. E.
Linley, Frederick Hewitt	Milwaukee	M. E.
Luedke, Arthur Louis	Milwaukee	C. E.
Lupinski, Oswald	Milwaukee	C. E.
Magdsick, Henry Herbert	Madison	E. E.
Meinicke, Alvin Edward	Milwaukee	E. E.
Melin, Oscar William	Moline, Ill.	C. E.
Merkin, Abraham E.	New York City	C. F.
Merrell, George Clarke	Ripon (Adv. Course)	C. E.
Miller, Lora Walter	Madison	C. E.
Muesse, Allan Ralph	Lancaster	E. E.
Murray, Hugh Earl	Superior	M. E.
Nance, Archibald Whitfield	Monroe	C. E.
Newman, Herbert Joseph	Milwaukee	E. E.
Nuti, Charles Bennett	Glen Haven	E. E.
Olson, Norman T.	Tomahawk	C. F.
Osthoff, Oscar Paul	Milwaukee	C. E.
Outzen, Andrew Newton	Madison	E. E.
Pearsall, Amos Cleveland	Des Moines, Ia.	M. E.
Pergande, Arthur Albert	Cedarburg	E. E.
Peterson, Orrin Peter	Wausau	Min. E.
Petrie, Walter W.	Fond du Lac	G. E.
Pierce, John Alexander	Elkhorn	C. E.
Pinney, James Charles	Madison	C. E.
Plamondon, George Octave	Elkhorn	C. E.
Pulver, Harry E.	Viroqua	G. E.
Reinert, Walter Julius August	Madison	C. E.
Richardson, Elwood Arthur	Turtle Lake	E. E.
Richardson, Linwood Thomas	Turtle Lake	E. E.
Robertson, Robert Earl	Fort Atkinson	C. E.
Robinson, Wallace Alexander	Madison	C. F.
Rohde, William Charles Frederick	Marinette	E. E.
Roherty, John Neal	Evansville	C. E.
Rote, Robert Lewis	Monroe	G. E.
Ruedebusch, Richard August	Mayville	M. E.
Schneider, Walter George	Madison	E. E.

Schulte, Walter Biersach	<i>Madison (Adv. Course)</i>	Ch. E.
Schultz, Arthur Fred	<i>Manitowoc</i>	M. E.
Schwalbe, William Louis mu	<i>Milwaukee</i>	C. E.
Sherburne, Frank Valentine	<i>Fremont</i>	C. F.
Siefert, Paul Herman	<i>Omro</i>	E. E.
Sjoblom, Alexander Theodore	<i>Grantsburg</i>	E. E.
Slidell, Kemper	<i>Milwaukee</i>	C. E.
Spoor, Ivan Herbert	<i>Oshkosh</i>	M. E.
Stillwell, Ellis Dayre	<i>Alexandria, S. D.</i>	E. E.
Storey, Oliver Wendell	<i>Milwaukee</i>	Ch. E.
Suhs, Guy Harold	<i>Waupaca</i>	M. E.
Sumnicht, Henry Anton	<i>Bonduel</i>	E. E.
Thiessen, Frank Carlton	<i>Oshkosh</i>	C. E.
Tourtellot, Edward Boyington	<i>Madison</i>	C. E.
Trane, Reuben Nicholas	<i>La Crosse</i>	M. E.
Traxler, Henry	<i>Milwaukee</i>	C. E.
Trewartha, John Gribble	<i>Hazel Green</i>	Min. E.
Tuttle, Alonzo Harris	<i>Richland Center</i>	G. E.
Van Aiken, Claude Linn	<i>Madison</i>	C. E.
Van Loon, William Owen	<i>Madison</i>	C. E.
Wagner, Karl Edward	<i>Madison (Adv. Course)</i>	C. E.
Waite, John Howard	<i>Brooklyn</i>	C. E.
Watson, Clarence Forbes	<i>Ashland</i>	C. E.
Wedlock, Frank Vivian	<i>Madison</i>	E. E.
Weidenfeller, Raymond Philip	<i>Mineral Point</i>	C. E.
Welsh, Harold Llewellyn	<i>Kansas City, Mo.</i>	Min. E.
Welsh, John Thomas	<i>Madison</i>	E. E.
Wetzel, William John	<i>Madison</i>	C. E.
White, Albert Ray	<i>Marinette</i>	Ch. E.
Witt, William Henry	<i>Marshfield</i>	C. E.
Workman, Dean Miller	<i>West de Pere</i>	M. E.
Zeidlhack, Felix Stephen	<i>Milwaukee</i>	C. E.

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JUNIORS

Abel, Charles Frederick	<i>Brillion</i>	E. E.
Anderly, Howard Merle	<i>Brodhead</i>	C. E.
Ankeney, Stewart Hill	<i>Madison</i>	C. E.
Ball, Walton Cook	<i>Union Grove</i>	C. F.
Barnum, Charles Treadway	<i>Wilkes Barre, Pa.</i>	M. E.
Beat, John	<i>Riley</i>	E. E.
Beck, Carl Rudolph	<i>Milwaukee</i>	C. E.
Beebe, Horace Merle	<i>Fond du Lac</i>	C. E.
Bickelhaupt, Carroll Owen	<i>Aberdeen, S. D.</i>	E. F.
Bickelhaupt, William Verne	<i>Aberdeen, S. D.</i>	Min. E.
Birch, Albert	<i>Fargo, N. D.</i>	C. E.
Bischel, Joseph Michel	<i>Bloomer</i>	C. E.
Blake, Harry Duvall	<i>Madison</i>	C. E.
Borecky, Carl William	<i>Ashland</i>	E. E.
Brue, Hans Nelson	<i>De Forest</i>	C. E.

Burmester, Everette Almond	Madison	C. E.
Burt, Clayton Roger	Brodhead	C. E.
Chin, Yu-shu	Anhnin, China	E. E.
Christie, Henry Austin	Superior	M. E.
Conlin, William Henry	Madison	C. E.
Coup, Fred Thomas	Madison	E. E.
Cowan, Glen Parker	Milwaukee	E. E.
Curwen, William Harrison	Shullsburg	C. E.
Cushing, William Tyler	Madison	Ch. E.
Dale, Drake Paul	Madison	C. E.
Damm, Paul Emil	Madison	E. E.
Davies, Frederick Earl	Fox Lake	C. E.
Davila, Lorenzo Juan	Juana Diaz, Porto Rico	C. E.
Dillon, Carl Duncan	Madison	C. E.
Druen, Dawn Earling	Madison	C. E.
Edmund, Harvey William	Fond du Lac	M. E.
Esau, Carl William	Milwaukee	C. E.
Esau, George Walter	Milwaukee	Ch. E.
Fay, Cyril Anton	La Crosse	Min. E.
Fellows, Kenneth Elbert	Lodi	C. E.
Fess, Perry Thomas	Madison	E. E.
Fetzner, Edward John	La Crosse	C. E.
Fisher, Charles Roswell	Beaver Dam	C. E.
Fowler, William Oliver	Humbird	C. E.
Gelch, Ernest Werner	Sheboygan Falls	E. E.
Glover, Louis Earle	Oshkosh	E. E.
Goeke, Otto Fred	Davis, Ill.	C. E.
Graham, Harold Moore	Madison	C. E.
Grant, Daniel McPherson	Milwaukee	Min. E.
Gray, Clifford Fell	Lorain, O.	M. E.
Grunert, Clarence Ferdinand	Monroe	M. E.
Halseth, Carl Martin	Menomonie	C. E.
Handy, Edward Haven	Madison	E. E.
Hare, Kenneth Ross	Superior	E. E.
Hebberd, Loren Loomis	Chicago, Ill. (Adv. Course)	M. E.
Hintze, Philip Henry	Stoughton	C. E.
Hoeverler, John Alexander	Madison	E. E.
Hoffman, Fritz J.	Madison	C. E.
Holmes, William Raymond	Baldwin	C. E.
Horton, Eber Roscoe, Jr.	Anderson, S. C.	C. E.
Huff, Jesse S.	Rogers, O.	E. E.
Hutchinson, Foye Peabody	Appleton	E. E.
Iakisch, John Rudolph	Granton	C. E.
Ilgnier, Howard Frederick	Milwaukee	E. E.
Johnson, Harold Holcomb	Belvidere, Ill.	C. E.
Johnson, John Hugo	Madison	E. E.
Johnson, Maurice	Bayfield	E. E.
Kalsched, Edward Albert	Marshfield	E. E.
Keller, Aloysius Deony	Baraboo	E. E.
Kemp, William Bilton	Madison	E. E.

Kerr, Henry Halleck	<i>Eau Claire</i>	E. E.
Kitagawa, Tometoro	<i>Tokio, Japan</i>	C. E.
Koenig, Meinhardt Carl	<i>Wausau</i>	C. E.
Kraatz, Karl Louis	<i>Wausau</i>	M. E.
Lamont, Maurice Brereton	<i>Aberdeen, S. D.</i>	E. E.
Langwill, John Sutherland	<i>Madison</i>	M. E.
Larson, Lawrence Carroll	<i>Tomah</i>	M. E.
Lauderdale, Jesse Edward	<i>Elkhorn</i>	E. E.
Lehman, Herbert James	<i>Madison</i>	E. E.
Liese, Fred Richard	<i>Berlin</i>	C. E.
Lightbody, James Nichols	<i>La Crosse</i>	E. E.
Lowell, John Wesley, Jr.	<i>Madison</i>	C. E.
Ludberg, Andrew	<i>Range</i>	C. E.
Lueders, Carl John	<i>Columbus</i>	C. E.
MacArthur, Angus, Jr.	<i>Madison</i>	M. E.
McKillop, William Langille	<i>Racine</i>	Ch. E.
Mac Laren, Robert Arthur	<i>Milwaukee</i>	C. E.
McLean, James Donald	<i>Beloit</i>	M. E.
Macaraeg, Juan Guico	<i>Binalona, Pang., P. I.</i>	C. E.
Mahoney, Frank David	<i>Fond du Lac</i>	E. E.
Mainland, James	<i>Racine</i>	E. E.
May, Arthur Edwin	<i>Madison</i>	C. E.
Mead, Paul Henry	<i>Clear Lake, S. D.</i>	C. E.
Meinecke, Ferdinand, Jr.	<i>Milwaukee</i>	Min. E.
Miller, Bert E.	<i>Madison</i>	E. E.
Moore, Roger Sherman	<i>Brodhead</i>	M. E.
Moritz, Charles James	<i>Madison</i>	C. E.
Morris, George Lee	<i>Joliet, Ill.</i>	C. E.
Mueller, Benjamin Harrison	<i>Alma</i>	M. E.
Murrish, William Ulysses	<i>Mazomanie</i>	E. E.
Nelson, Ernest Benjamin	<i>Iron River</i>	C. E.
Nickell, George Harold	<i>Waukesha</i>	C. E.
Oehler, Alfred Goeffrey	<i>Lake Mills</i>	E. E.
Olson, Carl	<i>Rhineland</i>	Min. E.
Paulus, Edwin J.	<i>Milwaukee</i>	C. E.
Pearsall, William Gilchrist	<i>McGregor, Ia.</i>	Min. E.
Pease, Spencer Adams	<i>Wauwatosa</i>	E. E.
Pflanz, Ernst Leopold	<i>Milwaukee</i>	C. E.
Phipps, Roy Chester	<i>Milwaukee</i>	M. E.
Pope, Louis Frederick	<i>Racine</i>	C. E.
Pugh, William Harold	<i>Racine</i>	M. E.
Raetzmann, Arthur Henry	<i>Elroy</i>	C. E.
Reber, Louis Earhardt, Jr.	<i>Madison</i>	M. E.
Ritchie, Prescott Congdon	<i>Madison</i>	M. E.
Roberts, Chapin	<i>Oak Park, Ill.</i>	M. E.
Roberts, Hugh Marine	<i>Superior</i>	Min. E.
Robertson, Almon Fulton	<i>Madison</i>	Min. E.
Schmidt, Herbert Edgar	<i>Superior</i>	Min. E.
Scudder, Charles Morrison	<i>Marinette</i>	C. E.
Shapiro, Samuel R.	<i>Marshfield</i>	E. E.

Simons, Richard Wharton	<i>Fairlee, Vt.</i>	E. E.
Slade, John Lathrop	<i>Hinsdale, Ill.</i>	M. E.
Sladky, Alexander Carlton	<i>Milwaukee</i>	M. E.
Stanley, Stewart Woods	<i>Sioux Falls, S. D.</i>	E. E.
Starkey, Harry Nicholl	<i>Eau Claire</i>	C. E.
Steinhagen, Edward Daniel	<i>Milwaukee</i>	C. E.
Stephens, James Coldazier	<i>Madison</i>	C. E.
Sweet, Nathan Clark	<i>Fond du Lac</i>	M. E.
Talbot, Lyman Robert	<i>Sioux City, Ia.</i>	C. E.
Terry, Charles Earl	<i>Tomah</i>	E. E.
Theurer, Fredrich Louis	<i>Milwaukee</i>	Ch. E.
Thoma, Andrew	<i>Milwaukee</i>	C. E.
Torkelson, Francis Arthur	<i>Madison</i>	C. E.
Ullius, Frederick William	<i>Milwaukee</i>	C. E.
Veerhusen, Herman Helma	<i>Madison (Adv. Course)</i>	C. E.
Voyer, Leonard Eugene	<i>Grand Rapids</i>	E. E.
Vroman, Harry Westrope	<i>Verona</i>	C. E.
Watson, Robert Dwight	<i>Old Port, O.</i>	M. E.
Week, Erling Finch	<i>Spokane, Wash.</i>	M. E.
Wegner, Arnold Adolph	<i>Wausau</i>	M. E.
Wehner, Stephen	<i>Madison</i>	C. E.
Weigen, Anders Christian	<i>Sun Prairie</i>	C. E.
Weldon, John Thomas	<i>Milwaukee</i>	C.
Whelan, John Baptist	<i>Chippewa Falls</i>	E. E.
White, George Leybourne	<i>Racine</i>	E. E.
Whyte, Clarence Arc	<i>Madison</i>	C. E.
Williams, Milo R.	<i>Canton</i>	Ch. E.
Wilson, Sylvester Francis	<i>Northport</i>	C. E.
Winter, Arthur Field	<i>New Richmond</i>	C. E.
Woffenden, John Bernard	<i>Madison</i>	C. E.
Wood, Lucien Alexander	<i>Fonda, Ia.</i>	M. E.
Woolrich, Willis Raymond	<i>Mineral Point</i>	E. E.
Wurl, Frank Louis	<i>Appleton</i>	Ch. E.

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SOPHOMORES

Achtenberg, Carl Albert	<i>Madison (Adv. Course)</i>	E. E.
Alexander, Jesse	<i>Madison</i>	E. E.
Algero, Harold Leigh	<i>Chicago, Ill.</i>	C. E.
Astell, Leonard Keith	<i>Madison</i>	C. E.
Badger, Arthur Hewitt	<i>Brisbane, Queensland,</i>	
	<i>Australia</i>	E. E.
Bailey, Lee Addison	<i>Chippewa Falls</i>	C. E.
Bainbridge, Walter L.	<i>Platteville (Adv. Course)</i>	Ch. E.
Ban, Kenichi	<i>Tokyo, Japan</i>	Min. E.
Barclay, Arthur Jackson	<i>Elgin, Ill.</i>	C. E.
Battles, Tracy Raymond	<i>Baraboo</i>	E. E.
Beebe, Gordon Alcott	<i>Beloit</i>	C. E.
Bennett, Charles Edwin	<i>Fort Collins, Colo.</i>	M. E.
Best, Byron Gray	<i>Ironwood, Mich.</i>	Min. E.

Best, Paul Butler	<i>Oak Park, Ill.</i>	E. E.
Blessing, Albert Hiram	<i>Fennimore</i>	E. E.
Blodgett, Charles Wallace	<i>Green Bay</i>	M. E.
Blomeyer, Roscoe Stanhope	<i>Milwaukee</i>	C. E.
Bolt, Walter Charles	<i>Milwaukee</i>	E. E.
Braasch, Frederick William	<i>Sheboygan</i>	M. E.
Bradish, Charles Bresse	<i>La Crosse</i>	E. E.
Branstad, Richard Eugene	<i>Eau Claire</i>	C. E.
Brightman, Grant Look	<i>Milwaukee</i>	Ch. E.
Brook, Niles Winfield	<i>Milwaukee</i>	M. E.
Browning, Elmer Ellsworth, Jr.	<i>Milwaukee</i>	E. E.
Bucklin, Alexander Hollis	<i>Idaho Falls, Idaho</i>	E. E.
Bullard, Lester Hiram	<i>Evansville</i>	M. E.
Burke, Kenneth Richard	<i>Manitowoc</i>	Ch. E.
Carpenter, Frank Alonzo	<i>Spring Green</i>	M. E.
Carus, Edward Hegeler	<i>La Salle, Ill.</i>	Ch. E.
Cassady, Thomas Arthur	<i>Janesville</i>	C. E.
Christensen, Magnus	<i>Marinette (Adv. Course)</i>	M. E.
Chritzman, George Moffitt	<i>Kewance, Ill.</i>	E. E.
Connolly, John Mark	<i>Milwaukee</i>	E. E.
Corbett, Richard Adkins	<i>National Home</i>	M. E.
Cortelyou, Townsend	<i>Brodhead</i>	C. E.
Damon, William Henry	<i>Madison</i>	E. E.
Davis, Robert William	<i>Tafolgraig, Wales</i>	
	<i>(Adv. Course)</i>	M. E.
Davis, Rowland George	<i>Milwaukee</i>	E. E.
Decker, Ramsay Prescott	<i>West de Pere</i>	E. E.
De Merit, Merrill Wilson	<i>Lake Mills</i>	E. E.
Dequine, Louis Edward	<i>Fond du Lac</i>	C. E.
Der-Mugerditchyan, Bairge Stepan	<i>Madison</i>	C. E.
Dickinson, Kendall Foote	<i>Lake Geneva</i>	M. E.
Diehl, Albert Rudolf	<i>Buffalo, N. Y.</i>	C. E.
Distelhorst, Charles Andrew Robert	<i>Dorchester</i>	C. E.
Doerschuk, Herbert Marion	<i>Shanesville, O.</i>	E. E.
Dohm, John Walter	<i>Dane</i>	C. E.
Dorr, George Nickoli	<i>Stoughton</i>	M. E.
Draper, Huntington Adams	<i>Pierre, S. D.</i>	M. E.
Dressendorfer, Arthur Emil	<i>Madison</i>	E. E.
Dreyer, Elmer John	<i>Janesville</i>	E. E.
Dunlap, Eugene	<i>Auroraville</i>	E. F.
Dunnewald, Paul Wilterding	<i>Madison</i>	C. E.
Eleazarian, Aram Movses	<i>Teheran, Persia</i>	E. E.
Elmore, William Chapman	<i>Green Bay</i>	M. E.
Ely, Alexander White	<i>Edgerton</i>	C. E.
Emmert, Harry David	<i>Muskogee, Okla.</i>	E. E.
Fehlandt, William Louis	<i>Madison</i>	C. E.
Fitz, Erwin Otto	<i>Milwaukee</i>	Min E.
Fraser, John, Jr.	<i>Milwaukee</i>	M. E.
Fuller, Judson Earl	<i>Oak Park, Ill.</i>	M. E.
Gaskell, Charles James	<i>Baraboo</i>	M. E.

Gielow, Walter Charles	Manitowoc	C. E.
Gillan, Paul Harned	Milwaukee	C. E.
Gillett, Laurence Farrington	Pond du Lac	E. E.
Graetz, Walter Carl	Milwaukee	E. E.
Griffith, William Harry	Toledo, O. (Adv. Course)	C. E.
Grimmer, Edwin William	St. Louis, Mo.	C. E.
Gysbers, Arthur	Brandon	E. E.
Haag, Edmund Clarence	Whitewater	Ch. E.
Hahn, Edward William	Madison (Adv. Course)	E. E.
Hansen, Clinton John	Butte, Mont.	Min. E.
Head, Clarence Eugene	Kenosha	M. E.
Heimbach, Elbert Blaine	Honey Creek	E. E.
Henningsen, Earle Stanley	Oakfield	E. E.
Hewitt, Earle John	Nashotah	C. E.
Himmelstein, Arthur Louis	Milwaukee	C. E.
Hitchcock, Glen Olin	West Salem	M. E.
Holbrook, Henry Edwin	Chicago Ill.	Ch. E.
Holverscheid, Erwin	Hinsdale, Ill.	M. E.
Horstkotte, Edward Henry	Ellsworth	E. E.
Hugel, Edgar Frank	So. Milwaukee	M. E.
Jacobson, Carl Joseph	Elkhorn	M. E.
Jamieson, John Rodney	Poynette (Adv. Course)	C. E.
Johns, Frank Wickizer	Lake City, Minn.	E. E.
Jones, Louis De Witt	Waukegan, Ill.	C. E.
Keene, Alvin Dewayne	Leon	E. E.
Kellogg, Rufus Henry	Green Bay	M. E.
Kiernan, Lawrence James	Geneva, Ill.	M. E.
Kletzmman, William Arthur	Eau Claire	E. E.
Kirch, Charles Hugo	Mazomanie	C. E.
Kolloge, Herman Frederic	Milwaukee	Ch. E.
Kozarek, Steven Aloizy	Antigo	C. E.
Krell, Samuel Arthur	Madison (Adv. Course)	C. E.
Kroening, Ralph Henry	Milwaukee	C. E.
Langdon, William Patrick	Janesville	E. E.
Larsen, Herman	La Crosse	C. E.
Larsen, Robert Leonard	Madison	M. E.
Laughlin, Earl Cletus	Madison	E. E.
Lewis, John Alfred	Terraville, S. D.	C. E.
Loetscher, Martin Buol	Dubuque, Ia.	M. E.
Louret, Harry Abraham	Hingham	E. E.
Love, Joseph Eugene	Chicago, Ill.	E. E.
Loweth, Frederick Curtis	Chicago, Ill.	C. E.
Luckey, Carroll Hasting	Madison	C. E.
McDougall, Shirley Alton	Whitewater	Ch. E.
McFarland, Robert Ernest	Grand Rapids	E. E.
McGrath, William Francis	Milwaukee	M. E.
McGuire, Alfred Russell	Honey Creek	Min. E.
Madson, Frank Henry	Racine	Min. E.
Markwardt, Lorraine Joseph	Lansing, Ia.	C. E.
Mears, George Sherman	Pond du Lac	C. E.

Mengel, Forest Foster	<i>Oconomowoc</i>	C. E.
Mereness, Harry Elmer	<i>Elkhorn</i>	C. E.
Merkel, Richard Hans	<i>Sauk City</i>	C. E.
Merriell, George Hughes	<i>Chicago, Ill.</i>	E. E.
Meyer, A. Harrison	<i>Milwaukee</i>	E. E.
Miller, Jesse Eugene	<i>Brodhead</i>	E. E.
Moyer, William David	<i>Grand Rapids</i>	M. E.
Mueller, August Henry	<i>Manitowoc</i>	C. E.
Mueholland, William Martin	<i>Buffalo, Wyo.</i>	C. E.
Naber, Alexander Herman	<i>Shawano</i>	C. E.
Nee, Patrick Joseph	<i>Superior</i>	E. E.
Newbury, Robert Charles	<i>Waukesha</i>	E. E.
Nicol, Jason T.	<i>Sparta</i>	Min. E.
Norris, Lucius Allen	<i>Elkhorn</i>	E. E.
Olson, Lester Fremont	<i>Chicago, Ill.</i>	E. E.
Osann, Norman	<i>Oak Park, Ill.</i>	E. E.
Page, Harry Allen	<i>Prairie du Sac</i>	M. E.
Palmatier, Horace Potter	<i>Madison</i>	E. E.
Parks, Rollin Robert	<i>Fredonia</i>	E. E.
Payne, Charles Allison	<i>Wauwatosa</i>	E. E.
Peirce, Walter Anderson	<i>Madison</i>	C. E.
Phelps, George Ray	<i>Albany</i>	M. E.
Phelps, Marion A.	<i>Albany</i>	M. E.
Pickard, Arthur Edward	<i>San Diego, Cal.</i>	M. E.
Pickett, Kenneth William	<i>Helena, Mont.</i>	Min. E.
Pope, Arthur Charles	<i>Ableman</i>	Ch. E.
Porter, James William	<i>Elkhorn</i>	M. E.
Porter, Joseph	<i>Madison</i>	C. E.
Post, Frank Freeman	<i>Black River Falls</i>	C. E.
Post, Malcolm Franklin	<i>Madison</i>	C. E.
Poundstone, Earl Charles	<i>Mellen</i>	C. E.
Pribnow, Albert Frederick	<i>Mellen</i>	E. E.
Prochazka, Henry Charles	<i>Manitowoc</i>	M. E.
Quas, Adolph William	<i>Madison</i>	M. E.
Rau, Harold Lippert	<i>Milwaukee</i>	Min. E.
Ree, Albert Charles	<i>Jefferson</i>	M. E.
Reid, Bryan Seaborne	<i>Ashland</i>	Min. E.
Reilly, Thomas William	<i>Port Washington</i>	C. E.
Reynolds, Thomas Myrick	<i>Milwaukee</i>	C. E.
Richter, Oscar Arthur	<i>Manitowoc</i>	M. E.
Rogers, Howard Herbert	<i>Oak Park, Ill.</i>	Ch. E.
Roth, William Arthur	<i>Monroe</i>	M. E.
Ruhloff, Frederick Carl	<i>Milwaukee</i>	C. E.
Rust, Thomas H.	<i>Eau Claire</i>	C. E.
Rynning, Paul Bertheau	<i>La Crosse</i>	C. E.
Scarcliff, George Allen	<i>Janesville</i>	C. E.
Schecter, Samuel	<i>Madison</i>	C. E.
Scherer, Harold Lester	<i>Milwaukee</i>	M. E.
Schilling, Walter William	<i>Green Bay</i>	E. E.
Schneider, Martin Peer	<i>Madison</i>	C. E.

Schroeder, George Edward	Augusta	C. E.
Schwartz, Adolph August	Brillion	C. E.
Seifert, Andrew	Milwaukee (Adv. Course)	C. E.
Shape, Alfred Charles	Milwaukee	Ch. E.
Sheppard, Frank Alexis	Fond du Lac	C. E.
Sheriff, Fredrick Beby	Helena, Mont.	M. E.
Shonat, Archie	Galesville	C. E.
Simon, Albert Henry	Ashland	C. E.
Smith, Frederick Slocum Howland	Janesville	C. E.
Smith, Leon Albert	Madison	C. E.
Soergel, Robert John	Milwaukee	M. E.
Sorenson, Benjamin	Beloit	M. E.
Speer, Zeno	Milwaukee	E. E.
Springer, Lew Wallace	East Las Vegas, N. M.	E. E.
Stachle, Paul Max	Manitowoc	E. E.
Stapleton, Leonard Edward	Watertown	C. E.
Stengl, Rudolph John	Antigo	Min. E.
Stewart, Frederick James	Baraboo	C. E.
Stoddard, Leroy Lester	Platteville	E. E.
Stoelting, Hugo Herbert	Oconto	E. E.
Sturgeon, Edward Tyler	Chicago, Ill.	C. E.
Sun, Jeepong Roy	Shanghai, China	M. E.
Tack, Myron Anthony	Marshfield	E. E.
Taylor, Herbert Cecil	Lancaster	C. E.
Textor, Clinton Kenney	Milwaukee (Adv. Course)	Ch. E.
Tobin, Ralph Casper	Mellen	C. E.
Toye, Herbert Coleman	Decorah, Ia.	E. E.
Trayer, George William	Lansing, Ia.	C. E.
Volquarts, Victor Henry	Madison	M. E.
Walker, Emmett James Welch	Oklahoma City, Okla.	C. E.
Ward, Oscar Gardien	Fond du Lac	M. E.
Warth, Edward Christian	Milwaukee	E. E.
Watkins, Robert Marsh	Milwaukee	M. E.
Weinhagen, Albert Berthold	Milwaukee	M. E.
Wendt, Carl Albert	Waterloo	E. E.
Whitney, Edward Nelson	Madison	C. E.
Whomes, Walter Dewit	Madison	E. E.
Wiedenbeck, Harry John	Mauston	C. E.
Wilder, Frank Blackman	Evansville	Ch. E.
Wile, Harold Davidson	Chicago, Ill.	E. E.
Wiley, Raymond Aldred	Nekoosa	C. E.
Willmore, Howson Edward	Waukegan, Ill.	E. E.
Wilson, Harry Albert	Chicago, Ill.	M. E.
Wiskocil, Clement Tehle	Milwaukee	C. E.
Wohra, Har Das	Piro Shah, Gujarat Punjab, India	M. E.
Wolff, Werner Peter	Cumberland	Min. E.
Wood, Harold Paul	Madison	C. E.
Woods, Charles Reynolds	Fond du Lac	C. E.
Woolhiser, Herbert Ladue	South Wayne	E. F.

Yoshida, Henry Tsunezo
Zimmerman, Fred Russell

Tokyo, Japan
Madison

E. E.
M. E.
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FRESHMEN

Abell, Harry
Adlington, Earl Raymond
Allen, Royal Charles
Allyn, Stanley Charles
Anderson, Carl Gustave
Anderson, Earl Ando
Andree, Richard Ambrose
Arpin, George Nienstedt
Arps, Edmund John
Bacon, Vaughan Robert
Balch, Harold Charles
Ballard, Roscoe Frederick
Ban, Rinji
Banbury, Ray Wesley
Barker, George, Jr.
Baumgartner, William Frederick
Becker, Dean Brown
Bentz, Fred August
Bergmann, Henry Ernest
Boisen, Anton Peter
Bonneville, Guidose James
Borchsenius, Harold
Brady, Laban Jenkins
Brainard, Harry Dion
Brintnall, Percy Cosson
Brodesser, Roman August
Brooks, Gale Meriam
Buettell, Roger Bross
Burns, Thomas Stephen
Butler, Charles
Buxton, Vernon Roy
Cahill, Ralph Hughes
Cannon, Charles Henry, Jr.
Carey, William Herbert
Case, Harry Jackson
Cash, Frank Irvin
Chandler, Milton Evans
Childs, Leonard Chapin
Church, Arthur Potter
Churchill, Warren Roy
Cobb, Arthur, Jr.
Cochems, Stanley Carl
Consoer, Arthur William
Cox, Ernest John
Crumpton, Kenneth Radford

Joliet, Ill.
Viroqua
Portage
Madison
Madison
Hitchcock, S. D.
Milwaukee
Grand Rapids
New Holstein
Omaha, Nebr.
Neillsville
Milwaukee
Tokyo, Japan
Clear Lake, Idaho
Sparta
Pensaukee
Fort Atkinson
Nekoosa
Milwaukee
Cataract
Rib Lake
Madison
El Reno, Okla.
Lone Rock
Kaltspel, Mont.
Milwaukee
Zion City, Ill.
Dubuque, Ia.
Watertown, N. Y.
Virginia, Minn.
Spooner
Milwaukee
Milwaukee
Newtonville, Mass.
Racine
Hudson
Racine
Oak Park, Ill.
Whitewater
Hayward
Cleveland, Ohio
Sturgeon Bay
Chicago, Ill.
Stanley
Superior

Dale, George Kirkham
 Daube, Donald Ougley
 Deadman, Hazel Belle
 Douglas, Clayton Orville
 Drechler, Charles Frank
 Duke, John Logan
 Dyer, Claude Just
 Eggum, Bernhard Olaus
 Eidemiller, Howard Nelson
 Elderkin, Paul Nathan
 Engsberg, Ralph William
 Epstein, William Carl
 Erickson, Kenneth William
 Erwin, Lawrence Boynton
 Evans, Melvin James
 Everhart, Floyd Samuel
 Falconer, Addison Bentley
 Fisher, Herbert Charles
 Fletcher, Freeman Douglas
 Flleman, Lloyd Lyall
 Fraser, Erwin Miles
 Frisbie, Charles George
 Frost, Arthur Henry, Jr.
 Frost, Russell Edward
 Fuente, Ernesto de la
 Fullenwider, William Glenn
 Gates, Clarence William
 George, Marshall Woods
 Giebel, Raymond
 Gillette, Edmond Stephen
 Glasgow, Isaac Leon
 Goodland, Rudyard Lewis
 Gottschalk, Henry William
 Gray, Thomas Clyde
 Griswold, John William
 Gross, Chester Phillip
 Haley, Harold Joseph
 Halladay, Frank Stanley
 Harker, Harvey Merton
 Harrison, Herbert Stanley
 Hawkins, Burton Hynard
 Heathcock, Earnest Harrison
 Hendee, Cerlan Abner
 Henderer, Angus McNaughton
 Hettgar, Edward John
 Hicks, Luther Reuben
 Houghton, Will Chester
 Hubbell, Wolcott Wood
 Hughes, Robert Davis

Oshkosh
 Chicago, Ill.
 Madison
 Oshkosh
 Butternut
 Madison
 Bloomington, Ill.
 Mt. Horeb
 La Crosse
 Madison
 Lake Mills
 Madison
 Racine
 Milwaukee
 Riverside, Ill.
 Oshkosh
 Bismark, N. D.
 Beaver Dam
 Morrison, Ill.
 Milwaukee
 Milwaukee
 Hartland
 Rockford, Ill.
 Topeka, Kans.
 Madadores, Mex.
 Madison
 Beetown
 Chicago, Ill.
 Nelson
 Aurora, Ill.
 Milwaukee
 Racine
 Milwaukee
 Madison
 West Salem
 Stevens Point
 Watertown, N. Y.
 Plover
 Fort Dodge, Ia.
 La Crosse
 Manitowoc
 Mineral Point
 Milwaukee
 Milwaukee
 Hartford
 Oshkosh
 Beetown
 Madison
 Dayton, O.

Irwin, Batte	Charlotte, N. C.
Isabella, Nicholas Michael	Spooner
Johnson, Nathan Ritchey	Milwaukee
Jones, Richard Henry	Janesville
Kahn, Robert	Milwaukee
Kaltenborn, Ernest Charles	Madison
Kelm, Alfred Carl	Faribault, Minn.
Kielblock, Arthur Clarence	Watertown
Kimball, John Thoroughgood	Madison
King, Ralph Siemens	Madison
Kleck, Carl Frederick	Milwaukee
Kleinhen, Harry Jay	Davenport, Ia.
Knocke, Louis Thielemann	Waukesha
Knowles, James Carroll	Rockford, Ill.
Knudsen, John Jones	Waupaca
Korst, Philip Burch	Janesville
Krueger, Carl	Stevens Point
Krueger, Forrest Julius	Madison
Kuhns, George Roland	Madison
Kunesh, Joseph Francis	Kewaunee
Labram, Frederick W.	Chicago, Ill.
Lake, Mark Clayton	Brookhead
Lampert, Benjamin Harrison	Oshkosh
Lange, Ernest Otto	Fond du Lac
Lawrence, Mortimer Mertz	Beaver Dam
Lawrence, Wilder	Milwaukee
Lerom, Oscar S.	Buxton N. D.
Lloyd, Thomas Duquette	Chicago, Ill.
Locken, Enoch	Black River Falls
Loesch, Joseph Benjamin	Chicago, Ill.
Loetscher, Arnold Edward	Dubuque, Ia.
Lowry, Lellis Lloyd	Cresco, Ia.
McCall, Charles Frederick	Milwaukee
McCutchin, Grant Rue	Arena
MacEachron, John, Jr.	West De Pere
McEachron, Wilbur Hugh	Rockford, Ill.
McFarland, Malcolm Fizer	Keokuk, Ia.
McIntosh, Fabian Clifton	Bradford, Pa.
McMurry, William Matthew	Lake Preston, S. D.
Magill, Donald Groves	Guadalajara, Mex.
Manegold, John Robert	Milwaukee
Manley, Earl Palmer	Lake Geneva
Manley, Guy Halifax	Lake Preston, S. D.
Mitchell, James Wylie	St. Joseph, Mo.
Monk, Robert William	Neillsville
Moody, Ralph Edmund	Madison
Moran, Frank Thomas	Tomah
Morgan, Everette Kellogg	Antigo
Moss, John Hugh	La Crosse

Nickel, Walter Frederick
 Noyes, Eugene Carter
 Peter, Albert George
 Petermann, Hans August
 Prissman, Niel Young
 Probert, Samuel Harold

Rannenber, George Christian Louis
 Rather, Maxmilian Frederic
 Ray, John Murray
 Redfield, Frank Otis
 Reiss, Otto Martin
 Replogle, Karl Evans
 Resseguie, Harold Daniels
 Reuter, Lafe Otto, Jr.
 Riley, Donald Harrison Barnett
 Rindy, Herbert Clyde
 Ritchie, Murray Lee
 Robertson, Henry Elvens
 Roling, Reuben Charles
 Rolson, Frank Lee
 Rosenkranz, Floyd McKee
 Rosenow, Ernst Eric
 Ross, Livingston
 Rule, Elmer
 Sawyer, Howard Charles
 Schilling, Carl Fielding
 Schleck, Walter Hubert
 Schlick, Egbert Ralph
 Schmitz, Nicholas Joseph
 Schneider, Andrew George
 Schwartz, Harry Albert
 Sheriffs, Walter Alexander
 Shoop, Sidney Allen
 Simmons, Lynn Archibald
 Simonds, Paul William
 Sjoblom, Maurice Charles
 Smart, Orren David
 Smith, Harold Elmer
 Smith, Robert Matthew
 Stephany, Erwin John
 Stivers, Charles Paul, Jr.
 Stock, Hugo Louis
 Sweet, Ben Frank
 Talbot, Ray George
 Tallman, William Bump
 Tanberg, Charles Oscar, Jr.
 Tanghe, Edward Franklin
 Taylor, Joseph George
 Teschan, Edward Gilbert

Butte, Mont.
 Marinette
 Milwaukee
 Milwaukee
 Rea Oak, Ia.
 Loc St. Vincent,

Alberta, Canada

Chicago, Ill.
 Shawano
 Reedsburg
 Stevens Point
 Sheboygan
 Red Oak, Ia.
 Watertown, N. Y.
 Washburn
 Evanston, Ill.
 Verona
 Morrison, Ill.
 El Paso, Texas
 Charles City, Ia.
 Ellsworth
 Occonomowoc
 Menasha
 Rensselaer, Ind.
 Linden
 Carpenterville, Ill.
 Leavenworth, Kans.
 So. Milwaukee
 Chicago, Ill.
 Madison
 Madison
 Oshkosh
 Chicago, Ill.
 Streator, Ill.
 Corliss
 Milwaukee
 Grantsburg
 Waukesha
 Milwaukee
 Madison
 Manitowoc
 Kansas City, Mo.
 Madison
 Fond du Lac
 Sparta
 Janesville
 La Crosse
 Milwaukee
 Madison
 Milwaukee

Tews, Arthur A. C.	Waukesha
Thomas, Edward Francis	Pewaukee
Thompson, Harold Montrose	St. Louis, Mo.
Thompson, Oscar Theodore	So. Kaukauna
Tillotson, Loyal Garis	Painesville, O.
Toye, Earle William	Madison
Turnbull, William Alexander	Superior
Tuttle, Ray Charles	Madison
Upham, Charles Sidney	Marshfield
Voght, Kenneth Edward	Escanaba, Mich.
Wagner, Julius Phillip	Milwaukee
Walter, Ralph Winfred	Mazomanie
Walters, Jay Douglas	Berlin
Warner, Laird Amisee	Grand Rapids
Weber, Cassius Michael	Chicago, Ill.
Weber, Henry	Milwaukee
Wellman, Walter	Madison
Wells, Grant Robert	Oakfield
Welsch, George Brinton, Jr.	Milwaukee
Wheeler, Edward Charles	Milwaukee
Williams, Paul Liebenstein	Fox Lake
Wilson, Walter David	Berlin
Winkie, Howard Franklin	Portage
Withington, Arthur Harding	Baraboo
Wurdemann, Converse	Milwaukee
Young, Edward E.	North Bend
Zachow, Clarence William	Clintonville

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ADULT SPECIALS

Bleyer, Addison Milton	Milwaukee	M. E.
Borchert, Raymond Charles	Milwaukee	
Bullerjahn, Adolph David	Milwaukee	
Dawson, Francis Anderton	Madison	
Doyle, Ernest Patrick	Marinette	E. E.
Dudley, Albert Joseph	Hartford	
Garlock, Lewis Franklin	Racine	
Ghasiguian, Vahram	Madison	E. E.
Greenwood, Charles Herbert	Milwaukee	C. E.
Hatch, Walter Adams	Iola	C. E.
Hoffman, Eugene Robert	Ellensburg, Wash.	C. E.
Hoyt, Ralph Sherman	Scotia, N. Y.	M. E.
Johnson, James Raymond	Helena, Mont.	
Knebes, Erwin Lewis	Milwaukee	C. E.
Lorig, Frank William	South Milwaukee	M. E.
McCann, William Ray	Madison	E. E.
Meincke, John Williams, Jr.	Milwaukee	
Moiseyeff, Leonard Boris	Tomsk, Siberia, Russia	E. E.
Moy, Bock Ton	Milwaukee	

Nelson, Benjamin Louis	<i>La Crosse</i>	
Pipkin, Humphrey Harold	<i>Beloit</i>	C. E.
Sandberg, Henry Theodore	<i>Madison</i>	
Santamaria, Marco Antonio	<i>New York City</i>	
Schwada, Joseph Phillip	<i>Milwaukee</i>	C. E.
Steudel, George Elias	<i>Chilton</i>	M. E.
Stewart, Lee Hayne	<i>Madison</i>	Min. E.
Strothmann, Oliver Ernest	<i>Milwaukee</i>	M. E.
Tanghe, Henry Franklin	<i>Milwaukee</i>	C. E.
Thayer, Thaxter Crugier	<i>Madison</i>	M. E.
Thomas, Merrick Ingals	<i>Denver, Colo.</i>	M. E.
Wade, John Cedric	<i>Muscoda</i>	C. E.
Walters, Lee David	<i>Madison</i>	M. E.
Zorsch, Edward Albert	<i>Brighton, N. Y.</i>	C. E.
		—33

LAW SCHOOL

THIRD YEAR

Bednarek, Joseph Leon, B. A.	<i>Beaver Dam</i>
Blanchard, George Washington, B. A.	<i>Colby</i>
Brown, Harry Willard	<i>Madison</i>
Browne, James Howard	<i>Chippewa Falls</i>
Colignon, John Joseph, B. A.	<i>Sturgeon Bay</i>
Dean, Archibald Tabor	<i>Gresham, Ore.</i>
Dohmen, Fred Wentworth, B. A.	<i>Milwaukee</i>
Donnelly, Emmett Archybalde	<i>Milwaukee</i>
Edwards, Verne Roberts	<i>Bloomington</i>
Ford, John Patrick	<i>Rosendale</i>
Goldschmidt, William Jacob	<i>Milwaukee</i>
Harnden, Emery David	<i>Madison</i>
Haseltine, Winfred David, B. A.	<i>Madison</i>
Jenswold, Franklin Ernest	<i>Baraboo</i>
Kelly, Albert Matthew	<i>Milwaukee</i>
Lobb, Albert James, B. A. & Ph. B.	<i>Ripon</i>
McComb, Archie	<i>Milton</i>
Michelson, Albert G., B. L., g	<i>Mt. Horeb</i>
Miller, John Bernard	<i>Lyndon Sta.</i>
Miller, William, W., B. A.	<i>Nappanee, Ind.</i>
Millmann, Charles Frank, B. A.	<i>Milwaukee</i>
Morrissey, Maurice	<i>Delavan</i>
Murat, Walter Bernard	<i>Stevens Point</i>
Murphy, James Roach	<i>Chippewa Falls</i>
Orchard, Milton, Ph. B.	<i>Muscoda</i>
Puchner, Rudolph Edward	<i>Wittenberg</i>
Rademaker, Oscar, B. A.	<i>Madison</i>
Rigney, Stephen John	<i>Scioto Mills</i>
Roehl, Julius Otto, B. A., g	<i>Milwaukee</i>
Rundell, Oliver Samuel	<i>Livingston</i>
Sanderson, Thomas Harvey, B. A.	<i>Cambria</i>
Smith, Charles Forster, Jr., B. A.	<i>Madison</i>

Stark, Charles William, Jr., B. A.
 von Steinmetz, Karl Edward
 Tipton, Leo Maurice, B. A.
 Whitney, Wildon Forest

Tiffany
Madison
Las Vegas, N. M.
Whitewater

—36

SECOND YEAR

Boyle, Frank Edward
 Campbell, George
 Coorsen, Louis Arthur, B. A.
 Duckert, Richard Frederick
 Emmett, Shirley Lincoln
 Esch, Fred Henry, B. A.
 Francis, Tim Alvano, B. A.
 Grady, Albert William, B. A.
 Haase, Oscar Rudolf, B. A.
 Hannan, William Frawley, B. A.
 Hanson, John Arndt
 Hirsch, Marx, B. A.
 Hogan, James Mangan, B. A.
 Horan, Emmet, Jr.
 Jones, John Reese
 Juergens, Carl Henry, B. A.
 Leicht, George Jacob
 Malig, Harvey Augustus
 Malone, James Francis
 Meyer, Frank Collis
 Noyes, Haskell, B. A.
 Orr, Albert Wallace, B. A.
 Peterson, Alvin Benjamin, B. S.
 Phelps, Sumner Henry
 Sachtjen, Herman William, B. A.
 Te Selle, Clarence John
 Wong, Ko-ung

Eau Claire
Madison
Milwaukee
Cottage Grove
Racine
Manitowoc
Fargo, N. D.
Port Washington
Milwaukee
Milwaukee
Muskegon, Mich.
Madison
Fond du Lac
Eau Claire
Columbus
Milwaukee
Menomonee Falls
Milwaukee
Juneau
Lancaster
Milwaukee
Springfield, Mo.
Soldiers' Grove
Madison
Madison
Sheboygan Falls
Hankow, China

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FIRST YEAR

Baker, John Sydney, B. A.
 Benson, John Cabot
 Boyce, Merton Vernal
 Brill, Herman Oswald
 Bunker, Eugene Francis
 Cady, Emil Charles
 Clark, Robert Peter
 Connor, Craig Prentice
 Derthick, Wilber Morris, Jr.
 Folge, Ottmar John
 Goggins, Hugh William
 Haddow, Winfred Griffin
 Holmes, Donald Safford
 Jenks, Frank

Augusta
Heron Lake, Minn.
Madison
Columbus
Woodstock, Ill.
Kilbourn
Elroy
Auburndale
Madison
Manitowoc
Grand Rapids
River Falls
Duluth, Minn.
Dodgeville

Johnson, William Newton	<i>Madison</i>
Jones, Milton Vaughn	<i>Ohlton</i>
Kearney, Thomas Matthew	<i>Racine</i>
Kerschesteiner, Mark Joseph, B. A.	<i>Jefferson</i>
Lockwood, Edward Harrison, B. A.	<i>Pera, Ind.</i>
Mahoney, Emmett Paul	<i>Viroqua</i>
Martin, Hal Roger	<i>Madison</i>
Miner, Oliver H.	<i>Madison</i>
O'Keefe, John Joseph	<i>Portage</i>
Parker, William Henry, B. A.	<i>Augusta, Ga.</i>
Rees, Reginald Leigh	<i>Hinckley, Ill.</i>
Roberts, John Archibald	<i>Columbus</i>
Skinner, Alexander Wilson	<i>Geneva, N. Y.</i>
Stafford, Harold Stanley	<i>Madison</i>
Stiles, Bennett Phelps	<i>Sparta</i>
Thomas, John Lawson Baldwin, Jr.	<i>Madison</i>
Toebaas, Oscar Theodore	<i>Iola</i>
Velte, Charles Henry	<i>Poy Sippi</i>
Warren, Rex Morris	<i>Sioux Falls, So. Dak.</i>
Whaley, Vilas Henry	<i>Benton</i>

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STUDENTS IN OTHER COLLEGES ELECTING LAW STUDIES

Bechtel, Leslie Andrew ls	<i>Butte Mont.</i>
Burgess, Kenneth Farwell ls	<i>Oshkosh</i>
Duffy, Francis Ryan ls	<i>Fond du Lac</i>
Fisher, Edward James ls	<i>Madison</i>
Hanchett, David Scott ls	<i>Chicago, Ill.</i>
Hoyt, Ralph Melvin ls	<i>Madison</i>
Jacobs, Herbert Edward ls	<i>Sawyer</i>
Luhman, George ls	<i>Belvidere, Ill.</i>
Meuer, William Joseph ls	<i>Madison</i>
Naffz, Carl Francis ls	<i>Madison</i>
Quinn, Lewis James ls	<i>Waterford</i>
Shannon, Frank John ls	<i>Oconomowoc</i>
Worthington, George Edmund, ls, mu	<i>Madison</i>
Zillmer, Raymond Theodore ls	<i>Milwaukee</i>

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UNCLASSIFIED*

Anderson, John Brown	<i>Plainfield, Ill.</i>
Andresen, Charles Adolph	<i>Medford</i>
Bacon, King Myron	<i>Artigo</i>
Beck, Linns John	<i>Jefferson</i>
Bergener, Charles Oliver	<i>Shullsburg</i>
Branyen, Leon Perry	<i>Hollywood, Calif.</i>
Byrne, Frank Patrick	<i>Bessemer, Mich.</i>
Cadigan, John Andrew	<i>Superior</i>
Crowns, Arthur John	<i>Nekoosa</i>
Crowns, George Henry	<i>Nekoosa</i>
Darrow, Joseph Daniel	<i>Argyle</i>

Dietrick, Rufus Samuel
 Eggum, Andrew J.
 Eldsmoe, Sever Bernard
 Everett, George Waite
 Fein, Alfred Erwin
 Ferguson, Hugh Munro
 Fletcher, Clark Robinson
 Frudden, Fred Alfred
 Griffin, Vaughn Irving
 Harshaw, Myron Turner
 Hooper, Frank Arnold
 Jones, John D., Jr.
 Jones, Mark Foulkes
 Josey, Jairus Anthony
 Justeson, Bird Marion
 Kelley, William Thomas
 Kempley, Chester Charles
 Luedke, Leo Charles
 McGeever, James Daniel
 McKinney, Frederick Harold
 Markus, Frank, Jr.
 Morse, Thomas Countryman
 Murphy, Peter James
 Puls, Charles Frank
 Reiser, Robert Mathias
 Rickert, Paul Morris
 Riley, Peter Francis
 Ritland, Owen
 Rohr, Lewis Walter
 Smith, Frederick Ansel
 Smith, Irving Winfred
 Strang, Clive Joseph
 Svacina, John Jacob
 Tait, Lloyd Bruce
 Thomas, John Dobson
 Timm, Walter Henry
 Zentner, Erwin Herbert

Black River Falls
Mt. Horeb
Greenwood
Alcandria, Minn.
Milwaukee
Oconto
Waukesha
Madison
Mason City, Iowa
Stevens Point
Crandon
Racine
Sparta
Augusta, Ga.
Augusta
Portage
Packwaukee
Milwaukee
Cuba
Butternut
Medford
Princeton
Chippewa Falls
Milwaukee
Madison
Bruce
Elroy
Elroy
Toledo, O.
Chippewa Falls
Iron Mountain, Mich.
Grantsburg
Rice Lake
Mason City, Ia.
Chicago, Ill.
Plymouth
Milwaukee

COLLEGE OF AGRICULTURE

LONG COURSE—SENIOR CLASS

Benkendorf, Gustav Henry	<i>Madison</i>
Charles, Edward Sanford	<i>Madison</i>
Cramton, Burton Lamont	<i>Madison</i>
Cunningham, Gilbert Cameron (<i>Scholar</i>)	<i>Ospringle, Canada</i>
Dacy, George Harold	<i>Woodstock</i>
Dudgeon, Sidney Ball	<i>Madison</i>
Dunnewald, Theodore John	<i>Madison</i>
Ernst, Claude B.	<i>Thompson, Ohio</i>
French, Vida Rachel	<i>Buffalo, N. Y.</i>

Gafke, Arthur Joseph
 Gastón, José
 Graber, Laurence Frederick
 Hickcox, Orren Irving
 Humphrey, Winnifred Electra
 Kuhlmann, Arthur Henry
 Le Clair, Carlos Arnie
 Lewis, Marshall
 Marshall, James Disraeli
 Matheson, Kenneth Jesse
 Mihills, Donald Ross
 Pengelly, Roy Leo
 Severson, Burns Oscar
 Sievers, Fred John
 Soriano, Oscar Sevilla
 Thompson, Albert Ludwig
 Tillitson, Frank Waite

Oregon
 Negros Occ., Silay, P. I.
 Mineral Point
 Spring Green
 Mayhew, Cal.
 Lowell
 Green Bay
 Milwaukee
 Madison
 Elkhorn
 Pond du Lac
 Madison
 Stoughton
 Madison
 Manila, P. I.
 Blair
 Madison

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JUNIOR CLASS

Anderson, Martin
 Anthon, Laues
 Axley, Walter
 Baer, Arthur Christopher
 Bean, Roy Perry
 Bergh, Otto Ingeman
 Blank, George August
 Bleeker, Irvin Benjamin
 Burke, Edwin Eugene
 Bush, Charles William
 Cairns, John Hunter
 Carnecross, Elmer Aeneas
 Carter, George Byron
 Christensen, Hans Gerhardt
 Clark, Warren William
 Doerschuk, John James
 Doty, Harry W.
 Glasspoole, James Edward
 Graham, John Cameron
 Graul, Edward John
 Hanson, Carl Hugo
 *Hayes, Edwin Hawley
 Hayes, Mark Webster
 Howe, William Canterbury
 Hulce, Ray Stillman
 Jackson, William Malcolm
 Jelinek, Benjamin
 Jewett, Norman Lee
 Johnson, Hugh Christian

River Falls
 Hammond, La.
 Cleveland
 West Bend
 De Soto
 Hendrum, Minn.
 Grafton
 Ackley, Iowa
 Waukesha
 Waupun
 Montello
 Lodi
 Madison
 La Crosse
 River Falls
 Shanesville, Ohio
 McAdison
 Mondovi
 Madison
 Independence
 Elk Mound
 Buffalo, N. Y.
 So. Kaukauna
 Boscobel
 Watervater
 Marinette
 Milwaukee
 Sparta
 Sheridan

* Died March 22, 1910.

Juve, Oscar	<i>Stoughton</i>
Leith, Benjamin Donald	<i>Van Dyne</i>
McConnell, Charles Fremont	<i>Dartington</i>
McNown, Mark Freeman	<i>Madison</i>
McNulty, James Bernard	<i>Areca</i>
Mathews, Lee Grande	<i>Brandon</i>
Maxwell, Ruth	<i>Chicago, Ill.</i>
Meyer, Alfred Henry	<i>Grafton</i>
Moll, John Edwin	<i>Madison</i>
Morrison, Frank Barron	<i>Marshfield</i>
Otis, Franklin Daniel	<i>Madison</i>
Porter, Joseph Kinnicutte Potter	<i>Evansville</i>
Post, Robert Lewis	<i>Madison</i>
Rauchenstein, Emil	<i>Rice Lake</i>
Richards, Griffith, Jr.	<i>Madison</i>
Sanders, Raymond Young	<i>Chicago, Ill.</i>
Schoenmann, Le Roy Adolph	<i>Madison</i>
Scholfeld, Harvey Haseltine	<i>Wausau</i>
Scott, Verner Ephraim	<i>Madison</i>
Smiley, Robert Flint	<i>Albany</i>
Smith, Harvey George	<i>Brandon</i>
Ullsperger, Herman Wenzl	<i>Algoma</i>
White, Hubert Draper	<i>Oak Park, Ill.</i>
Wied, Walter Evan	<i>Waupaca</i>

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SOPHOMORE CLASS

Bahr, Lawrence	<i>Spring Valley</i>
Bailey, Elbert Gladstone	<i>West Bend</i>
Baker, Harrie Albert	<i>Decorah, Iowa</i>
Banker, Paul Philip	<i>Fort Atkinson</i>
Beecroft, Albert Bouffler	<i>Madison</i>
Berg, Anthony	<i>Bloomer</i>
Bigford, Gifford Llewellyn	<i>Manawa</i>
Brown, Adrian Abbott	<i>Waterloo</i>
Bullis, Clifford Bentz	<i>Eau Claire</i>
Buser, Alfred Leo	<i>Madison</i>
Cárdenas, Francisco Marcos	<i>Saltillo, Coah, Mexico</i>
Collentine, Arthur O.	<i>Monroe</i>
Conlin, Bernard Henry, Jr.	<i>Wausau</i>
Cuff, Owens Patterson	<i>Hortonville</i>
Dieter, William Albert	<i>Montfort</i>
Drescher, Henry Adolph	<i>Sun Prairie</i>
Esh, Glen Albyn	<i>Spring Grove, Ill.</i>
Finner, Ewald Reinhard	<i>Dodge</i>
Foster, George Henry	<i>Evansville, Ill.</i>
Frost, Harold Guernsey	<i>Almond</i>
Gilman, Joseph Charles	<i>Racine</i>
Groover, William Aaron	<i>Statesboro, Ga.</i>
Groves, Asa Biehl	<i>Madison</i>
Haege, Fred Charles	<i>Madison</i>

Hart, Harry
 Henke, Louis Albert
 Hoppert, Martin John
 Hughes, Elmer Howard
 Hulburt, Clarence Hellings
 Ibsen Heman Lauritz
 Jaquith, Allen Fourestier
 Kadish, Leopold Halbert
 Kammlade, Stephen Girard
 Klumb, Hugo Gottfried Nicholas
 Lee, Peter Adolph Gehard
 Loos, Walter Martin
 Lovett, Carl Henry
 Mackmiller, William Frederick
 Magee, George Edmond
 Moore, George McMurtrie
 Moore, Raymond Judson
 Nelson, Oran Milton
 Newcomb, Henry Sage
 Noer, Oyvind Juul
 Parsons, Edgar
 Pflughoeft, Henry Andrew
 Polley, Earl Arthur
 Portman, Andrew Nelson
 Reinking, Otto August
 Reynolds, Ralph Elmer
 Rouzer, Paul Charles
 Schreiner, Alf
 Scoville, Walter Amasa
 Seaton, Edward Arthur
 Stangel, Otto Anton
 Sutton, Luther Francis
 Sweetman, Herbert Ray
 Tearse, William Pliny, Jr.
 Thompson, Arthur George
 Thompson, Willard Chandler
 Totman, Claire Carleton
 Utgard, Myron Harrison
 Warner, Raymond Earl
 Warren, David Mack
 Wilson, Lewis Kemper
 Zander, Arthur George

Humbird
 Lowell
 Sheloygan
 Rewey
 Wauwatosa
 Chicago, Ill.
 Elizabeth, N. J.
 Milwaukee
 Bangor
 Kewaskum
 Deerfield
 Elkhart Lake
 Duluth, Minn.
 Ashland
 Shawano
 Jackson, Minn.
 Madison
 La Crosse
 Pepin
 Stoughton
 Cleveland, O.
 Algoma
 Madison
 Chicago, Ill.
 Madison
 Lodi
 Madison
 Westby
 Riverside, Ill.
 Minot, N. D.
 Tisch Mills
 Madison
 Indianapolis, Ind.
 Winona, Minn.
 Sun Prairie
 Sun Prairie
 Lancaster
 New Richmond
 Windsor
 Chicago, Ill.
 Milwaukee
 Milwaukee

FRESHMAN CLASS

Alcorn, James Dunn
 Allen, Ruben Christ
 Amodt, Marcus
 Babcock, Edward Andrew
 Babcock, Frank Gordon
 Baird, William Lockhart

Stevens Point
 Montfort
 Viroqua
 Madison
 Kascta, Minn.
 Waukesha

Barker, Roy Thomas
 Barrand, Chester Arthur
 Beattie, James Grey
 Bieri, Russell Bernhard
 Bischoff, Alvin Louis
 Bratton, Ocier Simpson
 Bush, George Allen
 Chloupek, Eugene Joseph
 Danielson, Norman Jeremiah
 Daubner, Neal Frederick
 Dillon, Harry
 Doerr, Harry
 Dopke, Walter Albert
 Doyle, William Ester
 Eastman, Harley Hanford
 Erikson, Clarence
 Fagerland, Johan Luvin
 Fender, Robert Alexander
 Galbraith, Victor Arrol
 Garland, John Jefferson
 Gear, Hugh Leroy
 Greenslit, Ezra May
 Hadsell, Duane Whitney
 Hammersley, Ralph Walter
 Harris, John Coman
 Healey, Claude Sprague
 Hoeffel, Merrill Joseph
 Huser, Frank Edward
 Jenkins, Floyd
 Jennings, John Robert
 Ketter, Walter Conrad Carl
 Keys, Charles Glen
 Kilpatrick, Elmer James
 Kimball, Charles Henry
 Lamson, Robert Austin
 Lane, Orie James
 Levin, Isidore
 Levy, Edmond Gustave
 Lowe, James Gregory
 Lyford, Charles Conover
 McHugh, James Francis
 McKirnan, Robert Noble
 Martin, Jay
 Meyer, Werner Eugene
 Michelstetter, Stanley
 Moore, George Elkington
 Morgenroth, Alvin Stanford
 Murray, Reid Fred
 Nelson, Clarence A.
 Nelson, Raymond Francis

Oconomowoc
Sturgeon Bay
Arlington
Knapp
Madison
Little Rock, Ark.
Louisville, Ky.
Manitowoc
Madison
Mazomanie
Mendota
Minneapolis, Minn.
Milwaukee
Cobb
Plymouth
Stoughton
Stoughton
Waukesha
Janesville
Wellington, Kans.
Menasha
Belvidere, Ill.
Pelham, N. Y.
Madison
Waukesha
Elgin, Ill.
Green Bay
Cumberland
Bangor
Pigeon Falls
Milwaukee
Richland Center
Belmont
Oshkosh
Sonyea, N. Y.
Hixton
Chicago, Ill.
Milwaukee
River Falls
Oak Park, Ill.
Aberdeen, S. D.
Sturgeon Bay
Bayley
Kilbourn
Milwaukee
Madison
White Plains, N. Y.
Manawa
Viroqua
Corliss

Onsrud, Anton Edward
 Opie, Howard Perry
 Opstedal, Anthon Johannes
 Parker, Samuel Alexander
 Peltier, Victor Michel
 Perry, Donald Strong
 Pinkerton, Fred Sylvester
 Post, Clinton Blaine
 Potter, George Frederick
 Powell, Thomas Charles
 Pratt, William Dudley, Jr.
 Schmutzer, Anton Wencelaus
 Schuster, Raymond Herman
 Smith, Eldon Jerome
 Solum, Karl John
 Stallard, John Earl
 Steppler, Joseph
 Stern, William Frank
 Sullivan, Dan Thomas
 Thompson, Carl
 Tope, Oliver Earle
 Turnbull, Alan James
 Wade, Harold Logan
 Wahl, Richard Webster
 Walz, John Martin, Jr.
 Webbe, Albion Scotson
 West, Calvin Parker
 Wilcox, Frederick Seacord
 Wilcox, Raymond Boorman
 Woo, Kok San
 Wright, Frank Lloyd, Jr.

Stoughton
 Warren, Ill.
 De Forest
 Meyville
 San Francisco, Cal.
 Chicago, Ill.
 Waupaca
 Oconto
 Madison
 Reedsburg
 Indianapolis, Ind.
 Antigo
 Ladé
 Taylor
 Merrill
 Patchild
 Highland
 New London
 Fort Atkinson
 Curtiss
 Oak Park, Ill.
 Glencoe, Ill.
 Oregon, Ill.
 Chicago, Ill.
 Freeport, Ill.
 Chicago, Ill.
 Waupaca
 Elgin, Ill.
 Madison
 Canton, China
 Oak Park, Ill.

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ADULT SPECIALS

Baker, Raymond
 Brann, John William
 Breyspraak, Victor Clarence
 Haack, Theophil Theodore
 Haas, George Herman
 Hughes, Clarence Orville
 Kennedy, Francis Stephens
 Jolivet, Bert Alexander
 Lieber, Otto Herman
 Martin, Elmer Willard
 Moh, Hsiang Yueh
 Morris, George Charles
 Oosterhouse, John Jacob
 Palit, Barendra Kumar
 Peters, John William
 Philipp, Walter William

Rewey
 Bailey's Harbor
 Evanston, Ill.
 Milwaukee
 Meriden, Conn.
 Rewey
 Milwaukee
 La Crosse
 Indianapolis, Ind.
 Catawba
 Shanghai, China
 Madison
 Waldo
 Bengal, India
 Lake Beulah
 Milwaukee

Rafferty, Agnes Beatrice
Robinson, Temple Moss
Schmidt, Carl Alfred
Sikhart, Joseph George
Weir, James Henry

Token Creek
Kansas City, Mo.
Dubuque, Iowa
Muscoda
Mukwonago

—21

MIDDLE COURSE—SECOND YEAR

Ainslie, James Elliott
Beach, Paul Mell
Beyer, George Kilian
Billings, Edwin Sidell
Bossard, Eugene
Boston, Willis J.
Boyd, Merritt Edwin
Canavan, John Patrick
Firth, John Malcolm
Harper, Hugh Allen
Harrington, Myron Hozia
Laird, James Alexander
Lunde, Paul Edward
Muck, Carl Seifert
Mueller, Walter Earl
Newell, Howard Heg
Palfrey, John Robert
Palmer, Glenn Alcott
Peterson, Fred Ronald
Piffner, James Meehan
Potter, Byron Sears
Raub, Clyde Webster
Reineking, Adolph G.
Swart, Luther Witt

Beloit
Wittenberg
Sturgeon Bay
Neillsville
Bangor
Stevens Point
Madison
Appleton
South Orange, N. J.
Madison
Waupaca
Appleton
Chicago, Ill.
Jefferson
La Crosse
Burlington
Omro
Brodhead
Chicago, Ill.
Stevens Point
Madison
Chalmers
Appleton
Plymouth

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FIRST YEAR

Baird, Robert Dixon
Beeson, Isaac William
Belz, Frank Arthur
Belz, George Andrew
Boothby, Earl Levin
Bradley, Bruce Foster
Brophy, Allen Olmsted
Burton, Charles Frederick, Jr.
Conkey, Charles DeWitt, Jr.
Curtin, William Edwin
Davidson, David
Dreutzer, Cedric Blaine
Drummond, David Myron, Jr.
Dunwiddie, Walter Rockwood
Dwight, Oren Lyman
Elvehjem, Elmer Gerhard

Evanston, Ill.
Montpelier, Ind.
Visalia, Cal.
Visalia, Cal.
Savanna, Ill.
Toledo, O.
Elgin, Ill.
Billings, Mont.
Superior
Madison
Westby
Sturgeon Bay
Eau Claire
Delavan
Milwaukee
McFarland

Hornbeck, Brewster Beaneau
 Jacobs, Wynne H.
 Langum, Torlief Nicholas
 Langworthy, Earl Elmer
 Laraway, Fred Tait
 Oviatt, Neita
 Pierce, William Oliver
 Preston, William N.
 Reid, William Albert
 Robinson, Miles Albert
 Slagsvol, Oscar Trygve
 Smith, Parker Merritt
 Stone, Gilbert Wright
 Templeton, Kenneth Stuart
 Thomas, Hampton Hiram
 Wagner, Perry Shumway
 Williams, Newell Marcius
 Yates, Willard Wilson
 Zahorick, Anton John

Elgin, Ill.
Forest City, Iowa
Eau Claire
Edgerton
Joliet, Ill.
Oshkosh
River Falls
Juda
Terrevent, N. J.
Lake Geneva
Eau Claire
Tomahawk
Chicago, Ill.
Chicago, Ill.
Eau Claire
Green Bay
Superior
Burnett
Kewaunee

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ADULT SPECIALS

Bennett, Lewis Corder
 Bomberger, Amos Spayd
 Clark, Raymond Chester
 Curtin, Frederick John
 Dahlberg, Arnold Orlando
 Dixon, George Hall
 Gonia, Thomas Roy
 McDonald, William Albert
 McGonagale, Joseph Sargent
 Nissler, Chris William
 Springer, Walter William
 Thom, Carl
 Watrud, Hjalmar Oliver
 Watson, Peter Wesley
 Whitnall, George Gordan

Falmouth, England
Modisto, Cal.
Meridian
London, England
Lodysmith
W Bloomfield, N. Y.
Mellen
Menomonie
Duluth, Minn.
Rutle, Mont.
Chicago, Ill.
Watertown
Blanchardville
Chicago, Ill.
Milwaukee

—15

Home Economics

Boll, Fern Esther t c
 Brown, Hazel Bernice
 Buell, Nora t c
 Bunnell, Mary Martha Wallace
 Corse, Marian Mina
 Dahm, Anna Margaret
 Dohmen, Anita Louise t c
 Ellefson, Elsie Lucretia
 Fess, Madeline
 Fess, Marie Leone t c
 Fryette, Evangeline

<i>Rice Lake</i>	Junior
<i>Minneapolis, Minn.</i>	Freshman
<i>Burlington</i>	Junior
<i>Grand Rapids, Mich.</i>	Sophomore
<i>Racine</i>	Freshman
<i>McGregor, Iowa</i>	Freshman
<i>Milwaukee</i>	Sophomore
<i>Madison</i>	Freshman
<i>Madison</i>	Freshman
<i>Madison</i>	Junior
<i>Madison</i>	Sophomore

Gibson, Gladys Carolyn	<i>Grand Rapids, Mich.</i>	Freshman
Gray, Hazel Marie	<i>Madison</i>	Freshman
Harrison, Helen	<i>Chicago, Ill.</i>	Freshman
Henderson, Marguerite Anna	<i>Madison</i>	Freshman
Howe, Grace Carrier t c	<i>Boscobel</i>	Senior
Jensen, Evelyn Harriet	<i>Madison</i>	Freshman
Johnson, Nan Dorette	<i>Calumet, Mich.</i>	Freshman
Kelly, Christmas Mary	<i>Milwaukee</i>	Senior
Ketchum, Maud Ella	<i>Madison</i>	Freshman
Kuhns, Clarissa Augusta t c	<i>Madison</i>	Junior
Lloyd Jones, Alice	<i>Hillside</i>	Sophomore
Manning, Hazel	<i>Madison</i>	Freshman
Mead, Hazel Marguerite	<i>Madison</i>	Junior
Morris, Lulu	<i>Dodgeville</i>	Freshman
Mutchler, Vera Virginia t c	<i>Madison</i>	Junior
Osborne, Eunice Elizabeth	<i>Madison</i>	Freshman
Patton, Frances Caroline	<i>Oak Park, Ill.</i>	Freshman
Perry, Amy Leona	<i>Evansville</i>	Freshman
Pfund, Anne t c	<i>Madison</i>	Junior
Piper, Margaret Amelia	<i>Madison</i>	Sophomore
Raymond, Grace Marie	<i>Chillicothe, Ill.</i>	Sophomore
Reese, Josephine	<i>Chicago, Ill.</i>	Freshman
Richards, Anna	<i>Madison</i>	Sophomore
Roloff, Norma Rosetta	<i>Madison</i>	Freshman
Runge, Elsie	<i>Madison</i>	Freshman
Scovill, Luella Mae	<i>Rockford, Ill.</i>	Sophomore
Stark, Saidee Ethel	<i>Sun Prairie</i>	Freshman
Stewart, Laura Miriam	<i>Madison</i>	Sophomore
Sutherland, Sarah Augusta t c	<i>Madison</i>	Senior
Swarthout, Susie mu	<i>La Crosse</i>	Junior
Swenson, Helen Katrina mu	<i>Madison</i>	Freshman
Turner, Annabell t c	<i>Milwaukee</i>	Junior
Vesey, Sallie Waterhouse	<i>Fort Wayne, Ind.</i>	Sophomore
Wilkinson, Lottie	<i>Madison</i>	Freshman
Williams, Anna Grace	<i>Gettysburg, S. D.</i>	Freshman
Yorgey, Roxie Marie t c	<i>Horicon</i>	Junior

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ADULT SPECIALS

Blankensee Hedwig Louise	<i>Madison</i>	Freshman
Buckstaff, Florence Riply	<i>Oshkosh</i>	Freshman
Calvin, Charlotte Margaret	<i>Madison</i>	Freshman
Frederickson, Lorraine Elizabeth mu	<i>Madison</i>	Freshman
Wall, Kathryn Alice Downing	<i>Downing</i>	Freshman

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SUMMER SESSION OF 1909

LETTERS AND SCIENCE

Graduates

Ackermann, Adolf	<i>New Ulm, Minn.</i>
M. A., University of Wisconsin.	
Allen, Leroy	<i>Cedarville, O.</i>
Ph. B., University of Wooster.	
Allen, Ruth Florence	<i>Sturgeon Bay.</i>
M. A., University of Wisconsin.	
Allstrand, Mae Belle	<i>Carroll, Ia.</i>
B. A., University of Iowa.	
†Anderson, William Tait	<i>Sturgeon Bay.</i>
Ph. B., University of Wisconsin.	
Arnos, Edward Martin	<i>Archbald, O.</i>
M. A., Clark University.	
Atkinson, Helen Marie	<i>Madison.</i>
B. A., University of Illinois.	
Austin, Charles Burgess, g	<i>Madison.</i>
M. A., Indiana University.	
†Austin, Frederick Pasqua	<i>Leadville, Colo.</i>
Ph. B., University of Colorado.	
Aylsworth, Leon Emmons	<i>Lincoln, Neb.</i>
M. A., University of Wisconsin.	
Bacon, Justin Homer	<i>Kalamazoo, Mich.</i>
M. A., Brown University.	
Bandt, Helmuth Frederick Charles, g	<i>Sheboygan.</i>
B. S., Valparaiso University.	
Barber, William Harley	<i>Ripon.</i>
B. S., University of Wisconsin.	
Barnes, Robert James	<i>Menasha.</i>
B. A., Lawrence College.	
Bascom, Fred Locke	<i>Bound Brook, N. J.</i>
B. L., Rutgers College.	
Fassett, Harry Kendall, g	<i>Madison.</i>
B. S., Columbia University.	
†Baugh, William Edward	<i>Indianapolis, Ind.</i>
B. A., Howard University.	
Benner, Raymond C.	<i>Tucson, Ariz.</i>
M. A., University of Wisconsin.	
Berry, Thomas Richard	<i>Glendale, O.</i>
M. S., Wilmington College.	
†Bishop, Charles Clyde	<i>Dodgeville.</i>
B. A., University of Wisconsin.	

†Advanced course for the training of teachers.

Bishop, John Bunyan	<i>Ft. Worth, Tex.</i>
M. A., Southwestern University.	
Bishop, Mabel Marietta	<i>Brazil, Ind.</i>
M. A., De Pauw University.	
Blakeman, Edward William	<i>Madison.</i>
B. A., Lawrence College.	
Blieferticht, Edmund Robert	<i>Watertown.</i>
B. A., Northwestern University (Watertown).	
Bliss, Myrtie Rundlett	<i>Richland Center.</i>
B. S., University of Wisconsin.	
†Bowen, Rose Andrews	<i>Greenwood.</i>
B. A., University of Wisconsin.	
Boyd, Clarence Eugene	<i>Spartanburg, S. C.</i>
B. A., Wofford College.	
Brandan, Justus Henry	<i>Dubuque, Ia.</i>
B. A., German Presbyterian College.	
Brandenburg, Ellen Klapp	<i>Washington, D. C.</i>
M. A., Columbia University.	
Bridgman, Robert White	<i>Madison.</i>
B. A., University of Wisconsin.	
Brown, Alma	<i>Rockford, Ill.</i>
B. A., University of Michigan.	
Brown, Ruth Wentworth	<i>Los Angeles, Cal.</i>
B. A., Leland Stanford Junior University.	
†Brown, Winifred Q.	<i>Hamilton, C.</i>
B. S., Valparaiso University.	
Bruner, Lena Celestus	<i>Franklin, Ind.</i>
B. S., Franklin College.	
Buechel, Frederick Anthony	<i>Littleport, Ia.</i>
Ph. E., University of Wisconsin.	
Byrne, Eugene Hugh, g	<i>Baraboo.</i>
B. L., University of Wisconsin.	
Campbell, Mary	<i>Milwaukee.</i>
M. A., University of Wisconsin.	
Cannon, Lee Edwin	<i>Pittsfield, Ill.</i>
B. A., Eureka College.	
Cárdenas, Federico Felipe, g	<i>Saltillo, Coah, Mex.</i>
M. S., University of Wisconsin.	
Carey, Alice Matilda	<i>Madison.</i>
B. A., University of Wisconsin.	
Carlton, Ernest Conrad	<i>St. Peter, Minn.</i>
Ph. D., University of Minnesota.	
Carpenter, Caroline Wofford	<i>Nashville, Tenn.</i>
M. A., Vanderbilt University.	
Carr, Lucina Langworthy, m	<i>Madison.</i>
B. A., University of Wisconsin.	
Carr, Mrs. Ralph Howard	<i>Emporia, Kan.</i>
Buena Vista College.	

†Advanced course for the training of teachers.

†Carr, Ralph Howard	Emporia, Kan.
M. S., Wooster University.	
Cate, Jo Lana Belle	Auroraville.
B. A., Ripon College.	
Cawthon, William Stanmore	Pensacola, Fla.
B. A., University of Chicago.	
Chambers, Lucy Eleanor	Corsicana, Tex.
Ph. B., University of Chicago.	
Chandler, Henry Alfred Ernest	Tucson, Ariz.
B. S., Northwestern University.	
Chaney, George Arthur, g	Madison.
M. S., Highland Park College.	
Chase, Wayland Johnson	Madison.
M. A., Brown University.	
Chen, Kwang Pu	Chinkiang, China.
B. S., University of Pennsylvania.	
Clark, John Maurice	Colorado Springs, Colo.
M. A., Columbia University.	
Clark, Myrtes Estella	Mayville.
B. L., University of Wisconsin.	
Clow, Frederick Redman	Oshkosh.
Ph. D., Harvard University.	
Craigo, Ralph Thurman	Madison.
B. S., University of Wisconsin.	
Dalton, Berenice Mary	Chippewa Falls.
B. A., St. Clara College.	
Davies, Autumn	Omaha, Neb.
M. A., University of Nebraska.	
†Davies, George Reginald	Amenia, N. D.
M. A., Des Moines College.	
Davis, Mary Frances	Sutherland, Ia.
B. L., University of California.	
Davis, Thomas Rich	Dollar Bay, Mich.
B. A., Olivet College.	
Davison, Walter Bert	Clear Lake.
E. A., University of Wisconsin.	
Deach, Ivan	Peoria, Ill.
B. A., Leland Stanford Junior University.	
Dickerson, Luma May	Upland, Ind.
B. A., Indiana University.	
Dietz, Arthur	Madison.
B. A., University of Wisconsin.	
Dinsmore, Susan Bell	Eugene, Ore.
M. A., University of Nebraska.	
Doan, Edna	Amo, Ind.
B. A., Earlham College.	
Dodd, Minnie Lee	Louisville, Ky.
B. A., University of Wisconsin.	

†Advanced course for the training of teachers.

Donaldson, Jean Watt B. S., Columbia University.	McGregor, Ia.
Doyle, James Harold B. S., Marion College.	Columbus, Mont.
Drew, David Abbott M. A., Lawrence College.	Baraboo.
Duff, William B. M. A., Columbia University.	La Grange, Ind.
Duncalf, Fred B. A., Beloit College.	Lancaster.
Dunn, Hubert Fairleigh E. A., William Jewell College.	St. Joseph, Mo.
Dunton, Florence Elizabeth B. A., Mount Holyoke College.	Belfast, Me.
Du Shane, Donald B. S., Hanover College.	South Bend, Ind.
Eaton, Durward Leslie M. A., University of Colorado.	Liberty, Ind.
Eddy, Ralph Lynn B. S., Beloit College.	Rockton, Ill.
Elliott, Howard Martin B. A., Olivet College.	Butternut.
Ellis, Alta Grace Ph. B., Oberlin College.	West Chester, Pa.
Emery, William Thomas B. S., Beloit College.	La Crosse.
Erb, Elizabeth Adele Sophia E. A., Lawrence College.	Appleton.
Erwin, Edith Josephine B. A., University of Wisconsin.	Milwaukee.
Evert, Karl B. A., University of Wisconsin.	Merrillan.
Farseth, Carl B. A., St. Olaf College.	Amherst Junction.
Feise, Ernst Ph. D., University of Leipzig.	Madison.
Findlay, Albion Garfield B. A., University of Wisconsin.	West Salem.
Fisher, Martin Luther B. S., Purdue University.	La Fayette, Ind.
Forsythe, William Elmer, g M. S., University of Wisconsin.	Madison.
Fromm, Arthur George Ph. B., University of Wisconsin.	Hamburg.
Gaebler, Hans David, g M. A., University of Wisconsin.	Watertown.
Garlock, Lewis Franklin M. D., Rush Medical College.	Racine.

Garwood, Lynn Eugene	<i>Piqua, O.</i>
B. A., Otterbein University.	
Gilbert, Edward Martinus	<i>Superior.</i>
Ph. B., University of Wisconsin.	
Gill, Mrs. Margaret S.	<i>Oak Park, Ill.</i>
Ph. B., University of Wisconsin.	
Gohlke, George Henry	<i>Milwaukee.</i>
B. A., University of Wisconsin.	
Gordon, John Harold, g	<i>Columbia, Mo.</i>
B. S. A., University of Missouri.	
Graber, John Francis	<i>Milwaukee.</i>
Ph. E., University of Wisconsin.	
Griffin, James Sheldon	<i>Cleveland, O.</i>
M. A., University of Wisconsin.	
Grimes, Nathan Cesna, g	<i>Madison.</i>
B. A., University of Michigan.	
Groves, Regina Eunice	<i>Madison.</i>
B. A., University of Wisconsin.	
Gunther, Otto	<i>Sheboygan.</i>
B. S., University of Wisconsin.	
Gunther, Theodore John	<i>Sheboygan.</i>
B. S., University of Wisconsin.	
Haberstich, Felicitas Minna, g	<i>Milwaukee.</i>
M. A., Coates College.	
Haight, Harry William	<i>Mendota, Ill.</i>
B. A., Princeton University.	
Hall, Edgar Albert, g	<i>Madison.</i>
M. A., University of Wisconsin.	
Hamilton, Theodosia Estelle	<i>Indianola, Ia.</i>
B. A., Simpson College.	
Hannan, Katherine	<i>Milwaukee.</i>
Ph. B., University of Chicago.	
Hanson, Sven Andrew	<i>Meridian, Tex.</i>
B. A., Luther College.	
Harris, Thomas Luther, g	<i>Waverly, Ill.</i>
M. A., Ohio State University.	
†Hartig, Mary Louise	<i>Ferndale, N. Y.</i>
B. A., Colorado College.	
Hatch, Elizabeth A.,	<i>La Moille, Mtnn.</i>
B. A., University of Minnesota.	
Hawkins, Horatio Bates	<i>Madison.</i>
E. A., University of Wisconsin.	
Hayden, Grace Mae	<i>Sun Prairie.</i>
B. A., University of Wisconsin.	
†Hayes, George Lewis	<i>Indianapolis, Ind.</i>
B. A., Colgate University.	
Heyward, Aaron	<i>Park River, N. D.</i>
Ph. B., University of Wisconsin.	

†Advanced course for the training of teachers.

Hill, Charles Warren, g	Madison.
M. A., University of Wisconsin.	
Hill, George Bradbury	Milwaukee.
B. S. A., University of Wisconsin.	
Hill, Howard Copeland	Highland Park, Ill.
B. A., Indiana University.	
Hobbs, Jane Elizabeth	Washington, Pa.
Ph. B., Grove City College.	
Hockett, Homer C.	Columbus, O.
B. L., University of Wisconsin.	
Hodge, Bessie	Elkton, S. D.
B. A., Dakota Wesleyan University.	
†Hodge, Willard Wellington	Waunakee.
B. A., Ripon College.	
Hodgson, Roberta	Athens, Ga.
E. S., Columbia University.	
Holah, Carolyn Gestina	Baraboo.
B. L., University of Wisconsin.	
†Homburg, Frederick	Cincinnati, O.
M. A., University of Wisconsin.	
Hooper, Frank Finley	Chattanooga, Tenn.
B. A., University of Chattanooga.	
Hough, Helen Dexter	New York, N. Y.
B. A., Woman's College of Baltimore.	
Hunsaker, Andrew Franklin, g	Cobden, Ill.
M. A., University of Illinois.	
Irish, Elizabeth Hibbard	Eleva.
B. A., Milwaukee College.	
Jahr, Charles Anton	Middleton.
Ph. B., University of Wisconsin.	
James, Emma Meserve	Chicago, Ill.
B. A., Northwestern University.	
Jans, Harm	Dubuque, Ia.
B. A., German Presbyterian College.	
†Johansson, Emanuel Aaron	Ockello, Sweden.
B. A., Bethany College.	
Johnson, Arden Richard	Stoughton.
M. S., University of Wisconsin.	
Johnson, Lawrence C.	Brandon.
B. A., Lawrence College.	
Jones, Albert Edward	Lena, Ill.
B. A., University of Illinois.	
†Jones, Gwendolyn Gaynor	Madison.
B. A., University of Wisconsin.	
Jones, Ida Isabella	Plymouth.
B. A., University of Wisconsin.	
Jordan, John Henry, g	Onalaska.
Ph. B., University of Wisconsin.	

†Advanced course for the training of teachers.

Kasten, Marie	<i>Milwaukee.</i>
B. A., University of Wisconsin.	
Kemphorn, William Bismarck	<i>Platteville.</i>
Ph. B., University of Wisconsin.	
Kenyon, Elizabeth Watson	<i>Seminary Park, Cal.</i>
M. A., Brown University.	
Ketcham, Alice May	<i>Plainville.</i>
Ph. B., University of Wisconsin.	
Ketcham, Ray Newton	<i>Waupun.</i>
Ph. B., Lawrence College.	
Kiekhoefer, William Herman	<i>Milwaukee.</i>
Ph. B., Northwestern College.	
Killian, Edward Bassett	<i>Leadville, Colo.</i>
Ph. B., University of Michigan.	
Kirshman, John Emmett	<i>Madison.</i>
Ph. M., Syracuse University.	
Kissling, Arthur Charles	<i>Milwaukee.</i>
B. A., University of Wisconsin.	
Klepinger, Howard Albertus	<i>Eaton, O.</i>
B. A., Earlham College.	
†Kline, Aaron	<i>La Porte, Ind.</i>
B. A., Indiana University.	
Kline, Daisy	<i>Upland, Ind.</i>
B. A., Indiana University.	
†Kling, Emil A.,	<i>Donnelly, Minn.</i>
B. S., Carleton College.	
Klingberg, Frank Joseph	<i>Dillon, Kan.</i>
M. A., Yale University.	
†Klinkhammer, Susan Catherine	<i>Cassville.</i>
Ph. B., University of Wisconsin.	
Klopsch, Mathilda Zwicker	<i>Peoria, Ill.</i>
E. A., Indiana University.	
Klopsch, Otto Paul	<i>Peoria, Ill.</i>
M. A., Indiana University.	
†Klotz, Ralph Quad	<i>Madison.</i>
B. A., University of Wisconsin.	
Krauskopf, Francis Craig	<i>Madison.</i>
M. A., University of Wisconsin.	
Krey, August Charles, g	<i>Milwaukee.</i>
M. A., University of Wisconsin.	
Krieger, Herbert	<i>Burlington, Ia.</i>
M. A., University of Iowa.	
Kunerth, William	<i>Ames, Ia.</i>
B. A., University of Wisconsin.	
Lantis, Lee Ora	<i>Columbus, O.</i>
M. A., Miami University.	
Lantzer, Albert Franklin	<i>Marion, O.</i>
B. A., Ohio Northern University.	

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Lewis, Anna Bunger B. A., Indiana University.	<i>Bloomington, Ind.</i>
Liessmann, Alma Louise Ph. B., University of Wisconsin.	<i>Reedsburg.</i>
Linn, Louis Faulger Ph. B., Upper Iowa University.	<i>Kenmore, N. D.</i>
Losse, Herbert Alfred B. A., University of Wisconsin.	<i>Milwaukee.</i>
†Lucas, Sally Mae B. L., University of Wisconsin.	<i>Brodhead.</i>
Lutman, Benjamin Franklin B. A., University of Missouri.	<i>Joplin, Mo.</i>
McAllister, Frederick, g M. A., Beloit College.	<i>Davison, Mich.</i>
McBride, Russell Smith B. S., University of Minnesota.	<i>Minneapolis, Minn.</i>
McCauley, George Vest, g B. S., Northwestern University.	<i>Perryville, Mo.</i>
McClintic, Clifton F. B. A., Randolph-Macon College.	<i>Fairbault, Minn.</i>
McCordic, Ada May B. A., Zion College.	<i>Zion City, Ill.</i>
†McDaniel, Moses B. A., University of Wisconsin.	<i>Brooklyn, Ind.</i>
McEvoy, Sarah Aleta B. A., Rockford College.	<i>Rockford, Ill.</i>
McMyler, Howard Thomas B. A., Western Reserve University.	<i>Warrensville, O.</i>
Maher, Olive Dorothy B. A., St. Clara College.	<i>Ft. Dodge, Ia.</i>
Marker, Albert Washington Ph. B., Northwestern College.	<i>Andrews, Ind.</i>
Martens, Henry Christoph M. A., University of Wisconsin.	<i>Milwaukee.</i>
Mashek, Anna Magdalene, g B. A., University of Wisconsin.	<i>La Crosse.</i>
Mathews, Ella Annetta B. A., University of Michigan.	<i>La Crosse.</i>
Melby, Elizabeth B. A., University of Wisconsin.	<i>Merrillan.</i>
Melcher, Henry Alberto Ph. B., University of Wisconsin.	<i>Delava.</i>
Melcher, Henry Alberto B. S., Iowa State College.	<i>Delavan.</i>
Melhus, Irving E., g E. L., University of Wisconsin.	<i>Madison.</i>
Mevig, Andrew Mork B. A., Luther College.	<i>Lake Park, Minn.</i>

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Meyer, Jerome	Uniontown, Ala.
B. S., University of Alabama.	
Moffatt, Agnes Catherine	Mechanicville, N. Y.
B. A., Carleton College.	
Mohr, Esther Cook	Pontiac, Ill.
B. A., University of Illinois.	
†Murphy, Edna Pierce	Pipestone, Minn.
B. A., Gustavus Adolphus College.	
†Murray, Julia Aloysius	Madison.
B. A., St. Clara College.	
Myers, Jesse J.	Lansing, Mich.
B. S., University of Illinois.	
Nardin, Charles Carloman	Hicksville, O.
B. S., Buchtel College.	
Nelson, Carl Ferdinand	Rockford, Ill.
B. A., University of Wisconsin.	
Nelson, Oliver Otto, g	Madison.
B. A., University of Wisconsin.	
Olsen, Nils Andreas	Herscher, Ill.
M. A., University of Wisconsin.	
Otto, William August	Milwaukee.
E. A., University of Michigan.	
Peak, George Victor	Dallas, Texas.
M. A., Harvard University.	
Pelton, Edith Lovina	Madison.
B. A., University of Wisconsin.	
Perkins, Eunice Alma	Princeton, Ill.
B. A., Pennsylvania College.	
Perley, Mary Elizabeth	Fargo, N. D.
B. A., University of Washington.	
Peterson, Aslak Samuel	Orfordville.
B. A., Luther College.	
Peterson, Roy Merle	Monticello, Ia
B. A., Coe College.	
Phillips, Ruth Mary	Madison.
B. A., University of Wisconsin.	
Plagge, Herbert John	Barrington, Ill.
B. S., Northwestern University.	
Polzin, Benjamin Albert	Madison.
Ph. B., University of Wisconsin.	
Post, Martin Hayward, Jr.	St. Louis, Mo.
B. A., Amherst College.	
Potter, Paul David	Madison.
B. A., University of Wisconsin.	
Preuss, Bertha Helen	Shawano.
Ph. B., University of Wisconsin.	
Price, Lawrence Marsden	Madison.
M. A., Tufts College.	

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Purin, Charles Maltador	<i>Milwaukee.</i>
M. A., University of Wisconsin.	
Radford, Lawrence	<i>Eureka, Ill.</i>
E. A., Eureka College.	
Rakow, Bertha Marie, g	<i>Brandon.</i>
B. A., University of Wisconsin.	
Rasmussen, Allie Nora	<i>Hammond.</i>
E. A., Lawrence College.	
Rasmussen, Peter, g	<i>Webster, Minn.</i>
B. S., Carleton College.	
Ray, George Rankin	<i>Waukesha.</i>
B. A., University of Wisconsin.	
Read, John William	<i>Columbia, Mo.</i>
M. S. A., University of Missouri.	
Read, Orlan Bertrand, g	<i>Madison.</i>
Ph. B., Hillsdale College.	
Reber, Mrs. Louis Ehrhart	<i>Madison.</i>
B. S., Pennsylvania State College.	
Reid, Harry Craven	<i>Pendleton, Ind.</i>
B. A., Indiana University.	
Reynolds, Everett Adelbert	<i>Richmond, Ill.</i>
B. L., University of Wisconsin.	
Riner, John Alden	<i>Freeport, Ill.</i>
B. S., Beloit College.	
†Robbins, Francis Louis	<i>Fayette, O.</i>
Ph. B., Upper Iowa University.	
Rodgers, Thomas Gladstone	<i>Roswell, N. M.</i>
E. A., University of Tennessee.	
Rogers, Mabel Grace	<i>Appleton.</i>
Ph. B., Lawrence College.	
Rosenberger, Lucile	<i>Oskaloosa, Ia.</i>
M. A., Pennsylvania College.	
Rounsevell, Bessie Lucy	<i>River Falls.</i>
Ph. B., University of Wisconsin.	
Russell, Elmer Beecher	<i>Burlington, Vt.</i>
Ph. B., University of Vermont.	
Rutte, Joseph Walter, g	<i>Shawano.</i>
B. A., University of Wisconsin.	
St. Peter, Louis Urban	<i>Oconto.</i>
Ph. B., University of Wisconsin.	
Sarotell, James Herbert	<i>Norman, Okla.</i>
B. A., Harvard University.	
Sawyer, Elsa Amelia	<i>Hartford.</i>
B. A., University of Wisconsin.	
Schneider, Fay Catharine	<i>Toledo, O.</i>
B. A., University of Michigan.	
Schubring, Selma Langenhan, g	<i>Madison.</i>
B. A., University of Wisconsin.	

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Schuler, Mary Louise Ph. B., University of Wisconsin.	<i>Milwaukee.</i>
Schultz, Rudolf Jahnke B. A., Olivet College.	<i>St. Louis.</i>
Schulz, Raymond Louis, m B. S., University of Wisconsin.	<i>Milwaukee.</i>
Sealock, William Elmer B. A., Ohio State University.	<i>Circleville, O.</i>
Selby, Nina B. M. A., State University of Iowa.	<i>Oxford, O.</i>
Selden, Joseph Philip B. A., Olivet College.	<i>Calumet, Mich.</i>
Shale, Rolla J. B. A., Oberlin College.	<i>Baltimore, Md.</i>
†Shortridge, Wilson Porter B. A., Indiana University.	<i>Medora, Ind.</i>
Shreve, Charles Henry B. S. A., Harvard University.	<i>Cincinnati, O.</i>
Simmons, Lucretia Van Tuyl M. A., Pennsylvania State College.	<i>Richmondville, N. Y.</i>
Sister Mary George B. A., Washington University.	<i>Sinsinawa.</i>
Sister Mary James Cavanaugh, E. L., University of Wisconsin.	<i>Sinsinawa.</i>
†Smith, Ernest Thomas B. A., Bowdoin College.	<i>Gray, Me.</i>
Smith, Gilbert Morgan, g B. S., Beloit College.	<i>Beloit.</i>
†Spence, Mary Leslie B. A., University of Wisconsin.	<i>Oconomowoc.</i>
Squire, Harry Elmore B. A., University of Kansas.	<i>Wellington, Kas.</i>
Staley, Forest Henry B. A., University of Wisconsin.	<i>Chester, S. D.</i>
Staley, John Jay B. A., Brown University.	<i>Madison.</i>
Steig, Josephine, B. A., University of Wisconsin.	<i>Whitehall.</i>
Stevens, Wyandotte James M. A., Normal College.	<i>St. Louis, Mo.</i>
Stevenson, John Alford B. A., Ewing College.	<i>Cobden, Ill.</i>
Steyer, Ida Bertha E. A., University of Wisconsin.	<i>Indianola, Ia.</i>
Stimson, Mary B. A., Coates College.	<i>Terre Haute, Ind.</i>
Stoll, Charles August Ph. B., Greenville College.	<i>Greenville, Ill.</i>

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Stuckert, John Frederick	<i>Milwaukee.</i>
B. A., University of Wisconsin.	
Sullivan, Theresa Ellen	<i>Watertown.</i>
M. A., University of Wisconsin.	
Surrey, Nancy Maria Miller	<i>Madison.</i>
M. A., University of Wisconsin.	
Sutherland, William James	<i>St. Paul, Minn.</i>
Ph. B., University of Wisconsin.	
Sutton, Luther Francis, g	<i>Salem, W. Va.</i>
B. S., Salem College.	
Suydam, Vernon Andrew	<i>Waupaca.</i>
B. S., University of Wisconsin.	
Swenholt, John, g	<i>Madison.</i>
B. S., University of Wisconsin.	
Takahashi, Ryoza	<i>Akita, Japan.</i>
M. A., Princeton University.	
Terry, Abbie Celina	<i>Madison.</i>
Ph. B., University of Wisconsin.	
Thistlewaite, Glen	<i>Hortonville, Ind.</i>
B. S., Earlham College.	
†Thompson, Vida Irene	<i>Poynette.</i>
B. A., Lawrence College.	
Tighe, Benjamin Charles B., g	<i>Clinton.</i>
Ph. B., University of Wisconsin.	
Titsworth, Paul Emerson	<i>Alfred, N. Y.</i>
Ph. B., Alfred University.	
Titsworth, Waldo Alberti	<i>New Brunswick, N. Y.</i>
M. A., Alfred University.	
Town, Elinor Kirkwood	<i>Greencastle, Ind.</i>
M. A., De Pauw University.	
Trautmann, William John	<i>Forest Junction.</i>
Ph. B., University of Wisconsin.	
Trimble, William Joseph	<i>Madison.</i>
M. A., Washington State College.	
Tucker, Henry Robinson	<i>St. Louis, Mo.</i>
M. A., University of Nebraska.	
Tucker, Robert Henry, g	<i>Danville, Va.</i>
M. A., William and Mary College.	
Utendorfer, William Elmer	<i>Spring Green.</i>
B. S., University of Wisconsin.	
†Van Auker, Clarice	<i>Madison.</i>
B. A., University of Wisconsin.	
Vanderwalker, Nina Catharine	<i>Milwaukee.</i>
B. L., Olivet College.	
M. Pd., Michigan Normal College.	
Van Horn, Jesse Lower	<i>Madison.</i>
B. S., Ohio Wesleyan University.	

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Virtue, George Olien	Winona, Minn.
B. A., Harvard University.	
Walker, Florence Mercy	Chicago, Ill.
Ph. M., University of Chicago.	
Walton, John Ramon	Perrysville, O
M. A., Otterbein University.	
Warfield, George Alfred	Mitchell, S. D.
M. A., University of Oregon.	
Waters, Elizabeth Agnes	Fond du Lac.
E. S., University of Wisconsin.	
Weber, August William. g	Madison.
Ph. M., University of Wisconsin.	
Wellington, Margaret Coggin	Boston, Mass.
B. A., Radcliffe College.	
Wellington, Raynor Greenleaf. g	Boston, Mass.
M. A., Harvard University.	
Wells, Florence Ada	Racine.
B. A., Vassar College.	
Wells, Frances Banister	Oak Park, Ill.
Ph. B., University of Chicago.	
Werkmeister, Marie K.	Evanston, Ill
B. A., University of Chicago.	
West, Francis Everett	Alma, Mich.
M. S., Michigan State Agricultural College.	
White, Eva Whiting	Boston, Mass.
B. S., Simmons College.	
White, Hazel	Norborne, Mo.
B. A., University of Missouri.	
White, Mabel Emma	Sharon.
B. A., Lawrence College.	
White, Melvin Johnson. g	Madison.
M. A., University of Wisconsin.	
†Wilcox, Alice Emily	Storm Lake, Ia.
E. A., University of Michigan.	
Wilcox, Wendell Garrett	Spencerport, N. Y.
Ph. M., Syracuse University.	
Wilgus, James Alva	Platteville.
M. A., Ohio State University.	
Williams, Alene	Chicago, Ill.
B. A., University of Chicago.	
Wilson, Anna Evalyn	Appleton
Ph. B., Lawrence College.	
Witherbee, Oliver Day	Lodi.
B. A., Lawrence College.	
Wolf, Howard Webster	Hanover, Ind.
B. A., Indiana University.	
Woo, Nae Tsung.	Chekkiang, China.
B. S., University of California.	

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Woodworth, Arthur Heath	<i>Atledo, Ill.</i>
M. A., University of Chicago.	
Wright, Christine Ramsay	<i>Baraboo.</i>
B. L., University of Wisconsin.	
Wright, Mignon	<i>Madison</i>
B. L., University of Wisconsin.	
Wylie, Andrew Tennant	<i>Bloomington, Ind.</i>
M. A., Indiana University.	
Young, Charles Edmund	<i>Milwaukee.</i>
M. A., University of Wisconsin.	
Young, Earle Burdett, g	<i>Madison.</i>
Ph. B., Coe College.	

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Undergraduates and Teachers

Abbott, Eveline Patience ls	<i>Madison</i>
Adler, Frederic Emanuel	<i>Milwaukee</i>
Aldrich, Mildred	<i>Milwaukee</i>
Allard, Louis William ls, m	<i>Fond du Lac</i>
Allen, Jessie ls	<i>Cambridge</i>
Allison, Albert Fay ls	<i>Sioux Falls, S. D.</i>
Almy, Hubert St. Claire	<i>Galesville</i>
Ames, Merl McMains	<i>Shiocton</i>
Anderson, Alice Theresa ls	<i>Abbotsford</i>
Anderson, Carl Tesch	<i>Milwaukee</i>
Anderson, Charles Joseph	<i>Prescott</i>
Andressohn, John Carl ls	<i>Milwaukee</i>
Andrus, Calla Adelaide ls	<i>Madison</i>
Armbruster, Theresa Marie	<i>River Falls</i>
Arneson, Ben Albert	<i>Barneveld</i>
Arnold, Walter Jacob	<i>Kiel</i>
Atwood, Marion John ls	<i>Madison</i>
Bacon, Ruth	<i>Chicago, Ill.</i>
Baird, Oscar W., ls	<i>Blair</i>
Baldwin, Lawrence Merrill ls	<i>Kenosha</i>
Baldwin, Ray ls	<i>Chicago, Ill.</i>
Balmat, Clara Emma	<i>Nora Springs, Ia.</i>
Banks, Charles	<i>Kirkville, Mo.</i>
Barnes, Mary Louelle	<i>Morrison, Ill.</i>
Barr, Florence Edith	<i>Kenosha</i>
Barrett, Anna Emma	<i>Waterloo, Ia.</i>
Bassford, George Ainslie	<i>Sturgeon Bay</i>
Batchelor, Roger Putnam ls	<i>Milwaukee</i>
Beecroft, Albert Bouffler a	<i>Madison</i>
Beers, Emma Mae	<i>Platteville</i>
Belden, Carroll Reed	<i>Omaha, Neb.</i>
Bersh, Anna	<i>Milwaukee</i>
Bigelow, Narcissa Fox	<i>Milwaukee</i>
Bigford, Roger Collins ls	<i>Manawa</i>
Billings, Myrtle Rosella	<i>Menomonie</i>

Blackburn, Ralph
 Blanchard, Araminta Pearl
 Bly, Mabel Anna
 Boette, Cecelia Rose
 Bohan, Ira James ls
 Bonfoey, Jennie Prudence
 Born, Flora May
 Born, Sophia Park
 Bosman, Gideon Johannes
 Bosson, Amy Goodrich ls
 Bowles, Ida Huston
 Boyd, Bertha B.
 Boyd, Stanley Mayo ls
 Bradley, Cora Mae
 Bradley, Henrietta
 Brandt, Rose Katherine
 Braun, Adolph Rudolph
 Brazell, James Coleman
 Breitling, Carl Adolph
 Bright, George Noyes ls
 Brookins, Julia Louise Clarke ls
 Brown, Annie Laurie
 Brown, Frederick George
 Brown, Georgia Amelia
 Browne, Carrie Olive
 Buettner, Clotilda
 Bugbee, Abel Ralph ls
 Bulfin, George Thomas ls
 Bunner, Mary Regina
 Burt, Olive
 Bucheck, Alfred Joseph
 Bussewitz, Walter Richard
 Butt, Jane
 Butt, William Edward ls
 Butterfield, Jennie
 Byers, Gladys Valentine
 Cadman, William Samuel
 Campbell, Hugh
 Carson, Harriet Mildred ls
 Cary, Caroline Marie ls
 Chang, Lauchi g
 Chao, Gwok-Tsai ls
 Chase, Helen
 Christoffers, Harry John ls
 Clancy, Leslie Mark
 Clark, Ethel
 Clark, Georgiana
 Clark, Vinnie Belle ls
 Clark, William Walter
 Clifford, Eugene Arthur
 Elgin
 Fennimore
 Brandon
 St. Louis, Mo.
 Avoca
 Milwaukee
 Savannah, Mo.
 Savannah, Mo.
 Transvaal, S. Africa
 Calumet, Mich.
 Paris, Ill.
 Chicago, Ill.
 Madison
 West Salem
 Meriden, Ia.
 Osceola
 Milwaukee
 Madison
 Streator, Ill.
 Minneapolis, Minn.
 Milwaukee
 Cleburne, Tex.
 Oshkosh
 St. Louis, Mo.
 Omaha, Neb.
 Jasper, Ind.
 Wausau
 Milwaukee
 Sinsinawa
 Antigo
 Manitowoc
 Juneau
 Los Angeles, Cal.
 Woodburn, Ind.
 Montrose, S. D.
 Kirkland, Ill.
 Norwood, O.
 Sparta
 Madison
 Madison
 Shanghai, China
 Shanghai, China
 Milwaukee
 London
 Evanston, Ill.
 Lincoln, Neb.
 Portage
 Mayville
 Ellsworth
 Juneau

Coar, John R.	Shelbyville, Ind.
Coates, Charles Irwin	Harvard, Ill.
Coleman, Herbert Clinton Is	Lowell
Coleman, James Ricketson Is	Milwaukee
Collentine, Arthur O. a	Monroe
Conlan, Grace	Milwaukee
Conron, Thomas William Is	Danville, Ill.
Conway, Mayme Agnes	Elroy
Cooper, Belva Naoma Is	Madison
Cooper, Harold Is	Milwaukee
Corey, Harris Lorenzo	Toledo, O.
Corey, Silas Grover	Dresser Junction
Couden, Margaret Turpin	Cincinnati, O.
Coward, Stanley Chandler Is	Oregon
Crawford, Willard Goldsworthy Is	Mineral Point
Culver, Harold Eugene Is	Stevens Point
Curtis, Edith M.	Indianapolis, Ind.
Curtis, Leroy George	Waupun
Curtis, Roswell	Chicago, Ill.
Dahl, John L.	Strum
Dahl, Lulu Edna Is	Madison
Darby, Lillie	Wilmot
Darling, William Thomas	Florence
Davis, Lloyd Edward	Red Granite
Davison, Willard Alton	Fairfield, Neb.
Dealy, Margaret May	Yankton, S. D.
Degeler, Alida Is	Milwaukee
Dexter, Bessie Hoard Is	Madison
†Dixon Raymond Ephraim	Kingston
Dodd, Gertrude	Oshkosh
Duke, John Logan e	Madison
Dunn, Anna De Pazza	Elkader, Ia.
Dvorak, Albert Charles Is	Kewaunee
Dyke, Le Grande Grandis Is	Prairie du Chien
Eagan, Joseph Bernard Is	Avoca
Eason, James Roy Is	Milwaukee
Eberle, Roger Theodore Is	Watertown
Egan, John Fabian Is	Ashland
Elchinger, John Augustine	Algoma
Eiselmeler, John	Milwaukee
Ellefson, Mabel Selma	Madison
Enelow, Helen	Chicago, Ill.
Epstein, Dorothy Louise	Portage
Esh, Glen Albyn a	Spring Grove, Ill.
Eyland, Clara Margaretta	Akron, Ia.
Farrar, Victor John Is	Madison
Feinauer, Bertha Katharine	Ashland
Feix, Helen	Milwaukee

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Fellows, Raemond Niles
 Ferrar, Kayutah Is
 Field, Albert Martin
 Fiers, James Walter
 Fieser, James Louis
 Fitzpatrick, Maude B.
 Fligelman, Frieda Is
 Floyd, John George Is
 Fowler, Myrtle Margaret
 Franklin, Stella Miles
 Freeman, Courtney Dodge Is, mu
 Frey, Frank Armin Is
 Frey, Noah Joseph Is
 Fries, Joseph Ferdinand
 Froehlich, Arno August Carl Is
 Fromm, William Henry
 de la Fuentey R., Jesús
 Fuller, Anna Caroline Is
 Fuller, William David Is
 Gahagan, John Martin
 Gaskell, Mary Lillian
 Gaston, José a

Geisenhofer, Katherine
 Gesell, Bertha May Is
 Gesell, Robert Albert Is, m
 Geyman, Emilie Louise
 Geyman, Grace Caroline
 Gibbon, Owen Benjamin
 Gilchrist, Lawrence Case
 Gile, Bueford M.
 Gillen, Edna Florian Is
 Gillette, Cora Maud
 Gold, John Kedney
 Gotham, Edwin Chauncey
 Graham, Alexander Richard Is
 Graham, John Cameron a
 Graves, Lola May Is
 Green, Edwin Leo
 Green, Eunice Genevieve
 Greenwood, Albert Ernest Is
 Greubel, Anna
 Grevstad, Agnes
 Griffin, Grace Margaret Is
 Griffin, Warren Orval
 Groom, Samuel Burton
 Gross, Manfred Stephen Is
 Gysbers, John Henry Is
 Haessler, Paul Carl

Madison
 Madison
 Cambridge
 Redkey, Ind.
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 Milwaukee
 Chicago, Ill.
 Hinsdale, Ill.
 Milwaukee
 Madison
 Glidden
 Sheboygan
 Milwaukee
 Nadadores, Coah, México
 Madison
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 La Valle
 Honey Creek
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 P. I.
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 Winona, Minn.
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 Racine
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 St. James, Minn.
 Fountain City
 Deerfield
 Madison
 Madison
 River Falls
 Madison
 Johnson Creek
 Milwaukee
 Deerfield
 Madison
 Pardeeville
 Milwaukee
 Milwaukee
 Madison
 Madison

Hahn, Katherine Ames
Halben, von der, William, Jr.
Hall, Lucy
Hall, William Oscar
Halsey, Myra Dorcas
Hamann, Friedrich A.
Hamilton, William James
Hammer, John M.
Hanchett, David Scott Is, 1
Hanson, John Bennett
Hanson, Josephine Burntine
Hargrave, Florence Villritt Is
Hargrave, Mary
Harter, Emma Leona
Hashimoto, Yojizaemon
Hatch, Kirk Lester
Haukohl, Robert Gustav
Haven, Carrie Adeline
Hawk, Edward L.
Hawkins, Edwin Cameron Is
Hawkins, Marjorie Deane
Hay, Townsend Is
Hayward, Ruth Pauline
Hein, Frederick William
Hendrickson, Manville Fritjoff Is
Henke, Edward Frank cc
Herschleb, Jerry Major
Hewitt, Irving John Is
Heyward, Jennie Louisa
Hibbard, Charles Frederick, Jr., Is
Hicks, William Ellsworth
Hidalgo, Augusto
Hill, Mrs. Howard C.
Hints, Richard Francis
Hitchcock, Mae Elizabeth
Hockett, Catherine
Hofmann, Lothar Is
Hogan, Dana Jay Is
Hogan, James Mangan
Holt, Elnora Sarah
Holtz, Henry Gustav
Hookstadt, Carl Is
Hooper, Marie Stewart
Hough, Virginia
Householder, Frederick F.
Houser, Hazel
Houston, Walter Charles
Howe, Armeda
Howell, Jean Howden
Howlett, Guy De Mont

Brodhead
Cincinnati, O.
Watertown
Richland Center
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Two Rivers
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Chicago, Ill.
Warren, O.
St. Paul, Minn.
Wilton
Wilton
Gotham
Kishimagun Saga, Japan
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Wauwatosa
Oak Park, Ill.
Bethel, O.
Lake Mills
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Oshkosh
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Horicon
Portland, Ore.
Lowell
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Highland Park, Ill.
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Sparta
Platteville
Ft. Wayne, Ind.
Fond du Lac
Fond du Lac
Savannah, Mo.
Scandinavia
Harvard, Ill.
Chattanooga, Tenn.
New York City
La Farge
Mondovi
Montfort
River Falls
Milwaukee
Brooklyn, N. Y.

Howlett, Irving Richard
 Hubbell, Wolcott Wood e
 Hudson, Philip Loren
 Hughes, Robert Davis e
 Hughes, Edna Mae ls
 Hull, Gertrude Phoebe ls
 Hyslop, Clayton James ls
 Jackman, Johnston Charles ls, m
 Jackson, William Malcolm a
 James, Ambrose John
 Jamieson, Hugh Clancy ls
 Jenkins, Anna M.
 Jensen, Lora Vaile
 Jenson, Andrew, Jr.
 Jergenson, Ella Louise
 Jones, Mary Amelia
 Jostad, Barney Mauley
 Judd, Roy Clair
 Junkman, Glen Perry ls
 Justi, Katherine Teresa
 Kamantigue, Jacinto Manila ls
 Kasiska, Eva Helen ls
 Kauffman, Jacob Lorelle ls
 Kell, Herman Frederic
 Kelley, Francis E.
 Kennedy, Gertrude Claire ls
 Kershaw, Kall
 Kiewert, George Ferdinand ls
 King, Florence Mary
 Kinne, Arch Will ls
 Kinne, Burdette Ingersoll ls
 Kircher, Irving Henry
 Kirkpatrick, Lee
 Kirwan, Jeanne Mabel
 Kobayashi, Yataro
 Kolinsky, Pete Charles ls
 Konrad, Frank Charles, Jr., ls, m
 Kremers, Roland Edward
 Kuan, Ching Lin
 Kunz, Fritz ls
 Lanius, Tudor
 Langwill, Minnie Johnstone
 Lanz, Robert
 La Rue, Edith M.
 Lawson, Lillian Edith ls
 Lawton, Howard Marion
 Leith, Benjamin Donald a
 Lennon, Charles David
 Lent, Rudolf Ernest ls
 Lerman, Frances

Oshkosh
 Madison
 Mazomanie
 Dayton, O.
 Mason City, Ia.
 Baraboo
 Blair
 Madison
 Marinette
 Blanchardville
 Poynette
 Bangor
 Manawa
 Edgerton
 Milwaukee
 Spring Green
 Holmen
 Endeavor
 Elsworth
 Highland Park, Ill.
 Imus, Cavite, P. I.
 Pocatello, Idaho
 Madison
 Grand Rapids
 Fond du Lac
 Madison
 Milwaukee
 Milwaukee
 Cincinnati, Ohio
 Montfort
 Montfort
 Watertown
 Gainerville, Texas
 Bartlesville, Okla.
 Tokyo, Japan
 Racine
 Oshkosh
 Madison
 Shanghai, China
 Madison
 Palmyra, Mo.
 Rockford, Ill.
 Madison
 Wilton
 Menasha
 Plymouth, Ill.
 Van Dyne
 Hurley
 Washington, D. C.
 Athens, Ala.

Lin, Pian Is
 Lindegren, Rosa Alina Marie
 Lins, Christina Catherine Is
 Linson, Daisy Is
 Lloyd, Sumner Hurst, Is
 Loeffler, Oscar Frederick Is
 Logue, Elmer Brewster
 Lohrie, Robert Fulton
 Loos, Emma
 Lorenz, Jennie Is
 Luce, Cleveland M.
 Lueders, Victoria
 McAllister, Hugh Albert
 McCalman, Jessie Mary
 McCarthy, John
 McCulloch, Lillian Gertrude
 MacDermaid, Lillian
 McDonald, Marguerite Helen
 McGuire, Joseph Hoshal
 McIntire, Alice Myra
 McLean, Mary Genevieve
 McNell, Elizabeth
 Macomber, Theodora
 Mandeville, Mabelle Is
 Manley, Irene Conway Is, mu
 Marshall, James Disraeli a
 Martin, Fred Charles
 Martin, Harriet Genevieve Is
 Matson, Selma
 Mayo, Edward Leroy
 Mead, Hazel Marguerite a
 Medberry, Chauncey Joseph Is
 Meerten van, Elbert Jan
 Meier, Amy Katherine Is
 Meilahn, William Oscar
 Melton, Emma
 Metzke, Martha Munson
 Meyer, Benno Walter
 Miller, Cap Earl
 Miller, Paul Gerard Is
 Mockridge, Drusilla Charlotte
 Moore, Cornelia Sibyl
 Morey, Nellie Dexter Is
 Moroney, Kathleen Is
 Morris, George Charles a
 Morrissy, Katherine
 Moy, Bock Ton e
 Mumm, Beulah
 Murray, Emily Agnes
 Murray, Frances Josephine

Shanghai, China
 Superior
 Spring Green
 Columbus, Ind.
 Chicago, Ill.
 Milwaukee
 Johnson Creek
 Arcadia
 Milwaukee
 Sheboygan
 Bluffton, Ind.
 Milwaukee
 Elkton, Mich.
 Saginaw, Mich.
 Madison
 Chicago, Ill.
 Grand Rapids
 New Richmond
 Eureka, Ill.
 Boston, Mass.
 Ironwood, Mich.
 Fond du Lac
 Milwaukee
 Chicago, Ill.
 Beaver Dam
 Madison
 Cambria
 Madison
 Madison
 Eau Claire
 Madison
 Fond du Lac
 Pretoria, S. Africa
 Postville, Ia.
 Kewaskum
 Clinton, Mo.
 Baraboo
 Milwaukee
 Sigourney, Ia.
 Madison
 Lincoln, Neb.
 Logansport, Ind.
 Edgerton
 Dallas, Tex.
 Madison
 Elkhorn
 Milwaukee
 Wausau
 Stockton, Ill.
 Madison

Nagel, Karl Herman Theodor Jens	Berlin, Germany
Nee, Thomas Anthony	Seatonville
Neumann, John Xavier ls	New Ulm, Minn.
Newman, Edward Joseph	Madison
Newman, John Robert, ls, m	Madison
Nicholas, William Jarrett	Appleton
Nicol, Maude Mae	Sparta
Nye, Leland ls	Thorp
Ochsner, Albert Henry ls	Chicago
Officer, Germaine Florence	Milwaukee
Ogden, Marion G.	Milwaukee
O'Harrow, Nora Myrtle	Indianapolis, Ind.
Oldenburg, Frederic William	Deerfield
Olsen, Julia Elinor	East Milwaukee
Osborne, Oliver Martin	Madison
Otis, Frank Daniel a	Madison
Palit, Barendra Kumar a	Bengal, India
Palmatier, Nellie	Madison
Park, Gladys	Stevens Point
Parr, Thad, Cassius ls	Madison
Partridge, Elva Edythe ls	Cross Plains
Patterson, Percival	Platteville
Paul, Milton James	Platteville
Pearson, Lora	Shelbyville, Ind.
Pease, Mary Ennever ls	Wauwatosa
Pelton, Glenn Edward	Madison
Penn, Amar	Laredo, Tex.
Perkins, Lola Irene	Princeton, Ill.
Perrill, Alger ls	Chicago, Ill.
Person, Esther Helen	Chicago, Ill.
Peterson, Lawrence Peter ls	Viroqua
Philipp, Walter William a	Milwaukee
Phipps, Berenice	Corunna, Mich.
Porter, Harriet Eddy	Washington, D. C.
Porter, Orville Brandon ls	Madison
Potter, Grace R.	Whitewater
Pratt, Henry Kollock ls	Plainfield
Preston, Charles Herbert	Milwaukee
Prideaux, Nettie Gertrude	Mineral Point
Pringle, Ernest Eugene	Green Bay
Quinn, James M.	Kewancee, Ill.
Raeder, Lester William	Cedarburg
Raithel, Andrew George	Chicago, Ill.
Ralph, Frank Edgar	Cuba City
Ramp, Waldo Lester	Knoxville
Rapp, Emma Marie	Milwaukee
Recker, Lorraine	Rhineland
Reed, Nathan William ls	Rosendale
Reese, Spencer Phillip	Clinton Junction
Reinking, Erna Caroline ls	Madison

Reishus, Selmer Winifred	Minot, N. D.
Reynolds, Alice Guy	Chicago, Ill.
Rhyner, Oscar Is	Oshkosh
Richardson, Maurice Leonard Is, m	Turtle Lake
Richardson, Pearl Ethel Is	Rockford, Ill.
Rickert, Lillian Estella	Fayette, Iowa
Rieder, Rudolf Theodore Is	Milwaukee
Riley, William Henry m	Altoona
Ring, Ethel Bicknell	Neillsville
Risk, Thomas Marion	Kilbourn
Roberts, Margaret Katherine	Columbus
Rockwell, Ethel Theodora	Viola
Rodgers, Frances Genevieve	Texarkana, Tex.
Rodwell, Ethel Mary	Baraboo
Roehling, Herman Is	Milwaukee
Roehm, Florence C. Is	Calumet, Mich.
Rogers, Dorothy Is	Milwaukee
Roll, Charles	Pimento, Ind.
Rosenberger, Helen	Oskaloosa, Ia.
Ross, Thompson	Rensselaer, Ind.
Russell, G. Archibald Is	Fond du Lac
Ryan, Rosella Veronica	Madison
St. George, Helen Hatley	Nashotah
St. Sure, Violet Is	Madison
Saloman, Elsie	Milwaukee
Samdahl, Nordahl Simonson	Marshfield
Samuels, Alexander Felix Is	West Salem
Sanborn, George Allen Is	Fox Lake
Sander, John	Milwaukee
Sanders, Mamie Amelia Is	Madison
Sanderson, Edward	Milwaukee
Sansum, Harriett Grace	Baraboo
Sansum, Margaret May	Baraboo
Sansum, William David	Baraboo
Saposs, David Joseph Is	Milwaukee
Schanen, Hannah Pauline	Eland
Schmidt, John Johnson Is	Riga, Russia
Schmidt, Otto Henry	Bloomer
Schneider, Ada	Merton
Schneider, Cora Virginia Is	Milwaukee
Schneider, John Carl	Portage
Schofield, Frank Lane	Genoa Junction
Schoyen, Sydney Martin	Madison
Schranck, Henry Charles, Jr. Is	Milwaukee
Schroeder, Charlotte Anita Is	West Bend
Schroeder, Ernest Leopold	Shawano
Schreier, Konrad Foeste Is	Sheboygan
Schuldt, Alma Sophia Is	Platteville
Schulz, Elsie J.	Milwaukee
Schwandt, Robert Henry	Appleton

Schwarz, Marie Therese	Freeport, Ill.
Scott, Verner Ephraim a	Madison
Scott, Walter Alexander	Augusta
Seeman, Frank John Is	Kewaunee
Seifert, Joanna Elizabeth	Chicago, Ill.
Sewell, Emily	Waukesha
Shaffer, Ralph Jay Is	Madison
Shaw, Cornelia Elizabeth	Zion City, Ill.
Sheafor, Jean Thomas Is	Richland Center
Sibley, Joseph Crocker, Jr.	Franklin, Pa.
Siegmeyer, Johannes Wilhelm	Milwaukee
Simpson, Hugh Miller Is	Madison
Sister A. Mechtilda	Green Bay
Sister Mary Ambrose	New London
Sister Mariola	Sinsinawa
Sister Mary Grace	Milwaukee
Sister Mary Clare M.	New London
Sister Mary Natalie	Bloomington, Ill.
Sister Mary Gertrude Quinn	Sinsinawa
Sister Mary Irene	Green Bay
Slack, Jennie Elizabeth	Chicago, Ill.
Slocum, Percy Wilfred	Slocum, R. I.
Smith, Alice Belle Is	Wauwatosa
Smith, Beulah Evelyn Is	Ashland
Smith, Elize Miles	Pittsburg, Tex.
Smith, Kenneth Loveland Is	City of Mexico, Mexico
Smith, Meredith	Omaha, Neb.
Smith, Robert Matthew e	Madison
Snyder, Harry Evan	Milwaukee
Sonderegger, Victor Hugo	Milwaukee
Soriano, Oscar Sevilla a	Manila, P. I.
Spaulding, Albert Elton	Houghton, Mich.
Spielmacher, Margaret	Superior
Spohn, William Henry Is	Janesville
Squires, Benjamin Maurice	Madison
Stadelmann, Otto Robert	Madison
Stafford, Margaret Veronica	Edgerton
Stege, Lillian E.	Louisville, Ky.
Steihm, Ewald Otto	Johnson Creek
Stenerson, Martin	Wheeler
Stiles, Bennet Phelps I	Sparta
Stokdyke, Frances B.	Sturgeon Bay
Stone, Emma Dell	Clinton, Iowa
Storie, Agnes Groves	Lodi
Story, Harold Willis Is	Milwaukee
Straube, Carl Bernhard	Madison
Street, Bernard John Is	Lead, S. D.
Strike, Margaret Hazel Is	Madison
Strong, William Barstow III Is	Beloit
Sullivan, Margaret	Gratiot

Sumner, Katharine
 Sutherland, Sarah Augusta a
 Swanson, Ada Elizabeth ls
 Swartz, David Lester ls
 Swett, Maud ls
 Talbot, Charles Horner ls
 Tao, Daqueen
 Tarver, Katharine Feild
 Taylor, Bennett Ross
 Taylor, Elva Zatella
 Taylor, Euphemia Susan
 Taylor, John Willis
 Thatcher, Lucy E.
 Thatcher, Oliver Victor
 Thayer, Oscar B. ls
 Theil, Richard Benjamin ls
 Thomas, Alice Elizabeth
 Thompson, Grace
 Thompson, James Stacy ls
 Thuemler, Gertrude Elizabeth
 Tilden, Chloe Elizabeth
 Timme, Cora Henrietta
 Tobenkin, Joseph
 Traverso, Carlos Lins
 Tsai, Chu-tung ls
 Tsu, Wen-Shion ls
 Tunncliffe, Richard Martin
 Tusler, Wilbur Henry
 Ulbricht, Lydia Agnes
 Ulrich, Minnie
 Valenzuela, José
 Waddell, Winifred
 Wahl, Frederick Rice ls
 Watke, Richard Puls ls, m
 Weenink, Benjamin William
 Wehrwein, George
 Wells, Anne Irene
 Wells, Earl Harold
 Welsh, Lucy ls
 Welsh, Mary R.
 Wendels, Marie Anna ls
 Wheeler, Elisha Ford ls
 Whisman, Harlan Merritt ls
 White, Eldora
 White, Mabel Aseneth
 White, William Charles
 Wiese, Otto ls
 Wiesender, Rose
 Williams, Arthur James
 Williams, Francis Earle

Madison
 Madison
 Madison
 Waukesha
 Milwaukee
 Madison
 Hupeh, China
 Taredo, Tex.
 Madison
 Canton, O.
 Superior
 Linden
 Brookfield
 Escanaba, Mich.
 Delafield
 Waldo
 Pewaukee
 Clarinda, Ia.
 Ligonier, Ind.
 Indianapolis, Ind.
 Wausau
 Baraboo
 Baraboo
 Caxamarca, Peru, S. A.
 Shanghai, China
 Soochow, China
 Menasha
 St. Paul, Minn.
 Milwaukee
 Plymouth
 Guagua, Pampanza, P. I.
 Oak Park, Ill.
 Madison
 Pond du Lac
 Muscoda
 Manitowoc
 Cleveland, O.
 Cleveland, O.
 Milwaukee
 Milwaukee
 Baraboo
 Plymouth
 Huron, S. D.
 Clinton, Ia.
 St. Joseph, Mo.
 Canton
 Avoca, Ia.
 Green Lake
 Evansville
 Utica, N. Y.

Williams, Frank Ernest is
 Wilson, Isaac Edgar
 Wilson, Lewis Kemper a
 Winslow, Clarinda Louisa
 Winter, Otto Louis is
 Witherell, Archie Lee is
 Wodsedalek, Jerry Edward is
 Wolf, Helen Margaret is
 Wollum, Henry Melvin
 Wong, Jun Yin
 Wong, Vunlung
 Woo, Wai Shun
 Wood, Grace La Vergne is
 Wood, Patricius Aloysius
 Worthing, Hugh Otis
 Wunder, Henry Frederick
 Wupper, Melitta Adela
 Yabe, C. Masao is
 Zimmermann, Hubert Frederick

Madison
 Auburn, Ill.
 Milwaukee
 Madison
 River Falls
 Janesville
 Kewaunee
 Madison
 Eau Claire
 Shanghai, China
 Shanghai, China
 Canton, China
 Brandon
 De Pere
 Oakfield
 Shelby, Iowa
 Milwaukee
 Chikabon, Japan
 Milwaukee

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ENGINEERS

Graduates

Atkinson, Harry James
 B. A., University of Illinois.
 Beebe, John Cleveland, g
 B. S., Dartmouth College.
 Brown, Alfred Bruse,
 B. S., University of South Dakota.
 Burton, Emmette Young,
 B. A., University of Virginia.
 Dancey, Lloyd Slote,
 M. A., University of Illinois.
 Davenport, Uriah Harrold,
 B. S., University of Georgia.
 Herrick, Arthur Lowell, g
 E. S., Dartmouth College.
 Hixon, Charles Robert
 B. S., Alabama Polytechnic Institute.
 Neff, Isaac Franklin
 M. S., University of Chicago.
 Padberg, Harry Joseph
 B. A., St. Louis University.
 Peach, Preston Littlepage
 M. E., Maryland Agricultural College.
 Potts, Robert Joseph
 B. A., Strawn College.
 B. S., Texas Agricultural and Mechanical College.
 C. E., Texas Agricultural and Mechanical College.

Joliet, Ill.
 Hampton, Mass.
 Alexandria, S. D.
 Parnassus, Va.
 Waukesha.
 Madison
 Gloucester, Mass
 Perote, Ala.
 Des Moines, Ia.
 St. Louis, Mo.
 Mitchellville, Md.
 College Station, Tex.

Stocker, George Patrick	Platteville.
B. S., University of Wisconsin.	
Thomas, Albert Lee	Auburn, Ala.
M. E., Alabama Polytechnic Institute.	
Yaggy, Ira D.	Nora Springs, Ia.
B. S., Cornell College.	

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Undergraduates and Artisans

Adams, James Reva ls	Appleton
Algeo, Harold Leigh e	Chicago, Ill.
Amidon, Harry Ur	Hartford
Anderly, Howard Merle e	Brodhead
Astell, Leonard Keith e	Madison
Balch, Harold Charles e	Neillsville
Ball, Walton Cook e	Union Grove
Ballschneider, Arno Louis e	Sheboygan
Bandli, Edward Michell	Rice Lake
Barton, Jesse Billings, Jr. e	Hinsdale, Ill.
Bauer, Ernst	Milwaukee
Beasley, Phineas Welles e	Madison
Bennett, Benjamin Floyd e	Jeanette, Pa.
Bickelhaupt, Carroll Owen e	Aberdeen, S. D.
Birchard, Ralph Rogers e	Madison
Bischel, Joseph Michael e	Blomer
Blackwood, Adam	Milwaukee
Blake, George Barnes e	Huron, S. D.
Blake, Harry Duvall e	Madison
Boleng, Lee Hayes	Arcadia
Bonesteel, Lloyd Gomer e	Padua
Bowman, William Iowa	Wayzata, Minn.
Brereton, Hugh Huleatt	Madison
Brietson, Otto Walter	Deerfield
Brown, Ned Daniel Leander	Waukegan, Ill.
Brue, Hans Nelson e	De Forest
Bullard, Hiram Lester e	Evansville
Berke, Kenneth Richard e	Manitowoc
Burt, Clayton Roger e	Brodhead
Chadwick, Arthur Benjamin, Jr. e	Milwaukee
Craven, Alexander Robert	Waukesha
Cumming, Ralph Willard	Palmyra
Curwen, William Harrison e	Shullsburg
Damm, Paul Emil e	Lancaster
Daniells, Percy Hiram e	Tomah
Davis, Rowland George e	Milwaukee
Dawson, Joseph	Excelsior
Dean, Harry Jennings e	Racine
Devine, Michael Henry	Algoma
Dohm, John Walter e	Dane

Emerson, Charles John
 Esau, Carl William e
 Falk, Gordon Sands e
 Fetzner, Edward John e
 Fisher, Charles Roswell e
 Fitz, Erwin Otto e
 Fowler, William Oliver e
 Fretz, Leo Armand e
 Frost, Russell Edward e
 Fuente, de la, Ernesto e
 Fuller, Clifford
 Funston, Myron Frank
 Geltch, Ernest Werner e
 Gibson, Leo Edgar e
 Gillan, Paul Harned e
 Gilman, Stephen e
 Goeke, Otto Fred e
 Goodrich, Donald
 Gottschall, Herbert Harvey e
 Graham, Harold Moore e
 Griffith, Ben, Jr.
 Haag, Edmund Clarence e
 Halseth, Carl Martin e
 Hatch, Walter Adams e
 Hoffman, Eugene Robert e
 Hoffman, Fritz J. e
 Holverscheid, Erwin e
 Horneffer, Fred, Jr. e
 Huff, Jesse S. e
 Iakisch, Robert e
 Jacques, Hewit Blair
 Jessup, Walter Edgar
 Johnson, Clarence Nathan
 Johnson, James Albert
 Kadish, Leopold Halbert a
 Kalsched, Edward Albert e
 Keator, Edward Hollis e, mu
 Klinger, William August e
 Koenig, Meinhardt Carl e
 Larsen, Leonard E.
 Legler, Fredric Mills
 Lent, Wilmar Francis e
 Lidal, John Frank e
 Lindem, Chris J.
 Linley, Fred Hewitt e
 Lorenzo, Tomás
 Lueders, Carl Marcus John e
 Lund, Vernon Myron
 de Lyndon, Francis Alfred

Oregon
 Milwaukee
 Milwaukee
 La Crosse
 Beaver Dam
 Milwaukee
 Humbird
 Madison
 Topeka, Kans.
 Nadadores, Coah, Mex.
 Madison
 Janesville
 Sheboygan Falls
 Fort Atkinson
 Milwaukee
 Madison
 Davis, Ill.
 Minneapolis, Minn.
 Madison
 Mt. Carroll, Ill.
 Eldorado
 Whitewater
 Menomonie
 Iola
 Ellensburg, Wash.
 Madison
 Hinsdale, Ill.
 Milwaukee
 Rogers, O.
 Madison
 Delafield
 Los Angeles, Cal.
 Trempealeau
 Beloit
 Milwaukee
 Marshfield
 Moline, Ill.
 Milwaukee
 Wausau
 La Crosse
 Milwaukee
 Washington, D. C.
 Algoma
 Marinette
 Milwaukee
 San Fernando, Pampanga,
 P. I.
 Columbus
 Eau Claire
 Madison

McDougall, Shirley e
 Mac Gilvary, Lewis P.
 MacLaren, Arthur Robert e
 McLean, Joseph Raymond
 McNow, Mark Freeman a
 Macaraeg, Juan Guico e
 Maclin, Edward Silver
 Magill, Donald Groves e
 May, Arthur Edwin e
 Mears, George Sherman e
 Meinecke, Ferdinand, Jr., e
 Melin, Oscar William e
 Mengel, Forest Foster e
 Merrell, George C. g
 Miller, William Frederick
 Moritz, Charles James e
 Morris, George Lee e
 Muckelston, Ralph Waldo
 Murray, Harry
 Murrish, William Ulysses e
 Naber, Alexander Herman
 Nickell, George Harold e
 Patchin, Melvin Taggart
 Paulus, Edwin J. e
 Pearsall, William Gilchrist e
 Pettibone, Ira Frederick
 Pflanz, Ernst Leopold e
 Phillips, Victor Leo
 Platt, Herman
 Pope, Louis Frederick e
 Porter, Joseph e
 Price, George Gustav
 Pulver, Harry E. e
 Raetzmann, Arthur Henry e
 Rau, Harold Lippert e
 Reeder, Jay
 Reggiardo, Juan
 Richardson, Linwood Thomas e
 Riley, Donald Harrison Barnett e
 Ross, Livingston e
 Sandberg, Henry Theodore Is
 Sandberg, Oscar Edward
 Santamaria, Marco A. e
 Schecter, Samuel e
 Schmidt, Alfred Charles Is
 Schulte, Walter Biersach e
 Sjoblom, Axel Theodore e
 Slidell, Kemper e
 Smith, Chauncey Lester
 Springer, Lew Wallace e

Whitewater
 Madison
 Milwaukee
 Amery
 Mauston
 Binalona, Pang., P. I.
 Stanton, Tenn.
 Guadalajara, Mex.
 Madison
 Fond du Lac
 Milwaukee
 Moline, Ill.
 Oconomowoc
 Ripon
 Racine
 Madison
 Joliet, Ill.
 Waukesha
 Baraboo
 Mazomanie
 Shawano
 Waukesha
 Weyauwega
 Milwaukee
 McGregor, Ia.
 Kansas City, Mo.
 Milwaukee
 Ft. Wayne, Ind.
 Baraboo
 Racine
 Madison
 Oakfield
 Viroqua
 Elroy
 Milwaukee
 Madison
 Victoria, Arg. Rep.
 Turtle Lake
 Evanston, Ill.
 Rensselaer, Ind.
 Madison
 Madison
 Medellin, Columbia, S. A.
 Sorel, Que, Can.
 Milwaukee
 Madison
 Grantsburg
 Milwaukee
 Waukesha
 East Las Vegas, N. M.

Stancliff, Arthur Dale
 Starkey, Harry Nichol e
 Steinhagen, Ewald Daniel e
 Stephens, James Coldazier e
 Stewart, Lee Hayne e
 Stillwell, Ellis Dayre e
 Stroebel, David George
 Sun, Jeeffong Roy e
 Taylor, Herbert Cecil e
 Taylor, John Atkinson
 Theurer, Fritz Louis e
 Thompson, Oscar Theodore e
 Thompson, Victor E.
 Touton, Luis
 Travis, Bert Hoyt
 Traxler, Henry e
 Tripp, Clarence Arthur
 Turvill, Henry Lane
 Ullius, Frederick William e
 Van Auken, Claude Linn e
 Van Auken, Kenneth
 Veerhusen, Herman Helm e
 Villanueva, Vicente Pio
 Warner, Benjamin Isaac
 Watson, Francis Hobbs
 Weinhardt, Arthur William
 Welker, Emerson
 Welsh, John Thomas e
 West, William Charles
 Whelan, John B. e
 Whomes, Walter Dewitt e
 Williams, Milo e
 Woods, Charles Reynolds e
 Woolrich, Willis Raymond e
 Wurl, Frank Louis e

Lincoln, Neb.
 Eau Claire
 Milwaukee
 Madison
 Janesville
 Alexandria, S. D.
 Ft. Atkinson
 Shanghai, China
 Lancaster
 New Lisbon
 Milwaukee
 South Kaukauna
 Grand Rapids
 Kansas City, Mo.
 Elkhorn
 Milwaukee
 Shepherd, Mich.
 Madison
 Milwaukee
 Madison
 Madison
 Batangas, P. I.
 Madison
 Selma, Ala.
 St. Croix Falls
 Bangor, Mich.
 Madison
 Chicago, Ill.
 Chippewa Falls
 Madison
 Canton
 Fond du Lac
 Mineral Point
 Appleton

LAW

Baker, John Sydney, B. A. 1
 Belknapp, Clark Hiram, M A.
 Bessey, John Mack B. A.
 Blanchard, George Washington, B. A 1
 Blanchard, Horace James
 Boyce, Merton Vernal 1
 Boyle, Frank Edward 1
 Browne, James Howard 1
 Buchen, Gustave William, B. A.
 Burns, Luke Francis
 Bushnell, Alfred Hanson, B. A.
 Chamberlain, Harlen Roy, B. L.

Augusta
 Fayette, Iowa
 Milwaukee
 Colby
 Grand Forks, N. D.
 Woodruff
 Eau Claire
 Chippewa Falls
 Sheboygan
 Cleveland
 Madison
 Baraboo

Corsen, Louis Arthur, B. A. 1
 Dallwig, Paul
 Darrow, Joseph Daniel 1
 Dorn, Grace Greenwood
 Dreutzer, Carl Ebbe
 Edwards, Verne Robert 1
 Faulkner, Henry Clarence
 Faulkner, William Ernest, B. A.
 Fletcher, Clark Robinson 1
 Ford, John Patrick 1
 Gardner, John David, Jr.
 Gibbon, Charles Hugh
 Goggins, Hugh William 1
 Goldschmidt, William Jacob 1
 Grady, Albert William, B. A. 1
 Haase, Oscar Rudolf, B. A. 1
 Hake, Walter S.
 Haseltine, Winfred David, B. A. 1
 Jedney, Severan Eli, B. A.
 Jones, William Elwyn, B. A.
 Karrow, Herman Henry
 Kelly, Albert Matthew 1
 Kerr, William Dunton, B. A.
 Kingsford, Alfred Charles, B. A.
 Lamb, Floyd A.
 Lobb, Albert James, B. A. 1
 Lonsdorf, John Andrew
 McCarthy, Leslie Combes, B. A.
 McComb, Archie 1
 MacPhail, Leland Stanford
 Milbrath, David Gallus, B. A.
 Munson, Matthias, R. B. A.
 Murphy, James Roach 1
 Murphy, Peter James 1
 Opsahl, Oliver Bernhard
 Orchard, Milton, Ph. B. 1
 Phelps, Sumner H. 1
 Pickering, Harold Gregg 1
 Rademaker, Oscar, B. A. 1
 Rhoads, Luke Caldwell
 Ritland, Owen 1
 Roehl, Julius Otto, B. A. 1
 Rundell, Oliver Samuel 1
 Sanderson, Thomas Harvey, Ph. B. 1
 Svacina, John Joseph 1
 Sommers, Samuel Alexander,
 Sprague, William Harvey, B. A.
 Thompson, Thomas Jefferson, B. A.
 Vandervelde, Bartholomew, B. A.
 Webster, Lawrence Benjamin

Milwaukee
 Manitowoc
 Argyle
 Albany, N. Y.
 Sturgeon Bay
 Bloomington
 Barbourville, Ky.
 Barbourville, Ky.
 Waukesha
 Rosendale
 Platteville
 Dodgeville
 Grand Rapids
 Milwaukee
 Port Washington
 Milwaukee
 Elroy
 Madison
 Blair
 Nashua, Ia.
 Milwaukee
 Milwaukee
 Madison
 Sheboygan Falls
 Vining, Ia.
 Ripon
 Manitowoc
 Lead, S. D.
 Milton
 Ludington, Mich.
 Milwaukee
 Prairie du Chien
 Chippewa Falls
 Madison
 De Forest
 Muscoda
 Madison
 Superior
 Chicago, Ill.
 Clarksville, Ia.
 Elroy
 Milwaukee
 Livingston
 Cambria
 Prairie du Chien
 Cincinnati, O.
 Elkhorn
 Washington, D. C.
 Brandon
 Madison

Wong, Ko-ung I
 Woodward, Earl Ray
 Youngquist, Charles, B. A.
 Zollmann, Carl Frederick Gustav
 Zuehlke, Walter Webster Is

Hankow, China
Minneapolis, Minn.
Mabel, Minn.
Horicon
Hortonville

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DAIRY SCHOOL

Dahl, Norman Richard
 Dixon, George Hall
 Frazier, Jacob Simeon
 Hardy, Jasper
 Judkins, Charles Wesley
 Knudsten, Albert Merius
 Kumm, Otto
 McKinney, Harold Hall
 Tank, George Treat

Stanley
West Bloomfield, N. Y.
Americus, Ga.
Winterport, Me.
Fond du Lac
Downing
Bangor
Salt Lake City, Utah
Van Dyne

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SUMMARY OF STUDENTS

GRADUATE SCHOOL—281

Fellows	25
Scholars	18
Other Graduate Students	238

COLLEGE OF LETTERS AND SCIENCE—2241

Graduate Students.....	224
Senior Class	351
Junior Class	450
Sophomore Class	483
Freshman Class	598
Adult Special Students	91
Two-Year Pharmacy Students	36
Medical Students not Given Double Classification.....	8

Included in the above are the following:

Course in Commerce—250

Senior Class	35
Junior Class	32
Sophomore Class	71
Freshman Class	105
Adult Special Students	7

Course for Normal School Graduates—62

Senior Class	31
Junior Class	31

Course in Pharmacy—42

Graduates	2
Four Years' Course { Seniors	3
{ Sophomores	1
Two Years' Course { Second Year	15
{ First Year	21

Course in Chemistry—57

Senior Class	9
Junior Class	11
Sophomore Class	18
Freshman Class	16
Adult Special Students	3

Medical School—49

Second Year.....	17
First Year	32

COLLEGE OF ENGINEERING—781

Graduate Students 33

Senior Class—135

Civil Engineering Course 62

Mechanical Engineering Course 18

Electrical Engineering Course 35

General Engineering Course 9

Chemical Engineering Course 7

Mining Engineering Course..... 4

Junior Class—148

Civil Engineering Course 67

Mechanical Engineering Course 25

Electrical Engineering Course 41

Chemical Engineering Course 6

Mining Engineering Course 9

Sophomore Class—213

Civil Engineering Course 75

Mechanical Engineering Course 49

Electrical Engineering Course 64

Chemical Engineering Course 13

Mining Engineering Course 12

Students in Advanced Course included in the above:

Civil Engineering Course 9

Chemical Engineering Course 3

Mechanical Engineering Course 3

Electrical Engineering Course 4—19

Freshman Class 219

Adult Special Students 53

COLLEGE OF AGRICULTURE—403

Graduate Students 24

Long Course	{ Seniors	26	
	{ Juniors	53	
	{ Sophomores	66	
	{ Freshmen	87	
	{ Adult Special Students	21—	253

Middle Course	{ Second Year	24	
	{ First Year	35	
	{ Adult Special Students	15—	74

Home Economics	{ Seniors	3	
	{ Juniors	10	
	{ Sophomores	10	
	{ Freshmen	24	
	{ Adult Specials	5—	52

LAW SCHOOL—159

Third Year	36
Second Year	27
First Year	34
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SCHOOL OF MUSIC—143

Collegiate	Graduate Students	3
	Fourth Year	4
	Third Year	10
	Second Year	15
	First Year	92
	Adult Specials	19—143

Deduct students enrolled in other colleges66—77

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Letters and Science—

Graduate Students	313
Undergraduates and teachers	550

Law School

67

Engineers—

Graduate Students	15
Undergraduates and Artisans	174

Dairy School

9—1128

Deduct students now attending the University 387

— 741

Total4402

Twice enumerated 16 leaving.....4386

Additional Enrollment, College of Agriculture

Short Course	Second Year	172
	First Year	289— 461

Dairy Course

100

Grand Total.....4947

In the above classifications are included students enrolled in the Course for the Training of Teachers as follows: Seniors 196, Juniors 210, and in the Advanced Course, 30.

In the enumeration of adult special students above, the classification by courses is as follows: Letters and Science, third year 6; second year 22; first year 63; Music, fourth year 1; second year 1; first year 17; Civil Engineering, third year 6; second year 3; Mechanical Engineering, third year 4; second year 4; Electrical Engineering, third year 1; second year 1; Mining Engineering, second year 1; first year students in Engineering 13; Agriculture, third year 2; second year 4; first year 35.

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