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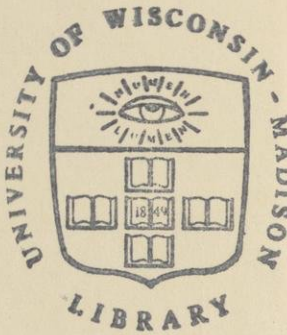
1910 - 1911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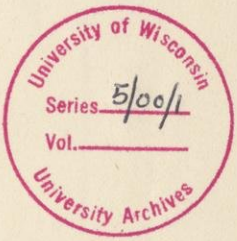
1910-1911



MADISON

1911

Issued bi-monthly, and entered as second class matter at the post-office at Madison, Wisconsin.

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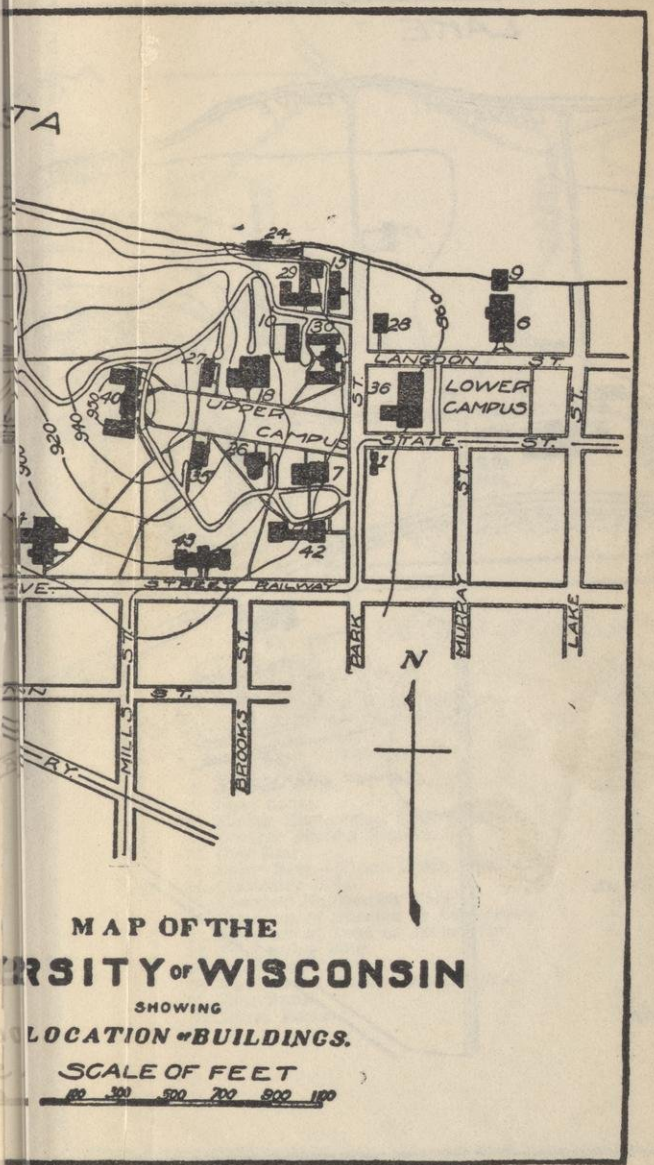
MADISON, WISCONSIN



MAP OF THE

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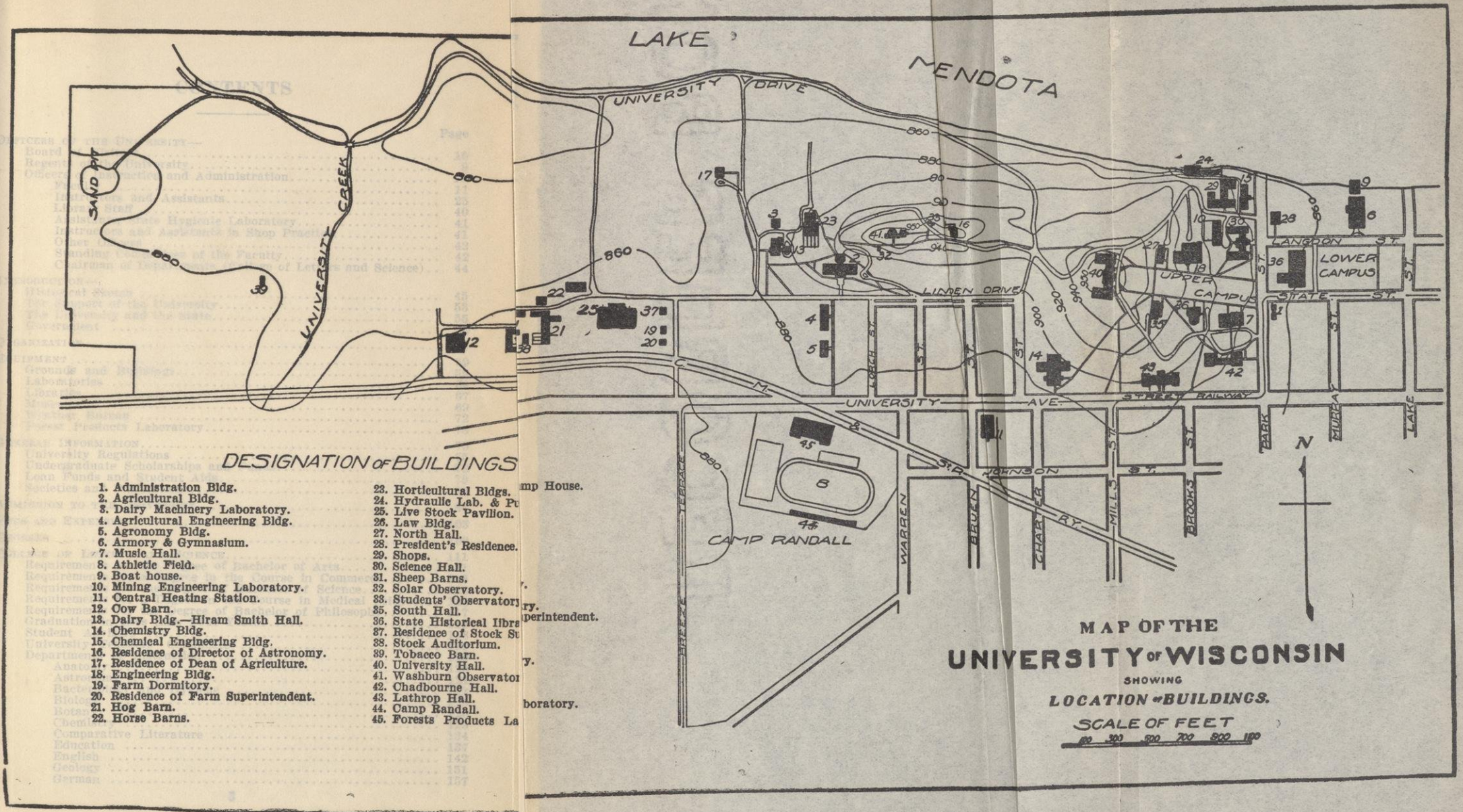

DESIGNATION of BUILDINGS

1. Administration Bldg.
2. Agricultural Bldg.
3. Dairy Machinery Laboratory.
4. Agricultural Engineering Bldg.
5. Agronomy Bldg.
6. Armory & Gymnasium.
7. Music Hall.
8. Athletic Field.
9. Boat house.
10. Mining Engineering Laboratory.
11. Central Heating Station.
12. Cow Barn.
13. Dairy Bldg.—Hiram Smith Hall.
14. Chemistry Bldg.
15. Chemical Engineering Bldg.
16. Residence of Director of Astronomy.
17. Residence of Dean of Agriculture.
18. Engineering Bldg.
19. Farm Dormitory.
20. Residence of Farm Superintendent.
21. Hog Barn.
22. Horse Barns.
23. Horticultural Bldgs.
24. Hydraulic Lab. & Pu
25. Live Stock Pavilion.
26. Law Bldg.
27. North Hall.
28. President's Residence.
29. Shops.
30. Science Hall.
31. Sheep Barns.
32. Solar Observatory.
33. Students' Observatory
35. South Hall.
36. State Historical Libra
37. Residence of Stock Su
38. Stock Auditorium.
39. Tobacco Barn.
40. University Hall.
41. Washburn Observator
42. Chadbourne Hall.
43. Lathrop Hall.
44. Camp Randall.
45. Forests Products La

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MAP OF THE UNIVERSITY OF WISCONSIN

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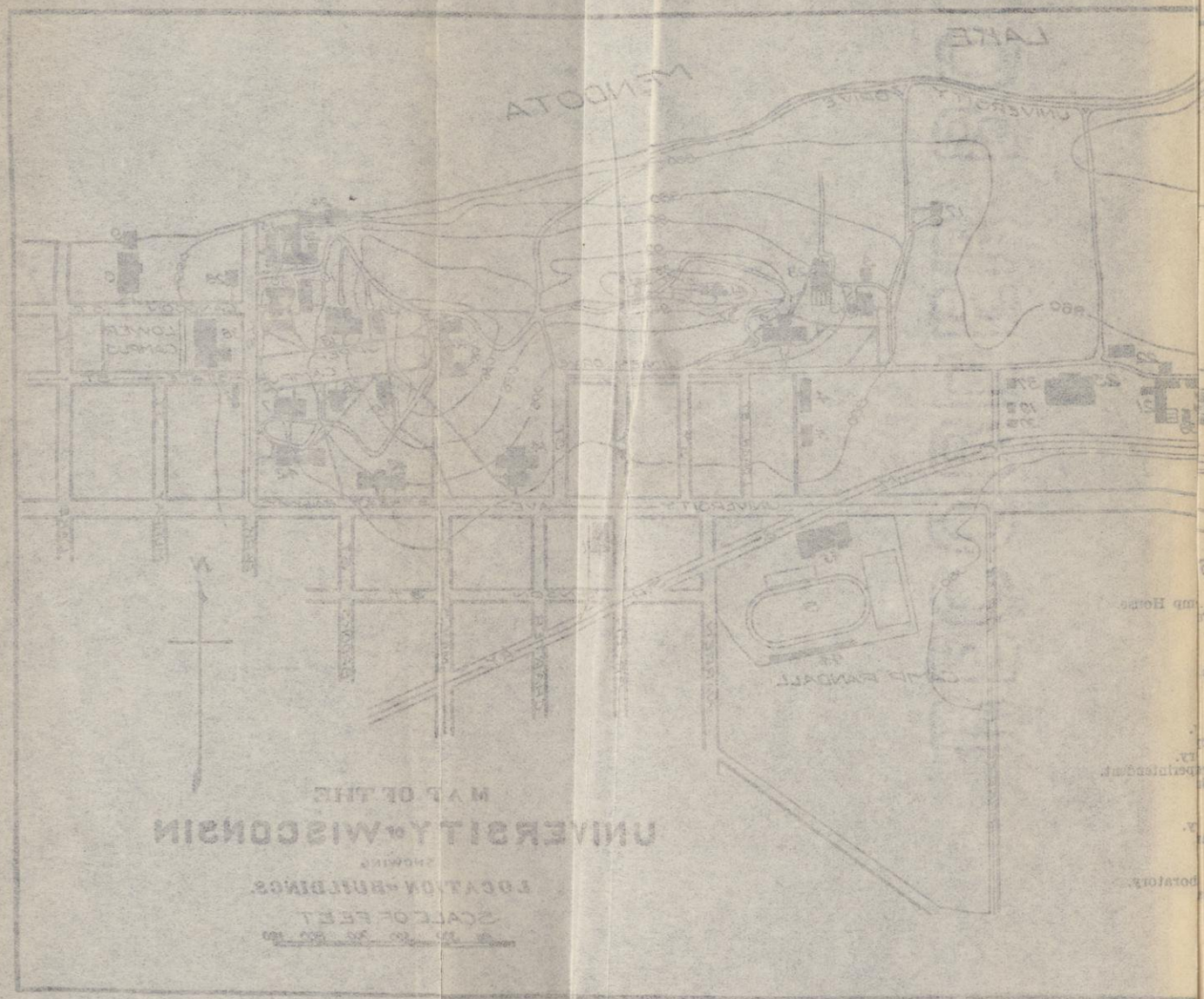
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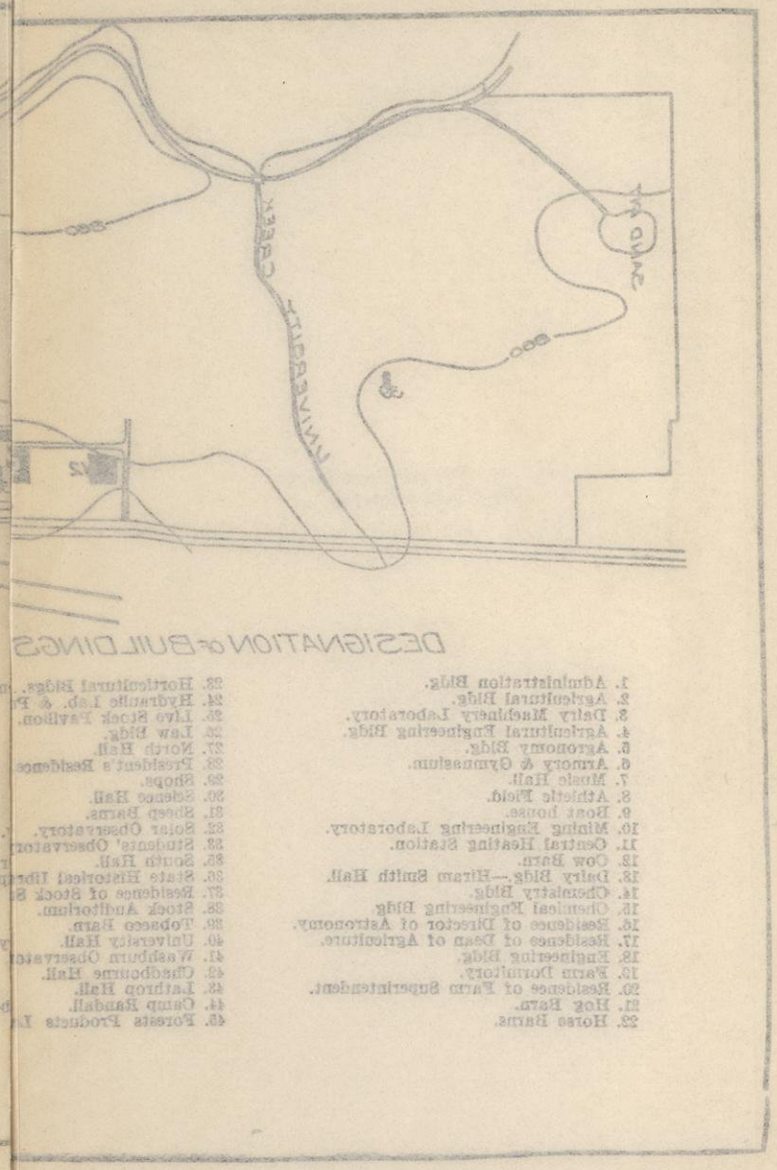
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4. Agricultural Engineering Bldg.
5. Agronomy Bldg.
6. Armory & Gymnasium.
7. Music Hall.
8. Athletic Field.
9. Boat house.
10. Mining Engineering Laboratory.
11. Central Heating Station.
12. Cow Barn.
13. Dairy Bldg.—Hiram Smith Hall.
14. Chemistry Bldg.
15. Chemical Engineering Bldg.
16. Residence of Director of Astronomy.
17. Residence of Dean of Agriculture.
18. Engineering Bldg.
19. Farm Dormitory.
20. Residence of Farm Superintendent.
21. Hog Barn.
22. Horse Barns.
23. Horticultural Bldgs.
24. Hydraulic Lab. & Pr
25. Live Stock Pavilion.
26. Law Bldg.
27. North Hall.
28. President's Residence
29. Shops.
30. Science Hall.
31. Sheep Barns.
32. Solar Observatory.
33. Students' Observatory
35. South Hall.
36. State Historical Libr
37. Residence of Stock S
38. Stock Auditorium.
39. Tobacco Barn.
40. University Hall.
41. Washburn Observato
42. Chadbourne Hall.
43. Lathrop Hall.
44. Camp Randall.
45. Forests Products La
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1911

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CALENDAR

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	Friday	Christmas recess begins.

1911

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

Commencement Week

June	18	Sunday	Baccalaureate address.
June	19	Monday	Class day exercises.
June	20	Tuesday	Alumni day.
June	21	Wednesday	Commencement day.

Summer Session

June	26	Monday	Summer session opens.
Aug.	4	Friday	Summer session closes.

THE ACADEMIC YEAR 1911–1912

1911

Sept.	25–26–27	Mon.–Tu.–Wed.	Registration days.
Sept.	26–27	Tu.–Wed.	Examinations for adı
Sept.	28	Thursday	Lectures and recitations begin.
Nov.	30	Thursday	Thanksgiving Day: legal holiday.
Dec.	22	Friday (noon)	Christmas recess begins.

1912

Jan.	3	Wed. (8 a. m.)	Exercises resumed.
Jan. 29–Feb. 7		Mon.–Wed.	Final examinations, first semester.
Feb.	8–9	Thur.–Fri.	Registration days.
Feb.	12	Monday	Lectures and recitations begin.
Feb.	22	Thursday	Washington's birthday: legal holiday.
April	4–8	Thur.–Mon.	Easter recess.
May	30	Thursday	Memorial Day: legal holiday.
June	8–14	Sat.–Fri.	Final examinations, second semester.
June	13–14	Thur.–Fri.	Examinations for admission.
June	16–19	Sun.–Wed.	Commencement week.

THE REGENTS

CHARLES R. VAN HISE, *President of the University, Ex-officio.*
CHARLES P. CARY, *State Superintendent of Public Instruction, Ex-officio.*

	TERM EXPIRES
STATE-AT-LARGE—GILBERT E. SEAMAN, Milwaukee,	1913
STATE-AT-LARGE—W. D. HOARD, Fort Atkinson,	1912
FIRST DISTRICT—A. J. HORLICK, Racine,	1913
SECOND DISTRICT—T. E. BRITTINGHAM, Madison,	1914
THIRD DISTRICT—J. W. MARTIN, Gotham	1913
FOURTH DISTRICT—THEODORE M. HAMMOND, Wauwatosa,	1914
FIFTH DISTRICT—JAMES F. TROTTMAN, Milwaukee,	1914
SIXTH DISTRICT—MISS ELIZABETH F. WATERS, Fond du Lac,	1914
SEVENTH DISTRICT—EDWARD EVANS, La Crosse,	1914
EIGHTH DISTRICT—MRS. FLORENCE G. BUCKSTAFF, Oshkosh,	1913
NINTH DISTRICT—E. A. EDMONDS, Appleton,	1913
TENTH DISTRICT—GRANVILLE D. JONES, Wausau,	1912
ELEVENTH DISTRICT—A. P. NELSON, Grantsburg,	1912

Officers of the Regents

JAMES F. TROTTMAN, *President.*
A. P. NELSON, *Vice President.*
A. H. DAHL, State Treasurer, *Ex-officio Treasurer.*
H. C. BUMPUS, *Business Manager.*
M. E. MCCAFFREY, *Secretary.*
L. J. PICKARTS, *Bursar.*
EDNA FEWSON, *Purchasing Agent.*

THE BOARD OF VISITORS

1910-1911

State at Large

E. Ray Stevens, Madison.

S. Y. Gillan, Milwaukee.

Charles B. Rogers, Fort Atkinson.

Congressional Districts

1st District, M. E. Walker, Racine.

2nd District, Charles F. Lamb, Madison, Chairman.

3rd District, Jane Lloyd-Jones, Hillside.

4th District, Clarke M. Rosencrantz, Milwaukee.

5th District, H. C. Schranck, Milwaukee.

6th District, Fred C. Clausen, Horicon.

7th District, John Brindley, La Crosse.

8th District, Rose C. Swart, Oshkosh.

9th District, Thomas H. Ryan, Appleton.

10th District, Chas. C. Parlin, Wausau.

11th District, H. H. Grace, Superior.

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; *Agron. 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; *Elec. Lab.*, Electrical Laboratory; *F. P. L.*, Forest Products Laboratory; *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. H.*, Music Hall; *M. S.*, Machine Shops; *N. H.*, North Hall; *Sc. H.*, Science Hall; *S. H.*, South Hall; *U. H.*, University Hall.

VAN HISE, CHARLES RICHARD, Ph. D., LL. D., President of the University. *U. H.* 158. 772 Langdon

PARKINSON, JOHN BARBER, M. A., Vice-president of the University. *Emeritus* Professor of Constitutional Law. 516 Wisconsin Ave.

ALEXANDER, SEPTIMUS ALEXANDER, F. H. A. S., M. D. C., Professor of Veterinary Science. *Stock Pavilion.* 811 Spaight

ALLEN, BENNET MILLS, Ph. D., Assistant Professor of Anatomy. *Sc. H.*, Room C. 710 Conklin Pl.

ALLEN, CHARLES ELMER, Ph. D., Professor of Botany. *Sc. H.*, 44. 2014 Chamberlain

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

BARDEEN, CHARLES RUSSELL, B. A., M. D., Dean of the Medical School. Professor of Anatomy. *Sc. H., Room H.* 23 Mendota Ct.

BASSETT, HARRY KENDALL, M. A., Assistant Professor of English. *U. H.* 118. 110 Spooner

BEATTY, ARTHUR, Ph. D., Assistant Professor of English. *U. H.* 363. 1824 Vilas

BEEBE, MURRAY CHARLES B. S., Professor of Electrical Engineering. *E. B.* 206. 211 Langdon

BENKENDORF, GUSTAV HENRY, B. S., Assistant Professor of Dairy Husbandry. *H. S. H.* 101. Hiram Smith Hall

BENNETT, EDWARD, E. E., Associate Professor of Electrical Engineering. *Elec. Lab.* 2. 419 Sterling Ct.

BIRGE, EDWARD ASAHEL, Ph. D., Sc. D., LL. D., Dean of the College of Letters and Science. Professor of Zoology. *S. H.* 2. 744 Langdon

BLACKWELDER, ELIOT, B. A., Associate Professor of Geology. *Sc. H.* 35. 1632 Jefferson

BLEYER, WILLARD GROSVENOR, Ph. D., Assistant Professor of Journalism. *U. H.* 67. 625 Langdon

*BOESEL, FRANK TILDEN, Ph. B., LL. B., Lecturer in Law. *L. B.* 3. 179–34th St., Milwaukee

BRADLEY, HAROLD CORNELIUS, Ph. D., Assistant Professor of Physiological Chemistry. *C. E. B.* 213. Prospect Ave. and Van Hise

BRISTOL, H. STANLEY, Ph. D., Lecturer in Forestry. *F. P. L.* 6. 237 Langdon

BROWN, WADE HAMPTON, B. S., M. D., Assistant Professor of Pathology. Instructor in Medical Bacteriology. *S. H.* 43. 1629 Jefferson

BUNTING, CHARLES HENRY, B. S., M. D., Professor of Pathology. *S. H.* 47. 1804 Madison

BURGESS, CHARLES FREDERICK, E. E., Professor of Chemical Engineering. *C. E. B.* 103. 1601 Adams

BUTLER, RALPH STARR, B. A., Assistant Professor of Business Administration. *U. H.* 320. 811 W. Johnson

CAIRNS, WILLIAM B., Ph. D., Assistant Professor of American Literature. *U. H.* 367. 2010 Madison

CARPENTER, JAIRUS HARVLIN, LL. D., Mortimer M. Jackson Professor of Contracts, *Emeritus.* 315 Wisconsin Ave.

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* Appointed January 18, 1911.

CERF, BARRY, Ph. D., Assistant Professor of Romance Languages. *U. H.* 304. 432 Frances

CHASE, WAYLAND JOHNSON, M. A., Associate Professor of History. *U. H.* 209. 141 Summit Ave.

CHRISTIE, ALEXANDER GRAHAM, Assistant Professor of Steam Engineering. *E. B.* 73. 271 Langdon

CLINE, MCGARVEY, M. E., Director of the Forest Products Laboratory. Lecturer in Forestry. *F. P. L.* 4. 803 State

COERNE, LOUIS ADOLPHE, Ph. D., Mus. D., Director of the School of Music. Professor of the History and Science of Music. *M. H.* 1. 302 N. Murray

*COFFIN, VICTOR, Ph. D., Assistant Professor of European History. *U. H.* 209. 1919 Arlington Pl.

COLE, LEON J., Ph. D., Associate Professor of Experimental Breeding. *A. H.* 51. 1815 University Ave.

COMMONS, JOHN ROGERS, M. A., Professor of Political Economy. *Lib.* 118. 224 N. Murray

*COMSTOCK, GEORGE CARY, Sc. D., LL. D., Director, Washburn Observatory. Director, Graduate School. Professor of Astronomy. *U. H.* 162. Observatory Hill

COOK, WALTER WHEELER, M. A., LL. M., Lecturer in Law. *L. B.* 6917 Bennett Ave., Chicago, Ill.

CRAWSHAW, FRED DUANE, M. E., Professor of Manual Arts. *U. H.* 219. 1631 Madison

CUNLIFFE, JOHN WILLIAM, D. Lit., Professor of English. *U. H.* 354. 625 Mendota Ct.

DANIELLS, WILLIAM WILLARD, Sc. D., *Emeritus* Professor of Chemistry.

DAVIS, GEORGE JACOB, JR., C. E., Assistant Professor of Hydraulic Engineering. *Hyd. Lab.* 1731 Regent

DELWICHE, EDMOND JOSEPH, M. S., Assistant Professor of Agronomy. *Agron. B.* Ashland, Wis.

DENNIS, ALFRED LEWIS PINNEO, Ph. D., Professor of European History. *U. H.* 206, *Lib.* 123. 518 Wisconsin Ave.

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* On leave of absence, second semester, 1910–11.

*Denniston, Rollin Henry, Ph. D., Assistant Professor of Botany. *Sc. H.* 51. 803 State

Dickinson, Thomas Herbert, Ph. D., Associate Professor of English. *U. H.* 365. 212 W. Gilman

Dobson, Josie Helen, M. D., Medical Examiner, *Medical Adviser's Office*, 821 State. 419 Sterling Ct.

Dodge, Robert Elkin Neil, M. A., Assistant Professor of English. *U. H.* 365. 15 W. Gorham

Doolittle, Frederick William, B. A., B. S., Assistant Professor of Mechanics. *E. B.* 115. 204 N. Brooks

Dowling, Linnaeus Wayland, Ph. D., Assistant Professor of Mathematics. *U. H.* 255. 2 Roby Road

Dudgeon, Matthew Simpson, M. A., LL. B., Director of the Wisconsin Library School. Instructor in Library Administration. Instructor in Political Science. *U. H.* 117. 2012 Jefferson

Dudley, William Henry, B. A., Assistant Librarian. *Lib.* 1909 Regent

Ehler, George W., C. E., Professor of Physical Education. Director of the Department of Physical Education. *Gym.* 424 N. Pinckney

Elliott, Edward Charles, Ph. D., Director of the Course for the Training of Teachers. Professor of Education. *U. H.* 123. 137 Prospect Ave.

Elsom, James Claude, M. D., Assistant Professor of Physical Education. *Gym.* 1614 Jefferson

*Ely, Richard Theodore, Ph. D., LL. D., Professor of Political Economy. *S. H.* 23. 205 Prospect Ave.

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Evans, Marshall Blakemore, Ph. D., Associate Professor of German. *N. H.* 33. 18 Mendota Ct.

Eyster, John Augustine English, B. S., M. D., Professor of Physiology. *C. E. B.* 214. 625 Mendota Ct.

Farrington, Edward Holyoke, M. S., Professor of Dairy Husbandry. *H. S. H.* 301. 315 N. Mills

Fischer, Richard, Ph. D., Professor of Chemistry. *C. B.* 324. 119 E. Johnson

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* On leave of absence, second semester, 1910–11.

FISH, CARL RUSSELL, Ph. D., Professor of History. *U. H.* 208. 625 Mendota Ct.

†FISKE, GEORGE CONVERSE, Ph. D., Associate Professor of Latin. *U. H.* 267. 237 Langdon

FLINT, ALBERT STOWELL, M. A., Astronomer, Washburn Observatory. *Observatory.* 450 Charter

FREEMAN, JOHN CHARLES, LL. D., *Emeritus* Professor of English Literature. 222 Langdon

FROST, WILLIAM DODGE, Ph. D., Associate Professor of Bacteriology. *S. H.* 22. 310 Bruen

FULLER, CALEB ALLEN, Ph. D., Assistant Professor of Bacteriology. *S. H.* 31. 128 Lathrop

FULLER, JAMES GARFIELD, B. S., Assistant Professor of Animal Husbandry. *A. H.* 50. 1924 Kendall Ave.

GAGE, OTIS AMSDEN, Ph. D., 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.

GILMAN, STEPHEN WARREN, LL. B., Professor of Business Administration. Adviser of Foreign Students. *N. H.* 82. 410 N. Livingston

GILMORE, EUGENE ALLEN, B. A., LL. B., Professor of Law. *L. B.* 143 Prospect Ave.

GODDARD, ARTHUR LAURENCE, B. S., Superintendent of Shops. Assistant Professor of Mechanical Practice. *M. S.* 1812 Monroe

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HADLEY, FREDERICK BROWN, D. V. M., Assistant Professor of Veterinary Science. *Stock Pavilion.* 426 N. Bruen

HALL, LELAND BOYLSTON, B. A., Assistant Professor of Pianoforte and History of Music. *M. H.* 3. 113 N. Charter

† On leave of absence, second semester, 1910–11.
* On leave of absence, academic year, 1910–11.

HALL, WILLIAM LOGAN, M. S., Assistant Forester, U. S. Forest Service. Lecturer in Forestry. *F. P. L.* 415 Park St.

HALPIN, JAMES GARFIELD, B. S., Assistant Professor of Poultry Husbandry. *A. H.* 48. 2014 Monroe

*HARPER, ROBERT ALMER, Ph. D., Professor of Botany. *Sc. H.* 39. 2140 University Ave.

HART, EDWIN BRET, B. S., Professor of Agricultural Chemistry. *A. H.* 57. 302 Lathrop

HART, WALTER WILSON, B. A., Assistant Professor of Mathematics. *U. H.* 251. 415 Park

HASTINGS, EDWIN GEORGE, M. S., Associate Professor of Agricultural Bacteriology. *A. H.* 20. 1906 W. Lawn Ave.

HATCH, KIRK LESTER, B. S., Assistant Professor of Agricultural Education. Secretary of the Agricultural Extension. *A. H.* 29. 302 Chamberlain Ave.

HAVARD, FRANCIS THOMPSON, E. M., Assistant Professor of Mining Engineering. *E. B.* 211. 1910 Madison

HAWLEY, LEE FRED, Ph. D., Lecturer in Forestry. *F. P. L.* 420 Charter

HENMON, VIVIAN ALLEN CHARLES, Ph. D., Associate Professor of Education. *U. H.* 13. 21 Mendota Ct.

HENRY, WILLIAM ARNON, D. Agr., D. Sc., *Emeritus* Professor of Agriculture. *A. H.* 62. 429 Sterling Ct.

HOHLFELD, ALEXANDER RUDOLPH, Ph. D., Professor of German. *N. H.* 27. 104 Breese Terrace.

HOLDEN, EDWIN CHAPIN, E. M., Professor of Mining Engineering. *E. B.* 213. 1920 Arlington Pl.

†HOLMES, SAMUEL JACKSON, Ph. D., Assistant Professor of Zoology. *Sc. H.* 57. 2002 Madison

HOOL, GEORGE ALBERT, B. S., Assistant Professor of Structural Engineering. *U. H.* 101. 612 Howard Pl.

HUBBARD, FRANK GAYLORD, Ph. D., Professor of the English Language. *U. H.* 355. 227 Langdon

‡HUMPHREY, CLARENCE JOHN, B. A., B. S. C., Lecturer in Forestry. *F. P. L.* 1324 W. Dayton

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* On leave of absence, second semester, 1910–11.
† On leave of absence, first semester, 1910–11.
‡ Appointed March 25, 1911.

HUMPHREY, GEORGE COLVIN, B. S., Professor of Animal Husbandry. *A. H.* 48B. 438 University Farm Pl.

HUTCHINS, FRANK AVERY, Secretary, Department of Debating and Public Discussion. University Extension. *U. H.* 154. 435 Lake

INGERSOLL, LEONARD ROSE, Ph. D., Associate Professor of Physics. *Sc. H.* 13. 810 Oakland Ave.

JANSKY, CYRIL METHODIUS, B. A., B. S., Associate Professor of Electrical Engineering. *U. H.* 101. 2117 Jefferson

JASTROW, JOSEPH, Ph. D., Professor of Psychology. *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 Professor of Soils. *H. P. B.* 105. 313 Mills

JONES, LEWIS RALPH, Ph. D., Sc. D., Professor of Plant Pathology. *A. H.* 45B. 1938 Kendall Ave.

JUDAY, CHANCEY, M. A., Lecturer in Zoology. *Sc. H.* 43. 308 Breese Terrace

KAHLENBERG, LOUIS, Ph. D., Director of the Course in Chemistry. Professor of Chemistry. *C. B.* 103. 234 Lathrop

KELLY, FREDERICK THOMAS, Ph. D., Assistant Professor of Hebrew and Hellenistic Greek. *S. H.* 8. 224 N. Brooks

KEOWN, ROBERT MCARDLE, B. S. Assistant Professor of Machine Design. *E. B.* 227. 118 Spooner

KERR, ALEXANDER, M. A., *Emeritus* Professor of the Greek Language and Literature. *U. H.* 265. 140 Langdon

KIND, JOHN LOUIS, Ph. D., Assistant Professor of German. *N. H.* 27. 419 Sterling Ct.

KINNE, WILLIAM SPAULDING, B. S., Assistant Professor of Structural Engineering. *E. B.* 311. 271 Langdon

†KOELKER, WILLIAM FREDERICK, Ph. D., Assistant Professor of Chemistry.

KREMERS, EDWARD, Ph. G., Ph. D., Director of the Course in Pharmacy. Professor of Pharmaceutical Chemistry. *C. B.* 303. 1720 Vilas

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* On leave of absence, second semester, 1910-11.
† On leave of absence, academic year, 1910-11

LAIRD, ARTHUR GORDON, Ph. D., Associate Professor of Greek and Comparative Philology. *U. H.* 263. 21 Mendota Ct.

LATHROP, HENRY BURROWES, B. A., Associate Professor of English. *U. H.* 355. 1404 W. Washington Ave.

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, Correspondence Study Department. *U. H.* 154. 2006 Monroe

LLOYD-JONES, CHESTER, Ph. D., Associate Professor of Political Science. *U. H.* 319. 412 N. Carroll

LOEVENHART, ARTHUR SOLOMON, M. S., M. D., Professor of Pharmacology and Toxicology. *C. E. B.* 300. 1111 Rutledge

LUENING, EUGENE, Associate Professor of Voice Culture and Theory. *M. H.* 11. 1606 Madison

*LYMAN, ROLLO LU VERNE, B. A., Associate Professor of Rhetoric and Oratory. *U. H.* 204. 139 W. Gilman

MCBAIN, HOWARD LEE, Ph. D., Associate Professor of Political Science. *U. H.* 319. 301 S. Pinckney

MCCARTHY, CHARLES, Ph. D., Lecturer in Political Science. *Capitol* 417. 321 W. Wilson

MCCOLLUM, ELMER VERNER, Ph. D., Associate Professor of Agricultural Chemistry. *A. H.* 59. 1910 Adams

MCCOY, RALPH, Captain, U. S. Army. Professor of Military Science and Tactics. *Armory* 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.* 225. 110 E. Johnson

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* On leave of absence, academic year, 1911-12.

MARLATT, ABBY LILLIAN, M. S., Professor of Home Economics. *Lathrop.* 212 Howard Pl.

MARQUETTE, WILLIAM GEORGE, Ph. D., Assistant Professor of Botany. *Sc. H.* 66. 542 W. Johnson

MARSHALL, WILLIAM STANLEY, Ph. D., Associate Professor of Entomology. *Sc. H.* 58. 139 E. Gilman

MARTIN, LAWRENCE M. A., Assistant Professor of Physiography and Geography. *Sc. H.* 26. 222 W. Gilman

MASON, MAX, Ph. D., Professor of Mathematical Physics. *Sc. H.* 3. 152 W. Gorham

MAURER, EDWARD ROSE, B. C. E., Professor of Mechanics. *E. B.* 113. 167 Prospect Ave.

MAYHEW, ABBY SHAW, Assistant Professor of Physical Education. *Lathrop,* 4th floor. 209 N. Brooks

MEAD, DANIEL WEBSTER, C. E., Professor of Hydraulic and Sanitary Engineering. *E. B.* 218. 1015 University Ave.

MEAD, WARREN JUDSON, M. A., Assistant Professor of Geology. *Sc. H.* 27A. 212 Howard Pl.

†MEANWELL, WALTER ERNEST, M. D., Assistant Professor of Physical Education. *Gym.* 1st floor. 407 Wisconsin Ave.

MEEK, WALTER JOSEPH, Ph. D., Assistant Professor of Physiology. *C. E. B.* 214. 810 W. Johnson

MENDENHALL, CHARLES ELWOOD, Ph. D., Professor of Physics. *Sc. H.* 17. Observatory Hill

*MEYER, BALTHASAR HENRY, Ph. D., Professor of Political Economy. *Capitol.* 1937 Arlington Pl.

MILLAR, ADAM VAUSE, M. S., Assistant Professor of Drawing. *E. B.* 403. 1011 Grant

MILLER, ERIC REXFORD, Local Forecaster, U. S. Weather Bureau. Lecturer in Meteorology. *N. H.* 84. 419 Sterling Ct.

MILLER, WILLIAM SNOW, M. D., Associate Professor of Anatomy. *Sc. H.* Room G. 803 State

MOORE, JAMES GARFIELD, M. S., Associate Professor of Horticulture. *H. P. B.* 202. 809 Grant

MOORE, RANSOM ASA, Professor of Agronomy. *Agron. B.* 28. 202 S. Warren

† Appointed February 1, 1911.
* Resigned January 1, 1911.

MOORE, WILLIAM UNDERHILL, M. A., LL. B., Professor of Law. *L. B.*, 2d floor. 2011 Monroe

MUNRO, DANA CARLETON, M. A., Professor of European History. *Lib.* 123. 630 Frances

NORGORD, CHRISTIAN PERCIVAL, B. S., Assistant Professor of Agronomy. *Agron. B.* 24. 1214 W. Johnson

NORRIS, EARLE B., M. E., Assistant Professor of Mechanical Engineering. *U. H.* 403. 301 Johnson Ct.

OCOCK, CHARLES ALBERT, B. S., Assistant Professor of Agricultural Engineering. *A. E. B.* 108. R. F. D. 6

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 the 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.

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PARKER, FLETCHER ANDREW, *Emeritus* Professor of Music. *M. H.* 5. 14 W. Gilman

PAXSON, FREDERIC LOGAN, Ph. D., Professor of American History. *U. H.* 208. 629 Frances

†PEIRCE, GEORGE JAMES, Ph. D., Professor of Botany. *Sc. H.* 39. 11 E. Gilman

PENCE, WILLIAM DAVID, C. E., Professor of Railway Engineering. *E. B.* 220. 168 Prospect Ave.

PHILLIPS, JAMES DAVID, B. S., Assistant Dean of the College of Engineering. Professor of Drawing. *E. B.* 302. 1925 W. Lawn Ave.

PRICE, JOHN REESE, B. S., Assistant Professor of Electrical Engineering. *Elec. Lab.* 15 S. Bassett

PROKOSCH, EDUARD, Ph. D., Assistant Professor of German and Comparative Philology. *N. H.* 39. 1155 Edgewood Ave.

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† Appointed January 18, 1911.

*Pyre, James Francis Augustine, Ph. D., Associate Professor of English. *U. H.* 367.

Rastall, Benjamin McKe, Ph. D., Associate Professor of Business Administration. *U. H.* 320. 204 N. Brooks

Ravenel, Mazyck Porcher, M. D., Director of the State Hygienic Laboratory. Professor of Bacteriology. *S. H.* 21 and 48; *A. H.* 35. 419 Sterling Ct.

Reber, Louis Ehrhart, M. S., Sc. D., Dean of the Extension Division. *U. H.* 157. 636 Frances

Reed, Frank Otis, Ph. D., Assistant Professor of Romance Languages. *U. H.* 306. 1910 Jefferson

†Reinsch, Paul Samuel, Ph. D., Professor of Political Science. *Lib.* 121. 423 Wisconsin Ave.

Richards, Harry Sanger, LL. B., LL. D., Dean of the Law School. Professor of Law. *L. B.* 640 Frances

Roe, Frederick William, Ph. D., Assistant Professor of English. Chairman of Freshman Advisers. *U. H.* 107. 218 W. Gilman

Roedder, Edwin Carl Lothar Clemens, Ph. D., Associate Professor of German Philology. *N. H.* 26. 1627 Jefferson

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

Sammis, John Langley, Ph. D., Assistant Professor of Dairy Husbandry. *H. S. H.* 303 A. 234 Breese Terrace

Sanborn, John Bell, Ph. D., Lecturer in Law. *L. B.* 3. 1010 Grant

Sanders, James Glossbrenner, M. A., Assistant Professor of Economic Entomology. *Dairy Annex.* 444 Charter

Schlatter, Edward Bunker, Ph. D., Assistant Professor of Romance Languages. *U. H.* 307. 1619 Jefferson

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* On leave of absence, academic year, 1910–11.
† On leave of absence, academic year, 1911–12.

*Scott, Robert Bruce, Ph. B., Professor of Law. *L. B.* 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., Professor of European History. Director of the Summer Session. *U. H.* 209. Cor. Van Hise and Prospect Ave.

Sharp, Frank Chapman, Ph. D., Professor of Philosophy. *U. H.* 106. 27 Mendota Ct.

Showerman, Jesse Grant, Ph. D., Professor of Latin. *U. H.* 266. 410 N. Butler

Shuster, John Wesley, B. S., Assistant Professor of Electrical Engineering. *E. B.* 203. 235 W. Gilman

Skinner, Ernest Brown, Ph. D., Associate Professor of Mathematics. *U. H.* 255. 210 Lathrop

Slaughter, Moses Stephen, Ph. D., Professor of Latin. *U. H.* 267. 21 Mendota Ct.

Slichter, Charles Sumner, M. S., Professor of Applied Mathematics. *U. H.* 254. 446 W. Wilson

Smith, Charles Forster, Ph. D., LL. D., Professor of Greek and Classical Philology. *U. H.* 263. 1715 Kendall Ave.

Smith, Howard Leslie, B. A., LL. B., Professor of Law. *L. B.* 11. E. Gilman

Smith, Hugh Allison, M. A., Professor of Romance Languages. *U. H.* 309. 15 Prospect Ave.

Smith, Kenneth Gardner, B., A., B. S., District University Extension Representative. Milwaukee. 211–214 *E. B.* 133 Second St., Milwaukee

Smith, Leonard Sewall, C. E., Associate Professor of Topographic and Geodetic Engineering. *E. B.* 107. 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, Anna Garlin, New York School of Philanthropy. Special Lecturer in Political Economy. 2006 Monroe

* On leave of absence, first semester, 1910–11. Resigned February 1, 1911.

STERLING, SUSAN ADELAIDE, M. L., Assistant Professor of German. *N. H.* 31. 109 W. Washington Ave.

STONE, ALDEN LESCOMBE, Assistant Professor of Agronomy. *Agron. B.* 29. 1614 Hoyt

*SWEETLAND, EDWIN REGUR, B. S., Ph. M., LL. B., Assistant Professor of Physical Education. *Gym.* 110 E. Dayton

TAYLOR, HENRY CHARLES, Ph. D., Professor of Agricultural Economics. *A. H.* 51. 222 Spooner

TERRY, EARLE MELVIN, Ph. D., Assistant Professor of Physics. *Sc. H.* 9. 1127 Bowen Ct.

THOMAS, CARL CLAPP, M. E., Professor of Steam Engineering. *E. B.* 223. 633 N. Francis

THORKELSON, HALSTEN JOSEPH BERFORD, M. E., Associate Professor of Steam Engineering. *E. B.* 224. 1526 W. Washington Ave.

THWAITES, REUBEN GOLD, LL. D., Lecturer in History. *Lib.* 205. R. F. D. 4, Turvilwood

TIEMANN, HARRY DONALD, M. E., M. F., Lecturer in Forestry. *F. P. L.* 16. 1610 Adams

TOTTINGHAM, WILLIAM EDWARD, M. S., Assistant Professor of Agricultural Chemistry. *A. H.* 6 A. 404 N. Henry

TRESSLER, ALBERT WILLIS, B. A., Inspector of Schools. *U. H.* 119. 2 W. Gorham

TURNEAURE, FREDERICK EUGENE, C. E., Dean of the College of Engineering. *E. B.* 112. 166 Prospect Ave.

URDAHL, THOMAS K., Ph. D., Professor of Political Economy. *S. H.* 23. 1532 University Ave.

†VAN VLECK, EDWARD BURR, Ph. D., LL. D., Professor of Mathematics. *U. H.* 254. 519 N. Pinckney

VOSS, ERNST KARL JOHANN HEINRICH, Ph. D., Professor of German Philology. *N. H.* 26. 446 N. Charter

‡VOSSKUEHLER, JOSEPH HENRY, M. E., Assistant Professor of Machine Design. *E. B.* 226. 418 Francis

WAGNER, GEORGE, M. A., Assistant Professor of Zoology. *Sc. H.* 50. 1901 Jefferson

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* On leave of absence, second semester, 1910-11.
† On leave of absence, first semester, 1910-11.
‡ Resigned February 15, 1911.

WALTON, JAMES HENRI, JR., Ph. D., Assistant Professor of Chemistry. *C. B.* 108. 419 Sterling Ct.

WARD, EDWARD JOSHUA, M. A., Acting Secretary of the Welfare Department of the University Extension. *U. H.* 101. 144 Breese Terrace

WATSON, JAMES WEBSTER, B. S., Assistant Professor of Electrical Engineering: *E. B.* 202. 212 Howard Pl.

WATTS, OLIVER PATTERSON, Ph. D., Assistant Professor of Applied Electrochemistry. *C. E. B.* 106. 418 S. Mills

WEISS, HOWARD FREDERICK, Ph. B., Lecturer in Forestry. *F. P. L.* 10. 803 State

WESTERMANN, WILLIAM LINN, Ph. D., Associate Professor of History. *U. H.* 207. 21 Mendota Ct.

WHITBECK, RAY HUGHES, B. A., Assistant Professor of Physiography and Geography. *Sc. H.* 38. 905 W. Johnson

WHITSON, ANDREW ROBISON, B. S., Professor of Soils. *H. P. B.* 204. 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., Professor of Mineralogy and Petrology. *Sc. H.* 31. 218 N. Park

WITHEY, MORTON OWEN, C. E., Assistant Professor of Mechanics. *E. B.* 66. 1633 Madison

WOLFF, HENRY CHARLES, Ph. D., Assistant Professor of Mathematics. *U. H.* 65. 6 S. Prospect Ave.

WOLL, FRITZ WILHELM, Ph. D., Professor of Agricultural Chemistry. Chemist to Experiment Station. *A. H.* 43. 408 N. Charter

*WOODWARD, CORA STRANAHAN, Adviser of Women. *Lathrop.* Chadbourne Hall

WOOLLEY, EDWIN CAMPBELL Ph. D., Assistant Professor of English. *U. H.* 214. 1716 Hoyt

YOUNG, KARL, Ph. D., Associate Professor of English. *U. H.* 367. 113 N. Charter

ZDANOWICZ, CASIMIR DOUGLAS, Ph. D., Assistant Professor of Romance Languages. *U. H.* 307. 1818 Madison

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* Resigned April 20, 1911.

INSTRUCTORS AND ASSISTANTS

ADAMS, ALBERT P., Assistant in Music. M. H. 6. Delafield, Wis.

ALBRIGHT, VICTOR EMANUEL, Ph. D., Instructor in English. *U. H.* 361. 312 Breese Terrace

ALLEN, FLORENCE ELIZA, Ph. D., Instructor in Mathematics. *U. H.* 253. 228 Langdon

ARMSTRONG, VERMILLION ALBERTIE, Assistant in Bacteriology. *S. H.* 31. 1124 W. Johnson

ASHMUN, MARGARET ELIZA, M. A., Instructor in English. *U. H.* 361. 310 N. Murray

ASTON, JAMES, Ch. E., Instructor in Chemical Engineering. *C. E. B.* 105. 102 Spooner

ATKINS, WILLIAM GARRETT, Battalion Sergeant Major, U. S. Army, Retired. Assistant to Commandant and Armorer. *Armory* 6. 1227 Mound

AUGSPURGER, LOUIS FRED, M. A., Assistant in Chemistry. *C. B.* 206. 271 Langdon

AVERILL, GEORGE B., JR., B. A., Instructor in Business Administration. 211–214 *E. B.* 133 Second St., Milwaukee

BACHMAN, FREDA MARIE, M. A., Assistant in Botany and Plant Pathology. *Sc. H.* 47. 310 Bruen

*BAER, ARTHUR CHRISTOPHER, Assistant in Dairying. *Dairy Annex.* 420 N. Charter

BAILEY, DANA CLARK, B. A., Assistant in European History. *Lib.* 123, *U. H.* 210. 248 Langdon

BAILEY, WILLIAM LOUIS, M. A., Instructor in Political Science. *U. H.* 321. 752 Langdon

BAKER, ROSS ALLEN, M. A., Assistant in Chemistry. *C. B.* 105. 310 Johnson Ct.

†BANNING, BERNICE THORNTON, M. A., Assistant in Greek. *U. H.* 263. 310 N. Murray

BARNEBY, OSCAR LEONARD, M. A., Assistant in Chemistry. *C. B.* 206. 408 N. Francis

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* Appointed January 18, 1911.
† Appointed December 7, 1910.

BARRY, THOMAS A., Ph. B., LL. B., Instructor in Physical Education. *Gym.* 115 W. Mifflin

BASCOM, LELIA, B. L., Instructor in English. *U. H.* 101. 419 Sterling Ct.

BEAN, ERNEST F., B. A., Assistant in Geology. *Sc. H.* 27. 901 University Ave.

†BEECHER, BENJAMIN SANFORD, B. A., Assistant in Political Economy. *N. H.* 80. 620 Lake

BELL, HERBERT CLIFFORD, Ph. D., Instructor in European History. *U. H.* 207. 504 N. Henry

BELSKY, CHARLES JAMES, B. S., Assistant in Electrical Engineering. *Elec. Lab.* 306 Murray

BERGGREN, AXEL E., B. S., Instructor in Steam and Gas Engineering. *E. B.* 221. 27 W. Dayton

BERGMAN, MINNIE LOUISE, Instructor in Music. *M. H.* 7. 426 Charter

BERKELEY, FRANCES CAMPBELL, M. A., Instructor in English. *U. H.* 363. 616 Lake

BERNSTEIN ISAAC, Trainer, Department of Physical Education. *Gym.* 1306 W. Dayton

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BIRGE, RAYMOND THAYER, M. A., Assistant in Physics. *Sc. H.* 23. 610 Lake

BLACK, WILLIAM, B. S., Instructor in Steam and Gas Engineering. *E. B.* 72. 126 E. Dayton

BLAKE, GEORGE BARNES, B. S., Assistant in Electrical Engineering. *E. B.* 207. 441 Lake

BRANDT, JOSEPH GRANGER, Ph. B., Instructor in Latin. *U. H.* 267. 204 N. Brooks

BRUNS, FRIEDRICH, Ph. D., Instructor in German. *N. H.* 35. 423 N. Butler

BUCHANAN, HERBERT EARLE, Ph. D., Instructor in Mathematics. *U. H.* 65. 1610 Madison

BURGESS, HORACE THOMAS, Ph. D., Instructor in Mathematics. *U. H.* 65. 1029 University Ave.

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† Appointed January 30, 1911.

BURKE, MARY HICKMAN, M. A., Assistant in Botany. 426 N. Charter

BURRITT, CHARLES GLENN, B. S., Instructor in Railway Engineering. *E. B.* 220. 306 N. Murray

BUTLER, ORMOND ROURKE, Ph. D., Instructor in Horticulture. *H. P. B.* 202. 419 Sterling Ct.

CARPENTER, MARY FRANCES, B. L., Instructor, Wisconsin Library School. *Madison Free Lib. Bldg.* 21 E. Wilson

CASE, LEROY CLARENCE, Mus. S., Instructor in Music. *M. H.* 10. 314 Breese Terrace

CATTELL, JAMES LLEWELLYN, B. A., Instructor in Romance Languages. *U. H.* 308. 1619 Jefferson

CHALLONER, AGNES, B. A., Assistant in Home Economics. *Lathrop*, 403. 625 Mendota Ct.

CHAMBERLIN, ROBERT ROY, B. A., Assistant in Physics. *Sc. H.* 24. 115 N. Broom

COOL, CHARLES DEAN, Ph. D., Instructor in Romance Languages. *U. H.* 306. 1607 Adams

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CURTIS, NORMAN PHILIP, B. S., Instructor in Railway Engineering. *E. B.* 304. 20 Prospect Ave.

CUSTER, JOHN SHERMAN, B. A., Assistant in European History. *Lib.* 123; *U. H.* 210. 130 N. Hancock

CUTLER, JOSEPH ALBERT, B. S., Instructor in Topographic Engineering, *E. B.* 53. 306 Murray

DACY, GEORGE HAROLD, B. S., Assistant Agricultural Editor. Assistant in Physical Education. *A. H.* 26. 630 Lake

DAHM, THOMAS MATTHEW, M. A., Assistant in Physics. *Sc. H.* 23. 820 W. Johnson

*DAVIES, HOWELL DAVID, M. A., Instructor in Hebrew and Hellenistic Greek. *S. H.* 7. 1130 Chandler

DEIHL, JOSEPH DWIGHT, B. A., Instructor in German. *N. H.* 36. 208 N. Murray

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* Appointed December 7, 1911.

DELWICHE, OCTAVE JOSEPH, Assistant in Animal Husbandry. *Stock Pavilion.* Stock Pavilion

DEMING, HORACE GROVE, M. S., Instructor in Chemistry. *C. B.* 106. 435 Warren

*DIEFENDERFER, ALAN LEWIS, B. A., M. D., Instructor in Clinical Medicine. 821 *State.* 821 State

DIETRICHSON, GERHARD, B. S., B. A., Assistant in Chemistry. *C. B.* 105. 408 N. Frances

DIEZ, MAX, M. A., Assistant in German. *N. H.* 36. 1309 Morris

DIKE, PAUL HARRISON, M. S., Assistant in Physics. *Sc. H.* 9a. 227 Langdon

DISQUE, ROBERT CONRAD, B. L., B. S., Instructor in Electrical Engineering. *E. B.* 204. 507 N. Carroll

DONDO, MATHURIN MARIUS, M. A., Assistant in Romance Languages. *U. H.* 214. 342 N. Frances

DRESDEN, ARNOLD, Ph. D., Instructor in Mathematics. *U. H.* 253. 1120 W. Johnson

DRYZER, FRANK MOSES, M. A., Assistant in Mathematics. *U. H.* 65. 116 N. Charter

EASTMAN, IRENE BELL, Mus. B., Instructor in Music. *M. H.* 4. 302 N. Murray

ELLINGSON, EMIL OSCAR, M. A., Instructor in Chemistry. *C. B.* 105. 1204 W. Washington Ave.

ELLIOTT, GEORGE ROY, Ph. D., Instructor in English. *U. H.* 366. 207 W. Gilman

ERNST, FREDERIC, B. A., Assistant in French. *U. H.* 214. 441 W. Gorham

ESTEY, JAMES ARTHUR, B. A., Assistant in European History. *Lib.* 123, *U. H.* 210. 235 W. Gilman

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FORSYTHE, WILLIAM ELMER, M. S., Instructor in Physics. *Sc. H.* 9. 325 W. Dayton

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* Appointed February 1, 1911.

FOX, EDGAR WILSON, Assistant in Dairy Husbandry. *Dairy Barn.* 432 Lorch

FRAZER, GEORGE ENFIELD, B. A., Instructor in Business Administration. *U. H.* 318. 901 University Ave.

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GALLAND, JOSEPH STANISLAS, M. A., Assistant in Romance Languages. *U. H.* 214 and 101. 216 N. Brooks

GARDNER, EDWARD HALL, M. A., Instructor in English. *U. H.* 214. 316 Breese Terrace

GARNER, HARRISON LEVI, C. E., Instructor in Hydraulic Engineering. *E. B.* 219. 1015 W. Johnson

*GEE, WILSON PARHAM, M. A., Assistant in Zoology. *Sc. H.* 61. 301 Murray

GELTCH, WALDEMAR VON, Mus. B., Instructor in Music. *M. H.* 6. 11 W. Gorham

GILBERT, EDWARD M., Ph. B., Instructor in Botany. *Sc. H.* 54. 305 N. Livingston

GILLETT, ORSON CLARKE, University Editor. *U. H.* 61. 271 Langdon

GILMER, HAROLD WRIGHT, B. A., Assistant in Latin. *U. H.* 264. 1124 W. Johnson

GLAETTLI, JOHN, JR., B. S., Instructor in Structural Engineering. E. B. 309. 207 N. Mills

GRABER, LAURENCE FREDERICK, B. S., Assistant in Agronomy. *Agron. B.* 220 N. Brooks

GRADY, JULIA RICKETTS, Student Assistant in Home Economics. *Lathrop,* 407. 810 E. Gorham

GRAY, LEWIS CECIL, M. A., Instructor in Political Economy. *N. H.* 80. 102 Spooner

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HAERTEL, MARTIN HENRY, Ph. D., Instructor in German. *N. H.* 37. 1927 W. Lawn Ave.

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HAUSSMANN, JOHN FRED, Ph. D., Instructor in German. *N. H.* 35. 1214 W. Johnson

* Resigned March 31, 1911.

HAYES, JOHN ROBERT, B. A., Assistant in Commerce. *N. H.* 80. 15 E. Gorham

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HEDDLE, JOHN RONALD, B. A., Assistant in Botany. *Sc. H.* 41. 822 W. Johnson

HEIDENGER, HENRY W., B. S., Instructor in Mechanical Engineering. Extension Division. Oshkosh, Wis.

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HELM, HAROLD MCMURDO, B. A., Assistant in Anatomy. *Sc. H.*, Room B. 430 Frances

HERRICK, LOUIS ROWELL, M. A., Instructor in Romance Languages. *U. H.* 308. 217 N. Mills

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HOFFMANN, CONRAD, B. S., Instructor in Agricultural Bacteriology. *A. H.* 35B. 728 W. Johnson

HOLLANDER, LEE M., Ph. D., Instructor in German. *N. H.* 36. 814 Jenifer

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*HOPKINS, PRINCE CHARLES, M. A., Assistant in Physics. *Sc. H.* 23. 225 S. Mills

HOPPER, WALTER EVERETT, M. A., Instructor in Geology. *Sc. H.* 27. 1029 University Ave.

HOYT, EDITH EVANS, M. A., Assistant in Education. *U. H.* 120. 938 W. Johnson

HUBBARD, WINFIELD SCOTT, Ph. G., M. A., Assistant in Chemistry. *C. B.* 309. 1018 Mound

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* Resigned December, 1910.

HYATT, CHAUNCEY ADELBERT, Student Assistant in Physical Education. *Gym.* 31. 740 Langdon

HYDE, GRANT MILNOR, B. A., Instructor in English, *U. H.* 66. 919 University Ave.

IMHOFF, ONO MARY, B. A., Instructor in Public Documents. *Leg. Ref. Lib.* 310 N. Murray

*JAHR, MARVIN E., B. A., Assistant in Soils. *H. P. B.*, 1st floor. 1108 W. Johnson

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JESSUP, WALTER E., B. A., Assistant in Railway Engineering. *E. B.* 304. 402 Murray

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JOHNSON, IDA PETRINE, B. A., Assistant in German. *N. H.* 36. 1106 W. Johnson

JOHNSON, JAMES, B. S., Assistant in Horticulture. *H. P. B.* 303. 130 N. Mills

†JOHNSON, JUSTIN LE ROY, Student Assistant in Physical Education. *Gym.* 625 Frances

JOHNSON, SIDNEY EGBERT, B. S., Instructor in Mechanics. *E. B.* 66. 408 N. Frances

KARTAK, FRANZ AUGUST, B. S., Instructor in Electrical Engineering. *Elec. Lab.* 124 W. Dayton

KAY, HARRY M., M. D., Instructor in Clinical Medicine. *Gym.* 827 University Ave.

KENNEDY, HELEN THERESA, B. L. S., Instructor in Classification, Library Economy and Children's Work. *Madison Free Lib. Bldg.* 515 State

KERCHENSTEINER, MARK JOSEPH, M. A., Assistant in Business Administraion. *N. H.* 80. 602 Frances

KEYSER, CLARENCE, B. S., Assistant in Mathematics. *U. H.* 253. 608 W. Dayton

‡KILLEBREW, CINCINNATUS DECATUR, M. S., Assistant in Physics. *Sc. H.* 23. 710 Langdon

KING, WILLFORD ISBELL, M. A., Assistant in Political Economy. *S. H.* 25B. 218 N. Mills

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* Appointed February 1, 1911.
† Appointed December 30, 1910.
‡ Appointed February, 1911.

KLEIN, DAVID, Ph. D., Instructor in Chemistry. *C. B.* 107. 1018 Mound

KLEINHEINZ, FRANK, Instructor in Animal Husbandry. *Sheep Barn.* 412 N. Charter

KLINGER, WILLIAM AUGUST, B. S., Instructor in Mechanical Drawing. *E. B.* 405. 1104 W. Johnson

KOENIG, ALFRED EDWARD, M. A., Assistant in Chemistry. *C. B.* 105. 318 S. Henry

KOLINSKY, PETER CHARLES, Student Assistant in Physical Education. *Gym.* 315 Lake

KOMMERS, JESSE BENJAMIN, B. S., Instructor in Mechanics. *E. B.* 62. 712 Harrison

KOWALKE, OTTO LOUIS, Ch. E., Instructor in Chemical Engineering. *C. E. B.* 104. 808 Oakland Ave.

KRACHER, FRANCIS WALDEMAR, M. A., Assistant in German. *N. H.* 36. 211 N. Henry

KRAUSKOPF, FRANCIS CRAIG, Ph. D., Instructor in Chemistry. *C. B.* 107. 201 N. Murray

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LENT, WILMAR FRANCIS, B. S., Research Assistant in Electrical Engineering. *Elec. Lab.* 610 Francis

LEWISOHN, LUDWIG, M. A., Instructor in German *N. H.* 36. 118 W. Dayton

LITTLETON, JESSE TALBOT, JR., M. A., Assistant in Physics. *Sc. H.* 9. 1814 Madison

LLOYD-JONES, ORREN, B. S., Assistant in Agricultural Chemistry. 1015 W. Johnson

LOMER, GERHARD RICHARD, Ph. D., Instructor in English. *U. H.* 357. 625 Mendota Ct.

LOOMIS, ALICE MARIE, M. A., Assistant in Home Economics. *Lathrop*, 403. 716 State

LOWRIE, SELDEN GALE, M. A., Instructor in Political Science. *Capitol*, 417. 139 W. Gilman

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* Appointed April 1, 1911.

LYNN, ELDIN VERNE, M. A., Assistant in Chemistry. *C. B.* 305. 819 W. Johnson

McCHESNEY, HARLAN D., Instructor in Physical Education. *Gym.* 2nd floor. 19 N. Henry

McCOLLOUGH, ETHEL FARQUHAR, B. L. S., Instructor in Book Selection and Library Administration. *Madison Free Lib. Bldg.* 121 W. Wilson

McDONALD, VANETTA, Herbarium Assistant. *Sc. H.* 51. 406 Murray

MacGILL, CAROLINE ELIZABETH, B. A., Instructor in Political Economy. *U. H.* 101. 606 N. Francis

MacGREGOR, FORD HERBERT, B. A., Instructor in Political Science. *U. H.* 318. 215 N. Brooks

McKEE, MARY ROSE, B. A., Assistant in Physical Education. *Lathrop*, 4th floor. 343 W. Main

MACLIN, EDWARD SILVER, Instructor in Drawing. *E. B.* 405. 1011 Grant

MALDE, OLE GUSTAVUS, Assistant in Charge of the Cranberry Investigation. *H. P. B.* Grand Rapids, Wis.

MANCHESTER, FREDERICK ALEXANDER, M. A., Instructor in English. *U. H.* 214. 221 S. Mills

MANN, CHARLES AUGUST, B. S., Assistant in Pharmacy and Chemistry. Assistant in Music. Leader of Regimental Band. *M. H., C. B.* 310. *Armory* 34–35. 924 Clymer Pl.

MARKEY, WILLIAM ERWIN, Assistant in Animal Husbandry. *A. H.* 48. Stock Pavilion

MARQUIS, JOHN CLYDE, M. S., Agricultural Editor. Instructor in Agricultural Journalism. *A. H.* 26. 1812 Ray

MARTY, GOTTLIEB, Assistant in Dairy Husbandry. *H. S. H.* 625 W. Johnson

MATHEWS, JOSEPH HOWARD, Ph D., Instructor in Physical Chemistry. *C. B.* 317. 419 Sterling Ct.

MEAD, LEONARD CHARLES, Student Assistant in Physical Education. *Gym.* 911 W. Johnson

MEHNER, ALBERT HUGO, B. A., Assistant in Physics. *Sc. H.* 23. 219 N. Bassett

MELHUS, IRVING E., B. S., Assistant in Botany and Plant Pathology. *A. H.* Room B. 1216 Spring

MERCIER, LOUIS JOSEPH ALEXANDER, M. A., Instructor in Romance Languages *U. H.* 308. 2018 Madison

MERRILL, HARRIET BELL, M. S., Assistant in Zoology. *Sc. H.* 43. 212 Howard Pl.

MICHELL, ROBERT BELL, M. A., Instructor in Romance Languages. *U. H.* 308. 450 Charter

MILLARD, EARL BOWMAN, B. A., Assistant in Chemistry. *C. B.* 826 W. Dayton

MILLER, ARTHUR HERBERT, M. E., Instructor in Mechanics. *E. B.* 62. 314 N. Bassett

MILWARD, JAMES GARFIELD, M. S., Instructor in Horticulture. *H. P. B.* 1818 Madison

MOOTS, ELMER EARLE, B. C. E., M. S., Instructor in Mathematics. *U. H.* 65. 202 N. Brooks

MOREY, NELLIE DEXTER, Ph. B., Assistant in Botany. *Sc. H.* 47. 621 N. Francis

MORGAN, BAYARD QUINCY, Ph. D., Instructor in German. *N. H.* 36. 444 Charter

NEBEL, WALTER, B. S., Assistant in Chemistry. *C. B.* 309. 331 W. Mifflin

NEIDIG, WILLIAM JONATHAN, B. A., Instructor in English. U. H. 366. 418 Frances

*NEILSON, ALLEN SAMUEL, B. L., Instructor in English. *U. H.* 214. 234 Langdon

NELSON, OLIVER OTTO, B. A., Instructor in Bacteriology. *S. H.* 33A. 126 S. Hancock

NESPOR, ZDENEK, Instructor in Physical Education. *Gym.* 2nd floor. 419 Sterling Ct.

NETZEL, ARTHUR FRANK, Ph. G., Assistant in Pharmacy and Pharmaceutical Botany. *C. B.* 216. 432 W. Johnson

NEYSTROM, PAUL HENRY, Ph. M., District Representative, Second District University Extension. *Castle Pierce Bldg., Oshkosh.* 27 High St., Oshkosh, Wis.

OOSTERHUIS, ALVIN CECIL, M. S., Assistant in Animal Husbandry. *A. H.* 48. 226 Brooks

ORTH, HERBERT DENNY, B. S., Instructor in Mechanical Drawing. *E. B.* 404. 932 Clymer Pl.

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* Resigned February 15, 1911.

OTTO, MAXWELL CHARLES, M. A., Instructor in Philosophy. *U. H.* 106. 316 Lake

OWEN, RALPH WOODLAND, B. Lit., Instructor in English. *U. H.* 214. 625 Mendota Ct.

OWEN, ROY SPRAGUE, B. S., Instructor in Civil Engineering. *E. B.* 104. 2120 Monroe

PACKARD, HORACE N., B. S., Instructor in Mechanical Engineering, 211–214. *E. B.* 133 Second St., Milwaukee

PARKER, EUSTACE EDWIN, B. S., Instructor in Structural Engineering. *E. B.* 310. 223 S. Mills

PARKINSON, MAUDE MARSHALL, B. A., Assistant in French. *U. H.* 325. 435 Warren

PARRY, JAMES WILLIAM, B. S., Instructor in Mechanical Engineering. *U. H.* 453. 416 N. Butler

PERROW, EBER CARLE, Ph. D., Instructor in English. *U. H.* 366. 180 Lakeside

PETERSEN, MARIUS SMITH, B. S., Assistant in Physiology and Pharmacology. *C. E. B.* 211. 1104 W. Johnson

PETERSON, PETER POWELL, Ph. D., Instructor in Soils. *H. P. B.* 305. 932 Clymer Pl.

PETERSON, WILLIAM HAROLD, M. A., Instructor in Agricultural Chemistry. *A. H.* 6. 404 N. Henry

PETTIJOHN, JOHN J., Acting Secretary, Department of Instruction by Lectures. *U. H.* 101. 1110 Mound

PITMAN, ANNIE MARIE, Ph. D., Instructor in Greek and English. *U. H.* 101. 414 N. Henry

PURIN, CHARLES MALTADOR, M. A., Instructor in German. *N. H.* 36. 1310 Mound

REGAN, ALICE, Instructor in Music. *M. H.* 5. 321 S. Hamilton

*READ, BENJAMIN KILLEY, B. S., Instructor in Machine Design. *E. B.* 226. 354 W. Washington Ave.

REINHARD, EUGENE, Ph. D., LL. D., Instructor in German. *U. H.* 104. 446 N. Charter

RICE, WILLIAM FRANCIS, B. A., Assistant in Education. *U. H.* 123. 350 W. Main

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RIEDER, RUDOLPH THEODORE, Student Assistant in German. *N. H.* 36. 1309 Morris

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* Appointed February, 1911.

ROADS, SAMUEL HARDIN, B. S., Assistant in Physics. *Sc. H.* 23. 1814 Madison

ROBINSON, WILLIAM ALEXANDER, M. A., Assistant in American History. *U. H.* 210. 740 Langdon

ROEBUCK, JOHN RANSOM, Ph. D., Instructor in Physics. *Sc. H.* 3. 1226 Mound

ROGERS, AUGUSTUS JAMES, JR., M. S., Instructor in Horticulture. *H. P. B.* 301. Horticultural Physics Bldg.

ROOS, CHRISTOPHER, Assistant in Clinical Medicine. 821 *State.* 821 State

ROOT, WINFRED TREXLER, Ph. D., Instructor in American History. *Lib.* 123. 915 University Ave.

ROSENBERG, PHILIP, B. S., Assistant in Physics. *Sc. H.* 23. 1814 Madison

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RUNDELL, OLIVER SAMUEL, LL. B., Instructor in Law. *L. B.* 338 W. Main

SANDBERG, INGA G., Mus. B,, Instructor in Music. *M. H.* 3. 426 N. Charter

SANFORD, HERBERT BROOKS, B. S., Instructor in Electrical Engineering. *Elec. Lab.* 5. R. F. D. 6

SAUGSTAD, JESSE, Assistant in Music. *M. H.* 6. Portage, Wis.

SCHINDLER, JESSIE GERTRUDE, B. A., Assistant in Public Speaking and English. *U. H.* 204. 620 Langdon

SCHUETTE, HENRY AUGUST, B. S., Assistant in Chemistry. *C. B.* 322. 924 Clymer Pl.

SCHWENKER, CALVIN FLOYD, Student Assistant in Business Administration. *N. H.* 80. 609 Lake

SCOTT, ALMERE LOUISE, Assistant, Department of Debating and Public Discussions. Instructor in Library Work. *U. H.* 151. 422 W. Dayton

SECRIST, HORACE, M. A., Instructor in Political Economy. *N. H.* 51. 318 Lake

SEXTON, CHARLES RICHARD, Student Assistant in Business Administration. *N. H.* 80. 126 Langdon

SHAW, LEON IRWIN, M. S., Instructor in Chemistry. *C. B.* 106. 271 Langdon

SIEVERS, FRED JOHN, B. S., Instructor in Soils. *H. P. B.* 206. 128 N. Mills

SIMMERS, CHARLES LUTHER, B. A., Assistant in Education. *U. H.* 120. 11 W. Gorham

SIMPSON, GEORGE, B. S., Assistant in Physics. *Sc. H.* 23. 312 N. Bassett

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SINCLAIR, ALICE MAY, B. A., Assistant in Botany. *Sc. H.* 47. 109 W. Dayton

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SMITH, GLEN EDWARD, B. S., Assistant in Electrical Engineering. *E. B.* 207. 403 N. Murray

STARCH, DANIEL, Ph. D., Instructor in Psychology and Education. *U. H.* 13. 230 W. Gilman

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STEPHENS, GEORGE WARE, M. A., Assistant in Political Economy. *N. H.* 80. 607 Conklin Pl.

STEVE, WILLIAM FREDERICK, M. A., Instructor in Physics. *Sc. H.* 23. 1216 W. Johnson

STOTHART, HERBERT, Assistant in Musical Dramatics. *M. H.* 16. 451 W. Johnson

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*STREET, IDA MARIE, M. A., Assistant in English. *U. H.* 214. 1120 W. Johnson

TARRELL, ARCH LEROY, B. A., Assistant in Physics. *Sc. H.* 23. 421 W. Gilman

TAYLOR, EUGENE, M. A., Assistant in Mathematics. *U. H.* 65. 424 Frances

THIESSEN, FRANK CARLTON, B. S., Assistant in Drawing. *U. H.* 426. 1124 W. Johnson

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* Resigned February 15, 1911.

TIEFENTHALER, LEO FRANCIS, M. A., Assistant in Political Science. *U. H.* 319. 1104 W. Johnson

TORMEY, JOHN LAWLESS, B. S., Instructor in Animal Husbandry. *Stock Pavilion.* Stock Pavilion

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VAN VALZAH, ROBERT, B. A., M. D., Instructor in Clinical Medicine. 821 *State.* 821 State

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* Appointed December 30, 1910.
† Appointed January 18, 1911.
‡ Appointed March 25, 1911.

WEGEL, RAYMOND LESTER, B. A., Assistant in Physics. *Sc. H.* 23. 430 Francis

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* Resigned March 31, 1911.

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* Resigned February 15, 1911.

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ASSISTANTS, STATE HYGIENIC LABORATORY

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HARRIS ROY T., Assistant in Dairy Tests, Feed and Fertilizer Inspection. *A. H.* 43. 1710 Jefferson

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DORRANS, JAMES MORGAN, Instructor in Pattern-making. *M. S.* 1020 E. Johnson

GABRIEL, PETER JACOB, Assistant in Forge Room. *M. S.* 426 W. Gorham

SLADKY, PAUL, Instructor in Mechanical Practice. *M. S.* 701 W. Dayton

ZURIAN, GEORGE, Assistant in Forge Shop. *M. S.*, 80 University Ave.

OTHER OFFICERS

*Bumpus, Hermon C., Sc. D., Ph. D., LL. D. Business Manager. *Adm. B.* 1937 Arlington Pl.

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 and Grounds. *Adm. B.* 817 W. Johnson

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Camp, Elizabeth Frances, B. A., Matron of Lathrop Hall. *Lathrop.* 422 N. Murray

Alvord, Katharine Sprague, M. A., Mistress of Chadbourne Hall. Chadbourne

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* Appointed January 18, 1911.

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Graduate School—Professor Comstock, chairman; Professors Ely, L. R. Jones, Kahlenberg, Slaughter.

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Astronomy,	Professor Comstock.
Bacteriology,	Professor Ravenel.
Botany,	Professor Harper.
Chemistry,	Professor Kahlenberg.
Education,	Professor O'Shea.
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Music,	Professor Coerne.
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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 Burlington, 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 minmum 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 of 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 Commissioner of Education. His policy centered in elevating the pub-

lic 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 Uni-

versity 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 legislature 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 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 build-

ing, 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 possible, 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 Summer Session.

The College of Letters and Science embraces—

- General Courses in Liberal Arts.
- Special Courses, which include:
  - Chemistry.
  - Commerce.
  - Journalism.
  - Library Training Courses.
  - Manual Arts.
  - 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 Law School embraces—

A THREE YEARS' COURSE.

The Medical School 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.

The Summer Session embraces—

COURSES IN THE VARIOUS COLLEGES AND SCHOOLS OF THE UNIVERSITY.

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 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 was completed in 1910. 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 Music 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 Shops and the old Central Heating Plant, both built in 1885. The old heating plant has been remodeled into a laboratory for the use of the Department of Mining Engineering and is used for the work in metallurgy, assaying, etc. To the north of the Machine Shop, and abutting the lake, is the 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. During the present year a four story addition to the Engineering Building was completed which has materially added to the facilities of the College. The addition contains class rooms, drafting rooms and offices, and also space for the engineering library and a number of seminary rooms. 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. The plant contains at present 7 water tube boilers of 350 H. P. each, and is provided with conveyors for conveniently filling the bins above the boilers with coal and for removing ash from the stokers. The stokers are mechanically operated, and, because of this, two men can look after the fires and water in the boilers. The bins above the boilers have a total capacity for four thousand tons of coal, and in addition storage is provided for two thousand more. The chimney is 250 feet in height by 14 feet inside diameter. It is designed to be large

enough for the boiler plant when the building is filled with twelve 350 H. P. boilers, and also, when an addition for eight more boilers of the same capacity is built south of the chimney. The steam is generated at the plant at 115 pounds pressure, and is distributed through tunnels and conduits to the various buildings of the University. This high pressure is required as the water works station has steam driven pumps. For heating purposes, the pressure is reduced as the steam enters the buildings.

Directly east of the heating plant is the new four-story shop and storehouse building. The building is 75 feet wide by 60 feet deep and is for storage purpose and the use of University workmen. The first floor, with the exception of the office, is devoted to the storage of Portland cement and there is space for 25 carloads of 200 barrels each. The second floor is occupied by the University electricians, painters, plumbers, and sheet metal workers and the third floor by the carpenters and cabinet makers. The fourth floor is for the storage of miscellaneous University supplies.

Just 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 the catalogue devoted to the College of Agriculture. The dairy laboratory, 40 by 80 feet, adjoining Hiram Smith Hall on the east, was completed this year. It includes offices, class rooms and large laboratories for instruction in dairying. 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.

The Horticultural Building, now in process of construction, will stand west of the Agricultural Engineering Building, facing

north on Magnolia Drive. This building will include two stories and basement, 48 by 128 feet in size, which will provide quarters for the departments of Horticulture and Plant Pathology. South of the Horticultural Building are located the Potting Houses and four new green houses completed this year.

South of the University farm lies the grounds of the Poultry Department upon which the Poultry Building 30 by 56 feet in extent, was erected this year, together with laying houses, breeding pens and a number of portable colony houses for the University flocks.

Two miles to the west lies the Hill Farm of about 300 acres, used primarily for experimental purposes for which modern farm buildings have been planned. A barn 36 by 106 feet and a large storage shed have been erected.

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 Forest Products Laboratory, erected in 1909 and 1910 for the use of the Forest Service of the United States Department of Agriculture, is on the northeast corner of Camp Randall. The building is devoted almost exclusively to laboratory and office purposes and forms the center for investigations in forest utilization for the whole United States.

Southeast of University Hall, just below the crest of University Hill, is being erected a new Biology Building. It is to be faced with buff sandstone like that in University Hall and the general architectural style closely approaches that of University Hall. The building is to be of fireproof construction throughout.

The extreme length of the building is 240 feet, the width through the centre portion is 56 feet and through the east and west wings 40 feet. In the central part of the building will be the museum which will occupy two floors and will be surrounded on three sides by a gallery giving access to the laboratories and other adjacent rooms. South of the central portion will be an octangular auditorium 50 feet in diameter and south of this are the greenhouses attached to the laboratories under the auditorium. For the department of zoology a vivarium will be constructed near the southeast corner of the building and connected by a passageway with an out-door garden and pool for obtaining natural conditions for aquatic creatures. On the third

floor will be located the large laboratories for the botany department while the fourth floor will be devoted to the library and reading rooms, seminary rooms, and some of the smaller laboratories. The slope of the hillside gives the building the advantage of two basements. The upper basement will be occupied by the zoology department on the east and the botany department on the west. The lower basement will be occupied by the botany department.

LABORATORIES

ANATOMICAL LABORATORIES.—There are laboratories devoted to human anatomy, vertebrate anatomy, histolgy, 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, milammeter, 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 storerooms. 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.

ENGINEERING LABORATORIES.—For a detailed description of the engineering laboratories see College of Engineering.

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 coun-

tries, 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 LABORATORIES.—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 dyna-

mos 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 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 coelenerata.

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 420,000 and the number of pamphlets exceeds 208,000.

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, affords most convenient accommodations 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, alloted 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 rooms are shelved several thousand reference and "reserved" books. To these, as well as to the large collection of general periodicals in the 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 175,000 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 endorsed by the librarian.

The Law School has a special library of 18,000 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 11,000 volumes is located on the first floor of Agricultural Hall. The engineering library is located on the first floor of the Engineering Building.

The library of the State Historical Society contains over 166,000 volumes and 168,000 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 Science, 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.

The State Law Library in the Capitol numbers about 50,000 volumes. Students are allowed to draw books from the Madison Free Library, a well selected collection of over 24,000 volumes.

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, Ph. 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 Herbene 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 1,000 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 various 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 algæ, lichens, and mosses. The collection of mosses nas 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 exsiccati are included. The collection of algæ and parasitic fungi contains the principal North American exsiccati 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 echinoderns, 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 ex-

change 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 information; 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.

FOREST PRODUCTS LABORATORY

The Forest Products Laboratory is a laboratory of practical research conducted by the Forest Service of the United States Department of Agriculture for the purpose of studying problems bearing on the more complete and efficient use of the products of the forest. The laboratory is conducted in cooperation with the University of Wisconsin; the University furnishing, without cost to the Service, the buildings and yard space needed; also the heat, light, water, gas and power required for operation. The Forest Service furnishes all equipment, bears all operating ex-

penses and employs the force of fifty or more persons required to carry on the work.

The staff of the laboratory cooperates with the faculty of the University in presenting the course of lectures outlined under Wood Technology. The facilities of the laboratory are also available to advanced students and members of the faculty for research work in the field of forest utilization.

In its equipment the laboratory approximates commercial conditions much more closely than is ordinarily done in laboratory work. It therefore affords unusual facilities for reliable tests of commercial processes. The technical sections of the laboratory are as follows: (1) Timber Physics. In this section the structural and physical properties of wood are studied, including the effect of various methods of drying and handling. (2) Timber Tests. This section investigates the strength, stiffness, hardness and other mechanical properties of commercial woods. (3) Wood Preservation. Studies are made in this section of the character and efficiency of various preservatives and methods of applying them to different woods. (4) Wood Distillation. The practicability of securing by-products of commercial value from the various forms of wood waste is the main problem of this section. (5) Wood Pulp. The section of wood pulp is concerned with the testing of woods to determine their fiber qualities and their value for pulp. (6) Chemistry. The work in this section is to investigate the chemical properties of woods and the products secured from them; also the properties of preservatives and other materials used in the treatment of wood. (7) Engineering. This section has to do mainly with the design of machines for utilizing wood waste among the industries which employ it as a material.

The Laboratory conducts much cooperative work in connection with the industries which utilize the products of the forest. It has become already a well known institution and brings the University into prominence as an important center in the movement for the conservation and improved utilization of the forest. Because of the importance of the work and the large force maintained the Forest Service has made the Laboratory the headquarters of the Branch of Products. The Assistant Forester in charge of this Branch is stationed here and from headquarters in the Laboratory building directs the work of the Branch in all parts of the country.

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 following the twentieth Wednesday of the college year. 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 Department of Clinical Medicine has general supervision of the care of students needing medical attention. The office is at 821 State Street, Telephone 240.

A careful examination is made of the physical condition of those who seek consultation. Students who need care along special lines (diseases of the eye, ear, major surgery, etc.), are referred to specialists. At least one call will be made on request

of students confined to the house by illness. Personal care of students confined to the house by protracted severe illness can be given, however, merely in exceptional cases. As a rule it is expected that in cases of prolonged illness the services of a local physician will be secured. It is earnestly desired that all cases of student illness be promptly reported at the office of the Medical Adviser and that students should feel free to seek consultation concerning 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 special 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

The will of Mrs. Amelia H. Doyon, late of Madison, provided for a gift to the University of $5,000 to be known as the Amelia H. Doyon Fund. The income from this fund is divided into two equal parts, 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 scholarship or standing of the persons selected and their need of financial help are both taken into consideration. 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.

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.

For honors in the College of Letters and Science, see page 000

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 profit 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, Dowling 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.

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 seminaries. The graduate students of the University maintain a Graduate Club. The University Press Club, the Cubs' Club, the Advertising Club and the Hoard Press Club are composed of stu-

dents preparing for journalism. Delta Alpha is a professional fraternity whose members are students interested in journalism while Theta Sigma Phi is the professional journalistic sorority. 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 bimonthly 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 re-

garding other publications of the University may be obtained on application to the University Librarian.

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 monthly publication of the engineering students; and the Wisconsin Country Life Magazine, 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 96.

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 88, 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	½, 1, 1½, 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	½ or 1 unit
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	½ unit
Zoology	1 or 2 units

VOCATIONAL SUBJECTS (See note below).... ½, 1, 2, 3, or 4 units
Agriculture (See note below)..... 1, 2, 3, or 4 units
Commercial Work (See note below).. ½, 1, 2, 3, or 4 units
(Including Commercial Law ½ unit; Commercial Geography ½ unit, and Economics ½ unit.)
Domestic Science (See note below)..... 1, 2, 3, or 4 units
Manual Arts (See note below)..... 1, 2, 3, or 4 units
OPTIONAL SUBJECT (See note 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.

VOCATIONAL SUBJECTS (Including Agriculture, Commercial Work, Domestic Science, and Manual Arts).—Not more than a total of four units in vocational subjects may be presented. These units may be within any one group or may be made up of such a combination of work from the different groups as may be approved by the University. Work in any of the vocational groups will be accepted for admission only after inspection and approval by the University.

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

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 90	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; excepting that no units may be offered in domestic science. 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. Two or three years of high school Latin will be accepted as satisfying one-half the entrance requirement in language.

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.

LAW SCHOOL.—(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, and provided such candidates are at least twenty-one years of age.

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 complete 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 suffi-

cient 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. 145.

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, Shakspere, 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) Shakspere'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;* Maucaulay'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 1½ units. The unit is required of all students and should include the following subjects: Addition substraction, 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; 1st arithemetical and geometrical progressions.

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.

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

½ unit, *solid geometry.* A half year of solid geometry following a year of plane geometry will be credited ½ unit.

For admission to the College of Engineering either the combination course or 1½ units of plane and solid geometry is required.

TRIGONOMETRY. ½ unit. The important properties of the trigonometic 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 trigonometic tables.

An additional credit of ½ to 1 unit may be given to students who have had further work in algebra, trigonometry and surveying, 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. ½ 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, ½ unit, may be offered under Civics.

Economics. ½ unit. A knowledge of the fundamental principles of economic science as presented in a good elementary treatise on the subject.

Commercial Geography, ½ 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 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 topo-

ghaphic 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 units.

PHYSIOLOGY. ½ 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 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*, books I–IV, or an equivalent; *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*, books I–IV, or an equivalent; composition. Students who present two units and others whose preparation in Latin is, for any reason, deficient may continue the study in the University with Course A or Course B, which may be credited towards the bachelor's degree and used to satisfy the University's language requirements. The work recommended in the report of the Cleveland Commission on College Entrance Requirements in Latin is accepted by the University. No such credit will be given for 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 conservation 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.

VOCATIONAL SUBJECTS

(Including Agriculture, Commercial Work, Domestic Science, and Manual Arts.)

Owing to the present state of development of the vocational subjects in the high school curriculum no specific conditions are indicated for Agriculture, Domestic Science, Commercial Work, or Manual Arts. The acceptance of work from any school for admission to the University will be based upon a special inspection; and the approval of courses will be dependent primarily upon adequate equipment and efficiency of instruction.

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 in the state 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, prepared 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 ad-

mitted 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.

SCHOOLS OUTSIDE OF WISCONSIN.—The following regulations will apply to graduates of schools from without the state:

1. Graduates of secondary schools outside of Wisconsin, included in the current list of accredited schools of the North Central Association, will be admitted when properly recommended and certified; provided, that the minimum admission requirements of the University be fulfilled in all cases.

2. Graduates of other secondary schools outside of Wisconsin will be admitted when properly recommended and certified; provided, (a) That the school maintains on the basis of regular inspection accredited relationship with the state university, or other university located within the state, included in the membership of the Association of American Universities. In all instances the state university shall maintain the same standard of admission requirements as those institutions belonging to the Association of American Universites.

(b) That the minimum admission requirements of the University of Wisconsin be fulfilled both as regards number of units and character of work. In such cases the character of the work submitted shall be interpreted to mean an average standing of Good.

Credentials properly certified by the principal should, in all cases, be submitted for approval by the University *before August 1st.*

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. Blank forms for this purpose are provided by the University and transfer records from other institutions are required to be made out on these forms and submitted for consideration in advance of the opening of the University.

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 of the requirements for admission and are not candidates for a degree, are permitted to enter the College of Letters and Science and the College of Agriculture upon giving satisfactory evidence that they are prepared to take advantageously the studies which they desire. Such students are expected to select their studies from courses open to freshmen. If they desire to take studies to which only advanced students of these colleges are regularly admitted, they must show special preparation or special necessity for such courses. This privilege is granted in the College of Engineering only to such students as are able, on examination, to meet all of the entrance requirements in mathematics. The privilege of admission on the adult basis is not granted in the Law School.

Candidates applying for admission on the above basis are required to present a detailed statement of their preparatory studies at the time of their admission.

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 Department of Military Science, the Secretary of the Regents is au-

thorized 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	$35 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	$35 00
Incidental fee for all students, per semester	17 00

College of Engineering

Resident tuition	FREE
Non-resident tuition, per semester	$35 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	$35 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

Law School

Resident tuition	FREE
Non-resident tuition, per semester	$35 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 semester. The fees for human anatomy are: osteology, $2; dis-

section, $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 students pay a laboratory fee of $5, non-resident, $15. 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. A uniform gymnasium costume is required and can be purchased in the fall at the gymnasium office. Price $5.00.

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 (AGRICULTURE).

BACHELOR OF SCIENCE, HOME ECONOMICS 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, CHEMISTRY 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.

GRADUATE IN AGRICULTURE, upon graduates from the two year course in Agriculture.

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. 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 bachelors' 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, Chemical Engineer or Mining 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 per week or two hours of regularly prescribed military drill or physical training are equal to one credit. 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 physical training during the first two years and secure a total of 4 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 physical training per week during the first two years and secure 8 credits. The total requirements for class room work, military drill and physical training are, therefore, 128 credits.

Each student is required to take recitation and laboratory work to an amount which will give 14-16 credits per semester, besides military drill and physical training in the case of students from whom these exercises are required. A student who desires to secure fewer than 14 credits must apply for permission through his adviser to the dean. In case a student has received grades of *good* in all studies of the preceding semester, he may take extra studies to an amount not exceeding 18 credits. No students 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.

For the special requirements of candidates for the degree of

B. A. in the Commerce Course or the Medical Course see announcement under those heads.

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 two or three units of language at entrance. Those who offer less than two must also make up deficiency in preparation by extra work, see p. 86. 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 de-

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* 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.

termine 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's adviser and filed with the chairman of the department in which the candidate is taking his major. 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 4 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.

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 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 credits, two semesters.
Latin: 5 or 3 credits, two semesters.
German: 4 credits, two semesters.
French: 4 credits, two semesters.
Spanish: 4 credits, two semesters (only 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 credits, one semester.
Trigonometry: 3 credits, one semester.
These courses in mathematics are repeated each semester.

Science:
Biology: 5 credits; 2 semesters; 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; 1 semester. (This course can not be offered as part of required science.)

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 I (6 to 10 credits), with one subject from Group II (3 to 5 credits); or by taking but one for-

eign 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 only two years of language preparation will be expected to continue this preparatory language 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, and 2A, Mathematics 1 and 2, History 1, 5, and 10, Biology 1, Chemistry 1, Physics 1, Geology 3, and 4, Astronomy 1. The last named course cannot constitute a part of the required science.

Candidates for the degree of Bachelor of Arts are allowed to elect in the College of Mechanics and Engineering, the College of Agriculture (including the Course in Home Economics), the Law School, or the State Library School, studies to an amount not exceeding the equivalent of 20 credits. The conditions under which these studies may be elected are as follows:

1. Before electing studies in other colleges the candidate for the degree of Bachelor of Arts must have completed the work of freshman and sophomore years in the College of Letters and Science, including those studies which come normally in freshman and sophomore years.

2. Studies in other colleges may be elected only by students who spend at least two full years in attendance at the University before receiving the bachelor's degree. They may not be elected by students from other institutions who enter the University with a higher rank than that of junior, or by students who through correspondence study reduce the amount of required attendance at the University below two years.

3. Certain courses primarily intended for students of other colleges (such as mathematics 101) are listed in the departmental announcements of the College of Letters and Science. Such courses are open to any student of suitable preparation in the same way as the courses primarily intended for the students of the College of Letters and Science.

4. Courses in other colleges and schools which are parallel to courses offered in the College of Letters and Science may not be elected without the consent of the dean of the College of Letters and Science.

5. Not more than 5 of the 20 credits may be secured in either semester of the junior 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.)

Students who have completed the regular four years' course of the Course in Chemistry will receive the degree of *Bachelor of Science, Chemistry 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 18 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 necesssity 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 foreign 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 susequent 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 6 credits.

Candidates for the degree of *Bachelor of Arts* who desire to graduate in three years may do so by obtaining 17 or 18 credits per semester after the first semester of freshman year, and by attending three summer sessions, thus securing a total of 120 credits. 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.

The *minimum period of residence study* required for the bachelor's degree is one college year of two semesters. Attendance on Summer Sessions cannot be substituted for the whole or part of this *minimum* period of residence.

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; Assitant Professor Allen; Mr. Helm.

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

For Undergraduates and Graduates

5. Comparative Anatomy of Vertebrates. *First semester; Tu., Th., S.*, 9 to 11. *Second semester; M., W., F.*, 1:30 to 3:30. Mr. Allen.
6. Medical Zoology. *Second semester; Tu., Th.*, 1:30 to 3:30. *Two credits.* Mr. Allen.
10. Histology and Organology. *First semester; M., W., F.*, 9 to 12. *Four credits.* Dr. Miller.
15. Vertebrate Embryology. *Second semester; Tu., Th., S.*, 8 to 10. *Thr e credits.* Dr. Bardeen, Mr. Allen.
16. Embryology of the turtle and chick. *First semester; Tu., Th.*, 1:30 to 3:30. *Two credits.* Mr. Allen.
21. Human Anatomy. *Throughout the year; daily* 8 *to* 5. *Six credits per semester.* Dr. Bardeen.
22. Topographical Anatomy. *Second semester; Tu., Th.*, 1:30 to 4:30. *Three credits.* Dr. Miller.
23. Special Human Anatomy.
26. Neurology. *Second semester; M., W.*, 8 to 11. *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.*, 2:30.

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 and Sanitary 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.*

Open to election by students who have completed course 6.

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

BACTERIOLOGY AND HYGIENE

PROFESSOR RAVENEL; ASSOCIATE PROFESSORS FROST, HASTINGS; ASSISTANT PROFESSOR FULLER, MR. NELSON, MR. WRIGHT, MR. HOFFMAN, DR. BROWN, MISS ARMSTRONG, MR. WINTER.

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 special lines. Courses 1, 2, 9, 20, 21 or 23, are prerequisites for major work in bacteriology. Special courses are offered for medical students (course 2), home economics students (course 9), and engineers (course 8). Elementary courses, without laoratory 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, Mr. WINTER.

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. Dr. RAVENEL, Mr. FROST, 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 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. *Both semesters; one credit.* Dr. RAVENEL, 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.* Dr. 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.* Dr. 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, bac-

teriological and chemical. *Lectures and laboratory work; three credits.* Dr. RAVENEL, Mr. FULLER.

9. Industrial Bacteriology. This course includes a study of the biology of bacteria, gives training in cultural and microscopical technique and emphasizes the micro-organisms and processes concerned in the more common fermentations. It is intended especially for students in home economics. *Five credits.* Mr. FROST, Miss ARMSTRONG.

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. 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 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. *Second semester; lectures, Tu., Th.,* 9; *two laboratory periods; four credits.* Dr. RAVENEL, Mr. HASTINGS, Mr. WRIGHT.

21. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter and cheese. Prerequisite, courses 1, 20. *First semester; lecture W.,* 11; *two laboratory periods; three cr dits.* Mr. HASTINGS, Mr. WRIGHT.

22. Transmissible Diseases of Animals. A study of relation of bacteria to disease processes in animals. Prerequisite, courses 1, 20. *First semester; lectures, Tu., W., Th., F., S.,* 11; *five credits.* Dr. RAVENEL.

23. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, courses 1, 20. *First semester; lecture, W.,* 10*; two laboratory periods; three credits.* Mr. HASTINGS, Mr. HOFFMANN.

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. Dr. 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 completion of the new Biology Building, sometime during 1911–12, will greatly increase laboratory facilities. 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 may enter the course in either semester. *Five credits per semester. Lectures, M., W.*, 2:30. Mr. HARPER, Mr. HOLMES. *Eight hours of laboratory work and one quiz*

per week. Mr. ALLEN, Miss BACHMAN, Mr. BARTHOLOMEW, Mrs. BURKE, Mr. GEE, Mr. GILBERT, Mr. HEDDLE, Mr. JUDAY, Mr. MARQUETTE, Mr. MELHUS, Miss MERRILL, Mrs. MOREY, Mr. OVERTON, Miss SINCLAIR, Mr. SMITH, Mr. STEIL, Mr. STOUT, Mr. WAGNER, Mr. WODSEDALEK.

BOTANY

PROFESSORS HARPER, ALLEN, ACTING PROFESSOR PEIRCE; ASSISTANT PROFESSORS DENNISTON, MARQUETTE, OVERTON; MR. GILBERT, MR. STOUT; MISS BACHMAN, MR. BARTHOLOMEW, MRS. BURKE, MR. HEDDLE, MR. MELHUS, MRS. MOREY, MR. NETZEL, MISS SINCLAIR, MR. STEIL.

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.,* 1:30 *to* 3:30; *two credits.* Mr. HARPER, Mr. OVERTON.

   (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.,* 1:30 *to* 3:30; *three credits.* Mr. HARPER, Mr. OVERTON.

   (c) Bryophytes and Pteridophytes. A study of types of liverworts, mosses, ferns, equisetum, and lycopods. *Second semester; Tu., Th.,* 1:30 *to* 3:30, *lecture Tu.,* 2:30; *three credits.* Mr. ALLEN, Mr. STEIL.

   (d) Seed Plants. A study of the life histories of a few types of gymnosperms and angiosperms. *Second semester; M., W., F.,* 1:30 *to* 2:30, *lecture F.,* 2:30; *three credits.* Mr. ALLEN, Mr. STEIL.
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 phar-

macy. *First semester; Tu., Th.,* 8 *to* 10, *W.,* 10 *to* 12; *three credits.* Mr. DENNISTON.

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 1 and 2, and an ability to read German is desired. *Daily; hours on consultation.* Mr. HARPER, Mr. MARQUETTE.

8. Mycology. Special work on the morphology and classification of the fungi is offered to advanced or graduate students. *Hours on consultation.* Mr. HARPER.

9. Elementary Morphology and Physiology. A combined course for those who are taking a teacher's minor in botany, but open to students who have had course 1 or its equivalent. *Second semester; five credits.* Mr. OVERTON.

10. Histology of Woods. A laboratory course on the minute structure and characteristics of important forest trees. *First semester; two credits.* Mr. DENNISTON.

11. Bryology. Special work on the morphology and classification of the bryophytes is offered to advanced or graduate students. Prerequisite, courses 1 and 2, or their equivalent. *Hours on consultation.* Mr. ALLEN.

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. ALLEN, Mrs. MOREY.

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, Mr. MARQUETTE, Mr. OVERTON.

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 and 2, 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. *Excursions on Saturdays. Second semester; five credits.* Mr. GILBERT, 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; Tu., Th.*, 8 *to* 10, *W.*, 10 *to* 12; *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. ELLINGSON, DR. KLEIN, DR. KRAUSKOPF, DR. MATHEWS, MR. SHAW, DR. WILCOX; MR. AUGSPURGER, MR. BAKER, MR. BARNEBEY, MR. DIETRICHSON, MR. HUBBARD, MR. KOENIG, MR. LYNN, MR. MANN, MR. MILLARD, MR. NEBEL, MR. ROARK, MR. SCHUETTE, 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, Mr. MANN.
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; lectures and recitations, Tu., Th., F.,* 10; *five credits.* Mr. KREMERS, Miss WAKEMAN.

11. Quantitative Analysis. Introductory laboratory course accompanied by weekly lectures. Mr. LENHER; Mr. WILCOX, Mr. AUGSPURGER, Mr. BARNEBEY, Mr. SCHUETTE.

11a. Quantitative Analysis. For agricultural students. Introductory laboratory course with lectures and recitations. Mr. FISCHER; Mr. WILCOX, Mr. AUGSPURGER, Mr. BARNEBEY, Mr. SCHUETTE.

15. Quantitative Analysis. Designed especially for students in sanitary food and physiological chemistry and all those intending to specialize along biological lines. Introduc-

tory laboratory course with lectures and recitations throughout the year. Mr. FISCHER, Mr. WILCOX, Mr. AUGSPURGER, Mr. BARNEBEY, Mr. SCHUETTE.

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. HUBBARD, Mr. NEBEL.

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. MANN.

27. Advanced Organic Chemistry. Required of students in Pharmacy. *Second semester; Tu., Th., F.,* 10, *and laboratory work; five credits.* Mr. KREMERS, Miss WAKEMAN.

40. Plant Chemistry. A three hour study supplementary to Pharmacognosy (Botany 32). *Lecture or Recitation, M.,* 10. Mr. KREMERS, 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. Water Analysis. A laboratory course with lectures. *First semester.* Mr. FISCHER, Mr. SCHUETTE.

14. Gas Analysis. A laboratory course with lectures. *First semester.* Mr. FISCHER, Mr. SCHUETTE.

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.

17a. Iron and Steel Analysis. A laboratory course in the analysis of the ores and metallurgical products of the iron industry. Mr. LENHER.

19. Proximate Organic Analysis. A course in the proximate analysis of organic products. *First semester; three credits.* Mr. FISCHER, Mr. SCHUETTE.

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. HUBBARD, Mr. NEBEL.

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., F.,* 8; *and laboratory work; five credits.* Mr. KAHLENBERG, Mr. MATHEWS.

31. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electrochemical measurements supplements the lectures. *Lectures Tu., Th.,* 9; *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.,* 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.

24. Advanced Organic Chemistry. Two lectures a week on selected topics. 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. In 1911–12, on Photochemistry. One lecture per week. Laboratory work as desired. Mr. MATHEWS.

36. Advanced Electrochemistry. A course in the preparation of chemical compounds by means of electrolysis. *Hours to be arranged.* Mr. KAHLENBERG, 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. KAHLENBERG.

38. Chemical Seminary. Original articles of importance in the different fields of chemistry 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. Conducted by the members of the staff.

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.

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.

55. Advanced Analysis. In 1912–13, a course of two lectures per week will be given on the methods used in the analysis of inorganic substances. Mr. LENHER.

COMPARATIVE LITERATURE

COMMITTEE IN CHARGE: PROFESSORS OLSON AND SHOWERMAN; ASSISTANT PROFESSORS CERF, 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 1–7 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 comparative 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.*, 12. (Omitted 1910–11.) Mr. C. F. SMITH.

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

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

Comparative Literature 4. Modern Classical Drama. The reading of foreign drama will be in translations. *First semester; two hours a week.* (Given 1911–12.)

Greek 13. Greek literature in English translations: the drama. *First Semester; Tu., Th.,* 9. Mr. C. F. SMITH.

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; Tu., Th.,* 2:30. Mr. SHOWERMAN, Mr. CUNLIFFE.

Comparative Literature 7. Contemporary Drama. Beginning with the rise of the drama of naturalism in France, this course will attempt to explain recent movements and tendencies in the drama of the Continent and England. Plays not English will be read in translation. This course counts for the English major. *Throughout the year; two hours a week.* Mr. DICKINSON.

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; one hour a week.* (Omitted 1910–11.) Mr. YOUNG.

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

French 52. Medieval French Drama. *Second semester; two hours.* Mr. H. A. SMITH.

English 49. English Religious and Didactic Drama. From the beginnings to the entrance of the Renaissance. *Second semester; two hours.* (Omitted 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; two hours.* (Omitted 1910–11.) 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; two hours.* (Omitted 1910–11.) Mr. DODGE.

Comparative Literature 17. Elizabethan poetry in its relations with France and Italy. Careful study of types, pastoral, lyric, epic, etc., and in particular of the literary relations of Spenser. *Throughout the year; F.*, 3:30 *to* 5:30. Mr. DODGE.

Comparative Literature 18. The Renaissance in Romance Countries. *First semester*, Italian; *second semester*, French. *Two hours.* Mr. CERF.

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

French 36. The Novel in Romance Countries. Mr. CERF.

French 43. The Old French and related versions of the Sept Sages de Rome and of Tristan et Isolt. Mr. SMITH.

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

German 38. Shakspere in Germany. Mr. KIND.

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

English 46a. The Ballad. Mr. BEATTY.

EDUCATION

PROFESSORS ELLIOTT, O'SHEA; ASSOCIATE PROFESSOR HENMON; ASSISTANT PROFESSOR TRESSLER; DR. STARCH; MR. WELLS, MRS. HOYT, MR. RICE, MR. SIMMERS.

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 general aspects of 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 plan to devote no 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 since the Renaissance. Lectures, discussions, and papers. *First semester; M., W., F.,* 11; *repeated second semester at same hour. Two or three credits.* Mr. WELLS.

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. *Each semester; Tu., Th.,* 9. *Two or three credits.* 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. *First semester; M., W., F.,* 10. *Second semester; M., W., F.,* 9. *Two or three credits.* 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. *First semester; M., W., F.,* 9. *Second semester; M., W., F.,* 10*; two or three credits.* 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. HENMON, Mr. STARCH.

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. Prerequisite, course 1. *Lectures, discussions and assigned readings. First semester; M., W., F.*, 8; *two or three credits.* (Omitted 1911–12.) Mr. WELLS.

4a. State School Systems. A study of the principles of organization, and of the typical agencies for the administrative control of American state educational systems. Prerequisite, course 1, or 6, or 13. Open to graduates of normal schools. *First semester; Tu., Th.*, 10; *two or three credits.* 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.*, 10; *two or three credits.* Mr. ELLIOTT.

5. European School Systems. A comparative study of the educational systems of Germany, France, and England, with special emphasis upon international relationships and those features possessing significance for American education. Open to graduates of normal schools. *First semester; Tu., Th.*, 2:30; *two credits.* Mr. ELLIOTT.

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; Th.*, 1:30 *to* 3:30; *two credits.* 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; Tu., Th.*, 11. Mr. WELLS.

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, Rosseau, Mill, and Spenser. Prerequisite, course 1, or 13, or 11. *Second semester; Tu., Th.*, 11. Mr. WELLS.

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.* Mr. HENMON.

43. Experiments in Educational Psychology. A systematic laboratory course dealing with educational problems, mental and physical tests. An introductory course in psychology is prerequisite. Two credits, or by permission one credit. *Lecture, Th.*, 2:30; *laboratory hours to be arranged. Each semester.* Mr. STARCH.

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. *W.*, 7 *to* 9 P. M. (Omitted 1911–12.) *Two credits.* 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, course 11, 13, 14, or 41. Open to graduates of normal schools. *W.*, 7 *to* 9 P. M.; *two credits.* 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. *Hours to be arranged.* Mr. O'SHEA.

32. Seminary in Administration and Supervision of Education. Special subject for 1911-12, The Hygiene of Public School

Buildings. Open to graduates of normal schools. *Tu.*, 7:30 *to* 9:30 P. M.; *one or two credits.* 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. *Second semester; Tu., Th.*, 1:30; *two or three credits.* Mr. ELLIOTT.

44. Advanced Educational Psychology. The work of the first semester treats of the psychology of learning, economy in mental work and mental hygiene; that of the second semester with individual differences, mental inheritance and the correlations of mental abilities. *Throughout the year; Tu., Th.*, 1:30; *two credits; may be elected by semesters.* Mr. HENMON.

46. Experimental Education. A study of the experimental investigation of the teaching of school subjects and the results of recent investigation of school problems. *First semester; hours to be arranged; two credits.* Mr. HENMON.

48. 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. 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 CUNLIFFE, HUBBARD; ASSOCIATE PROFESSORS DICKINSON, LATHROP, PYRE, YOUNG; ASSISTANT PROFESSORS BASSETT, BEATTY, CAIRNS, DODGE, LEONARD, ROE, WOOLLEY; DR. ALBRIGHT, MISS ASHMUN, MISS BERKELEY, DR. ELLIOTT, MR. FOERSTER, MR. GARDNER, MR. HYDE, DR. LOMER, MR. MANCHESTER, MR. NEIDIG, MR. OWEN, DR. PERROW, MISS WALES, DR. WATT; MR. LOCHNER; MISS SCHINDLER.

GENERAL STATEMENT

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 sympathy 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 of these ends, directly or indirectly, but some are specially directed to one or two in particular. Every student is 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 and 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).

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, and an advanced composition course (2, 3, 5, or 6); 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 primarily for undergraduates, especially 34, 35, 36 or 37, 39, 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, 5, 6,), American literature (40, 47), Nineteenth Century literature (34, 35), English drama (36, 37,), 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) organiza-

tion 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 1911–12 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 89. *Three 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. 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. *Throughout the year; three credits. Forty sections. For hours and rooms see time table of required studies.* Required of all freshmen in the colleges of Letters and Science, Agriculture, and Engineering. Mr. HUBBARD, Mr. LATHROP, Mr. YOUNG, Mr. BEATTY, Mr. CAIRNS, Mr. DODGE, Mr. LEONARD, Mr. ROE, Mr. WOOLLEY, Mr. ALBRIGHT, MISS ASHMUN, MISS BERKELEY, Mr. ELLIOTT, Mr. FOERSTER, Mr. GARDNER, Mr. HYDE, Mr. LOMER, Mr. MANCHESTER, Mr. NEIDIG, Mr. OWEN, Mr. PERROW, Miss WALES, Mr. WATT, Miss SCHINDLER.

2. Sophomore Composition. Elective for students who have finished the required English for the freshman year. *Throughout the year; Tu., Th.,* 8, 10, *and* 11. Three sections. Mr. ALBRIGHT, Mr. PERROW, Miss BERKELEY

3. Argumentation. Training in analysis, brief drawing, evidence, refutation; study of the principles of conviction, persuasion, and rhetorical presentation. *Throughout the year; Tu., Th.,* 10. Mr. GARDNER.

4. Commercial Correspondence. Its varieties and principles.

Taken for credit only as part of a technical course. *Second semester; Tu., Th.*, 10. Mr. GARDNER, Mr. LOCHNER.

4a. Advanced Commercial Correspondence. Prerequisite, good work in course 4. *First semester; Tu., Th.*, 10. Mr. GARDNER.

5. Advanced Sophomore Composition. A course which lays somewhat more emphasis on advanced literary composition than does course 2. Open to all students (including sophomores) who have received a grade of at least 85 in Freshman English, and to juniors and seniors who have had English 2. *Throughout the year; Tu., Th.*, 9. Mr. DICKINSON.

6. Advanced Composition. Elective for juniors and seniors. *Throughout the year; Tu., Th.*, 11; *and a third hour to be arranged.* Mr. DODGE.

7. Narration. Narrative composition, based mainly on the study of the short story, with exercises in technique and criticism. Ordinarily open only to juniors and seniors who have taken one composition course in advance of English 1. *Throughout the year; Tu., Th.*, 10. Miss ASHMUN.

8. Dramatic Writing. A course in the theory and practice of writing plays. As a prerequisite to admission candidates are expected to submit an acceptable scenario. Early conference with the instructor is desirable. *Throughout the year; M., W.*, 8. Mr. DICKINSON.

ENGLISH LANGUAGE

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. *Two sections. First semester; M., W., F.*, 9. Mr. LEONARD, Mr. BEATTY. *Repeated the second semester; one section. M., W., F.*, 9. Mr. BEATTY.

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.

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.*, 2:30. Mr. HUBBARD.

For Graduates

24. English Philology Seminary. Critical study of texts; historical grammar; dialects. The work is varied from year to year. The subject for 1911–12 will be Anglo-Saxon Grammar. *Throughout the year; Tu., Th.*, 10. Mr. HUBBARD.

ENGLISH LITERATURE

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 end 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. LEONARD, Mr. YOUNG. *Section* 2, *M.*, *W.*, *F.*, 9. Mr. DICKINSON. *Section* 3, *M.*, *W.*, *F.*, 10. Mr. PYRE.

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 earliest 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. LATHROP.

35. The Victorian Era. This course is a continuation of 34, and is similar in method. The works for particular study are those of Tennyson, Browning, Rossetti, Arnold, Morris and Swinburne. *Second semester; M.*, *W.*, *F.*, 10. Mr. LATHROP.

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. Mr. PYRE.

37. Shakspere. 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 Shakspere in high school. *Throughout the year; M.*, *W.*, *F.*, 11. Mr. CUNLIFFE, Mr. YOUNG, Mr. ELLIOTT.

For Modern Drama, see Comparative Literature, Course 7.

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. *Second 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. *Three sections. First semester; Tu., Th.*, 12, *and* 2:30; *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. *Three sections. Second semester; M., W.*, 12; *Tu., Th.*, 12, *and* 2:30. 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, and an advanced composition course (to be taken in the sophomore or junior year) are required of all candidates for the minor teacher's certificate in English.

54. Modern English Prose. Special attention is given to the life, work, social ideals, and style of a few leading writers in the 19th century, such as Coleridge, Hazlitt, Carlyle, Newman, Ruskin, and Arnold. *Throughout the year; Tu., Th.*, 9. Mr. ROE.

In accordance with the regulations as to the provision of substitutes for the senior thesis (see p. 113) 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.*, 8. Mr. HUBBARD.

41. Tennyson. Tennyson's development as a literary artist is studied in his vocabulary, verse-form, and subject-matter. The poet's attitude to science, religion, and art is also considered. *Second semester; Tu., Th.*, 11. Mr. BEATTY.

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. *First semester; Th.*, 2 *to* 4. (Omitted 1911–12.) 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. 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 1911–12 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.

55. Shakespere'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.*, 10. Mr. PYRE.

56. The Age of Spenser. This course deals with the chief poets and prose writers from the publication of *Tottel's Miscellany* to the death of Elizabeth. Special attention will be paid to the poetry of Spenser. *First semester; M., W., F.*, 2:30. Mr. DODGE.
57. The Age of Milton. *Second semester; Tu., Th.*, 9. (Omitted 1911–12.) Mr. DODGE.
58. The Age of Dryden. *First semester; Tu., Th.*, 9. (Omitted 1911–12.) Mr. LATHROP.
59. The Age of Pope. *Second semester; Tu., Th.*, 9. (Omitted 1911–12.) Mr. LATHROP.

For Graduates

19. Critical Bibliography of English Literature. Required of all graduates making English their major study. *First semester; F.*, 3:30. Students register with Mr. Cunliffe.
43. Introductory Seminary in English Literature. Subject for 1911–12: Wordsworth. *Throughout the year; Th.*, 3:30 *to* 5:30. Mr. LATHROP.
44. Seminary in English Literature. Subject for 1911–12: Shaksperean Criticism. *Throughout the year; Tu.*, 3:30 *to* 5:30. Mr. CUNLIFFE, Mr. PYRE.
47. Seminary in American Literature. Subject for 1911–12: The Development of the Short Story in America. *Throughout the year; W.*, 3:30 *to* 5:30. Mr. CAIRNS.

GEOLOGY

PROFESSORS LEITH, WINCHELL; ASSOCIATE PROFESSOR BLACKWELDER; ASSISTANT PROFESSORS MARTIN, WHITBECK, MEAD; DR. STEIDTMANN, MR. WILLIAMS, MR. HOPPER, MR. BEAN.

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, or course 2a, short course in Geology.

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 5 and 8 to 25 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. Several field trips are taken in October. An elementary knowledge of physics and chemistry is required. *First semester;* 11; *five credits.* Mr. BLACKWELDER.
2. Applied Geology. Includes economic geology, principles of map interpretation, and field geology. Prerequisite, course 1 or its equivalent. The work is divided as follows: (a) Geology of North America by districts and the interpretation of geologic maps: working out rock structure and geologic history from such facts as are usually obtained through field work. *First half of second semester;* 11. (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 Devil's Lake. *Twelve hours a week (optional hours) for the last twelve weeks of the second semester; five credits.* 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; Tu., Th.,* 9; *laboratory period to be arranged; three credits.* Mr. WHITBECK.

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 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 Dalles 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. Prerequisite, course 4a. *Second semester; M., W., F.,* 10, *and quiz hour to be arranged; three credits.* Mr. WHITBECK.

6. General Mineralogy. An elementary study of crystallography, and physical and chemical mineralogy. Descriptive mineralogy follows in the second semester, with laboratory work in blowpipe methods and determinative mineralogy. Students entering the course should have at least an elementary knowledge of chemistry, physics, and trigonometry. *First semester; lectures, M., W., Th., F.,* 11; *laboratory, Tu.,* 1:30 *to* 3:30. *Second semester; lectures, Tu., Th.,* 11; *laboratory, M., W., F.,* 1:30 *to* 3:30; *five credits a semester.* Mr. WINCHELL, 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.,* 3:30. 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 sim-

ple megascopic methods. *First semester; M., W., F.,* 1:30; *three credits.* Mr. STEIDTMANN.

For Undergraduates and Graduates

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. *First semester;* the Geography of North America; *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.

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. WINHCELL.

9a. Glaciers. A study of existing glaciers and of the work performed by ice in regions formerly glaciated. Special illustrations from Alaska and Wisconsin. Prerequisite, Geology 4, or 1 and 2, or an equivalent. *First semester; hours to be arranged; two credits.* Mr. MARTIN.

9b. Advanced Physiography. 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) materials for the teachers' use; (4) field and laboratory work. Perequisite, Geology 4 or an equivalent. *First semester; Tu., Th.,* 11; *two credits.* Mr. WHITBECK.

11. Economic Geology. Excursions are taken to iron, copper, lead and zinc districts accessible from Madison. Chemistry 1, Mineralogy 6 or 7, and Geology 1 and 2 are prerequisites

for this course. *Second semester;* 4:30; *five credits.* Mr. LEITH, 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 equivalent. *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. *First semester; M., W.,* 4:30; *lectures and laboratory work.* Mr. LEITH, Mr. MEAD.

15. Metamorphic Geology. The course is based largely on the survey monograph on this subject by President Van Hise. *First semester; lectures and laboratory work;* 3:30; *five credits.* Mr. LEITH, Mr. MEAD.

16. Metamorphic Laboratory. Quantitative study of the processes of metamorphism dealt with in courses 11 and 15. *Throughout the year; Tu., Th.,* 1:30 *to* 3:30; *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. *Second semester; M., W.,* 3:30. 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. (Given 1910–11.) *Second semester; M., W.,* 3:30. Mr. LEITH, Mr. MEAD.

19. Petrology of Lake Superior Rocks. Study of selected rock types of the Lake Superior region and the problems of the

origin of igneous and metamorphic rocks 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 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 in iron or copper districts of Lake Superior or zinc district of Wisconsin. *Second semester; three credits.* (Given in alternate years with course 18.) Mr. LEITH, alternating with Mr. BLACKWELDER and Mr. MEAD.

GERMAN

PROFESSORS HOHLFELD, VOSS; ASSOCIATE PROFESSORS EVANS, ROEDDER; ASSISTANT PROFESSORS GOODNIGHT, KIND, PROKOSCH, STERLING; DR. BRUNS, MR. DEIHL, DR. FEISE, DR. HAERTEL, DR. HAUSSMANN, DR. HOLLANDER, MR. LEWISOHN, DR. MORGAN, DR. REINHARD, DR. VEERHUSEN; MR. DIEZ, MR. HEILMANN, DR. JAHR, MISS JOHNSON, MR. KRACHER, MR. PRICE, MR. PURIN, MR. RIEDER, MR. WERCKSHAGEN.

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

A. The elementary courses represent the work ordinarily done in the 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 to 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 conection 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 courses 20 and 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 29. 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, (at least the one hour course in methods), 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 four credits in German literature beyond course 20.

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 speaking and writing German. *Throughout the year; four credits.* Nine sections. Mr. GOODNIGHT, Mr. PROKOSCH, Mr. BRUNS, Mr. FEISE, Mr. HAUSSMANN, Mr. HOLLANDER, Mr. PURIN, Miss JOHNSON, Miss VEERHUSEN.

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 complete course 1 in the Summer Session, or may continue their work in the following year, in course 1A. *Second semester; Tu., W., Th., F.,* 1:30 *and* 2:30. Mr. PURIN, Miss VEERHUSEN.

1A. Advanced First Year German. Prerequisite, 1B, or one year of German in the high school. *Throughout the year; four credits.* Three sections. Mr. HOLLANDER, Mr. HEILMAN, Mr. PRICE.

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. HAERTEL, Mr. LEWISOHN, Miss VEERHUSEN, Mr. DIEZ, Mr. JAHR, Miss JOHNSON, Mr. KRACHER, Mr. RIEDER.

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; four credits.* Two sections. Mr. FEISE, Mr. PRICE, Mr. PURIN.

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; four credits.* Five sections. Mr. DEIHL, Mr. HAERTEL, Mr. MORGAN, Mr. KRACHER, Mr. RIEDER.

2C. Second Year German. For freshmen in the course in commerce. Pracitcally identical with course 2. *Throughout the year; four credits.* Two sections. Mr. HAUSSMANN, 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. DEIHL, Mr. HEILMANN, Mr. HOLLANDER.

2A. Advanced Second Year German. Prerequiste, 1A, or three years of German in the high school. *Throughout the year; four credits.* Four sections. Mr. BRUNS, Mr. DEIHL, Mr. HOLLANDER, Mr. LEWINSOHN.

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; Tu., W., Th., F.*, 8. Mr. LEWISOHN.

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.*, 10. Mr. LEWISOHN.

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.*, 11. Mr. HAUSSMANN.

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.*, 1:30. Mr. DEIHL.

7A. Elementary Conversation. Class practice, with work at home not to exceed one hour a week. Prerequisite, same as for course 6. *One credit. Throughout the year; two hours a week.* Five sections. Mr. GOODNIGHT, Mr. KIND, Mr. PROKOSCH, Miss STERLING, Mr. PURIN, Miss VEERHUSEN.

7B. Intermediate Conversation. Prerequisite, at least four semester hours in advance of course 2, or sufficient ability in speaking German. *One credit. Throughout the year; two hours a week. Two sections.* Mr. FEISE, Mr. PURIN, Mr. JAHR.

8. German Pronunciation and Expressive Reading. *First semester:* Practice in pronunciation, reading of prose, dramatic and lyric poetry, with special attention to pronounciation and expression. Open, after consultation, to students of fair advancement in German. Not open to freshmen. *One credit.* (Given 1911–12.) *Second semester:* A similar course, primarily intended for more advanced students, as a sequel to course 53. *One credit.* (Given 1911–12.) Mr. FEISE.

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.* Six sections. Mr. EVANS, Mr. GOODNIGHT, Mr. DEIHL, 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. Prerequisite, course 2, or an equivalent. This course may be taken to good advantage by students of other departments who wish to prepare for the language examination required for the Ph. D. degree. *Throughout the year; Tu., Th.*, 10; *one credit.* Mr. HAERTEL.

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. JAHR.

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; M., W.*, 2:30. 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.*, 2:30. 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. MORGAN, Mr. PURIN, Miss VEERHUSEN.

To make suitable four or five hour courses, 15 should be combined with 6, 7, 8, 11, 16, 17, or 20.

16. Historical Prose. Rapid reading of historical, biographical, and descriptive texts. Especially adapted to students preparing for the language examination required for the doctor's degree. Prerequisite, course 2, or an equivalent. *Tu., Th.*, 8. Mr. MORGAN.

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. *Tu., Th.*, 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 15 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 Säkkingen. M., W., F.*, 1:30. (Given second semester only, 1910–11.) Miss STERLING.

22A. Heine. Introduction to the study of his life and poetry. Lyrics, *Harzeise, 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 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; Tu., Th.*, 11. Mr. FEISE.

26. Recent Writers of Standard Fiction. Keller, Storm, Meyer, Raabe. Biographical sketch and study of characteristic narratives of each. *Throughout the year; Tu., Th.*, 10. Mr. GOODNIGHT.

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. (Omitted 1910–11, as a regular course, and offered as thesis course for seniors, *W.*, 3:30 *to* 5:30.) 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. *First semester; Tu., Th.*, 2:30; *one credit.* Miss STERLING.

This course is not open to freshmen and it may not be counted towards the minimum requirement for the major or minor in German.

THESIS COURSES

In conformity with the faculty regulations concerning thesis courses (see catalogue, pp. 112–113), the following are offered in 1910–1911.

A. Franz Grillparzer. Mr. KIND.

B. Gustav Freytag. Mr. GOODNIGHT.

C. Meaning and Derivation of Words. (Non-technical; special emphasis on the interrelation of German and English.) Mr. PROKOSCH.

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. Conducted in English. *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.* (Omitted 1910–1911.) Mr. HAERTEL.

34. Lyric Poetry of the Nineteenth Century. Special attention will be given to the study of rhythm and meter. *Throughout the year; Tu., Th.*, 3:30. Alternates with course 32. 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.* (Omitted 1910–1911.) 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. (Omitted 1910–1911.) Mr. ROEDDER.

38. Shakspere in Germany. The course will trace the introduction of Shakspere 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 1910–1911.) 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 verse 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. Alternates with course 41. (Omitted 1910–1911.) 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.*, 1:30 *and* 3:30. Alternates with course 40. 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.* (Omitted 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. *First semester; twice a week.* Alternates with course 35. (Second semester 1910–11 special course in the life and works of Gottfried Keller.) 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. (Omitted 1910–1911.) Mr. MORGAN.

45. Interrelations of German and French literature during the seventeenth and eighteenth centuries, with special reference to the novel. *First semester; twice a week.* (Omitted 1910–1911.) 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; twice a week.* Alternates with course 44. (Given 1910–1911 second semester only.) 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; W., F.*, 10. 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. (Given 1910–11.)

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

C. The German drama since the middle of the eighteenth century. (Given 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 advanced students who are not members of the seminary. *Throughout the year; W., 4 to 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. *First semester; two credits.* In alternate years. (Given 1911–1912.) Mr. Prokosch.

Students desiring more practice than the course in Phonetics can provide should, in the second semester, take course 8.

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. 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. Middle and Modern Low German. Reinke de Vos and Reuter's "Ut de Franzosentid." (Given 1910–1911.) *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, MISS JOHNSON.

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. LAIRD.

A2. Elementary Greek. White's *First Greek Book*. *Second semester; two sections; M., W., F.*, 11; *M., W., F.*, 2:30; *three credits.* Miss BANNING.

B. Xenophon's *Anabasis* III–IV, Homer's *Odyssey* I–IV, Greek Composition. *Tu., Th., S.*, 2:30. 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. LAIRD.

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

5b. Thucydides; Demosthenes. *Second semester; M., W., F.*, 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. (Omitted 1911–12.) 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). *First semester; Tu., Th.*, 9. For details of courses 13 and 13b see Comparative Literature 1 and 3.

13b. Greek Literature in English translations (Drama). A knowledge of Greek is not required. *Second 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 1911–12.) 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 1911–12.) Mr. SMITH.

22. Lyric Poetry. Especial attention is given to Pindar, the whole being read privately. *Throughout the year; S.*, 9 *to* 11. (Omitted 1911–12.) Mr. SMITH.
23. Homer. The *Iliad. S.*, 9 *to* 11. Mr. LAIRD.
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 1911–12.) Mr. SMITH.
25. Greek Orators. Antiphon, Andocides, Lysias, and Isaeus. *W.*, 4:30 *to* 6. (Omitted 1911–12.) Mr. LAIRD.
30. Greek Grammar. History of the sounds and forms. *First semester; Tu., Th.*, 5. (Omitted 1911–12.) 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. (Omitted 1911–12.) 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 PROFESSOR 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 according to 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 depart-

ment 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 to 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 this most important non-Indo-European family of languages 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 credits, 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. *Throughout the year; four credits.* 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; two credits.* 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; two credits.* 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; one credit.* 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 credits.* 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; two credits.* 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; two credits.* Mr. WILLIAMS, Mr. WOLFENSON.

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; one credit.* Mr. DAVIES.

23. Hebrew History. A course of lectures on Semitic origins, migrations, and settlements; the condition of early Palestine; the Abrahamitic 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; two credits.* 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; two credits.* 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; one credit.* Mr. WILLIAMS.

26. Historical Geography of Palestine. A course of lectures on Hebrew Archaeology and recent discoveries, illustrated by lantern slides. *Throughout the year; one credit.* 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; two credits.* 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. Supplemental to course 5. *Throughout the year; two credits.* Mr. DAVIES.

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; two credits.* 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; two credits.* 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; two credits.* 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; two credits.* 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; two credits.* 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; two credits.* Mr. WOLFENSON.

11. Hebrew Seminary. Hebrew legal, historical, poetical, and prophetical 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 necessary 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; two credits.* Mr. WOLFENSON.

12A. Elementary Arabic. For those desiring an opportunity to begin Arabic in the second semester. The right of withholding this course in any given year is reserved. *Second semester; three credits.* 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; two credits.* 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; two credits.* 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; two credits.* 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; two credits.* Mr. WILLIAMS.

HISTORY

PROFESSORS DENNIS, FISH, MUNRO, PAXSON, SELLERY, DR. THWAITES; ASSOCIATE PROFESSORS CHASE, WESTERMANN; ASSISTANT PROFESSOR COFFIN, DR. WARE; DR. BELL, DR. ROOT; MR. BAILEY, MR. CARSON, MR. CUSTER, MR. ESTEY, MR. GUTSCH, DR. JAHR, MR. ROBINSON, MISS RUEDEBUSCH, MR. SHORES, MR. WING, MR. WITTE, MR. WOODHOUSE.

The courses in history are divided into four groups:

A. Introductory courses 1 to 10 are primarily for undergraduates. They cannot be counted toward advanced degrees in history, 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 in history. 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 are allowed to take only one of courses 1, 5, and 10, for full credit, but are permitted to take either or both of the other courses without the supplementary reading and topic for two credits. Students not registered in the College of Letters and Science can take the courses 1, 2, 4, 5, or 10 for two credits each semester, with a proportionate reduction in the amount of work required.

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 (after the collegiate year 1912–13, twelve will be required).

For Undergraduates

INTRODUCTORY COURSES OPEN TO FRESHMEN

Freshmen are permitted to choose two of the introductory courses 1, 5, and 10, for five credits and will not be required to do the special training work (including supplementary reading and topic) in more than one course.

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., S.*, 9. 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. WARE, Mr. BELL, and assistants. *Second semester*, Mr. DENNIS, Mr. WARE, Mr. BELL, and assistants.

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 graduates and undergraduates who have taken the necessary preliminary work.

C. Courses 50 and 51 are designed for those who intend to teach history.

D. Courses 52 to 66 are distinctly graduate courses and are closed to undergraduates.

INTRODUCTORY 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.*, 10. 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.*, 1:30. (Omitted 1911–12.) 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.*, 1:30. (Omitted 1911–12.) 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.*, 1:30. Mr. WESTERMANN.

31. Medieval Civilization. Designed to supplement course 1 by a special study of intellectual life in the feudal period and of the organization of society. *First semester; Tu., Th.*, 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, *and a third hour to be arranged.* 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. WARE.

33a. Medieval German History. Lectures in German on the period beginning with the breaking up of the empire of Charles the Great, and continuing to the period of the *Faustrecht*, with special emphasis on the age of the Hohenstaufens. *First semester; Tu., Th.*, 11. (Omitted 1911–12.) Mr. JAHR.

33b. Medieval German History. Lectures in English on the same period as indicated above. *Second semester; Tu., Th.*, 11. (Omitted 1911–12.) Mr. JAHR.

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. (Omitted 1910–11.) 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; Th.*, 3:30 *to* 5:30. (Omitted 1910–11.) Mr. SELLERY.

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 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. WARE.

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. 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 second semester, 1910–11.) Mr. DENNIS.

43a. The British Empire, 1688–1815. A course dealing with the development of modern English institutions, foreign affairs, the international struggle for colonial and commercial supremacy, and the evolution of imperial politics. *First semester; Tu., Th.*, 10. (Omitted 1910–11.) 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.*, 10. 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. *First semester; M., F.*, 5. 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 Ger-

man states. Prerequisite, course 2 or its equivalent. *First semester; Tu., Th., 5 and S., at an hour to be arranged.* Mr. COFFIN.

24. The French Revolution. A review of the *Ancient Regime* followed by a study of the political, social, and international aspects of the Revolution. *First semester; M., W., F.*, 9. (Omitted 1910–11.) 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. Mr. COFFIN.

27. The Napoleonic Era. The Consulate and Empire of Napoleon treated from the same standpoint as course 36. *Second semester; M., W., F.*, 9. (Omitted 1910–11.) Mr. BELL.

39. The Nineteenth Century, 1815–1900. A general study of the development on the continent of English parliamentarism and of French revolutionary democracy. Prerequisite, course 2 or its equivalent. Alternates with course 38. *First semester; M., W., F.*, 11. (Omitted 1910–11.) Mr. COFFIN.

28. Nineteenth Century Europe. An explanation of existing conditions through the study of the chief phases of the political, economic, and social history; of the extension of European influence into other continents, with especial emphasis upon the causes and extent of emigration to the United States. *Throughout the year; M., W., F.*, 9. Mr. BELL.

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.

12. The French in North America, to the close of King George's War (1497–1748). A study of their exploration and exploitation of the continental interior, with an evaluation

of source material. *First semester; Tu., Th.*, 1:30. (Omitted 1911–12.) Mr. THWAITES.

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.*, 8. 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. 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. *First semester; M., W., F.*, 9. Mr. PAXSON.

11b. The History of the West, 1840 to the present. This is the continuation of 11a, and treats chiefly of the trans-Mississippi West, with reference to its occupation, development and political ideals. *Second semester; M., W., F.*, 9. Mr. PAXSON.

18. Civil War and Reconstruction. A general study of the history of the United States, 1860 to 1876. *Second semester; M., W., F.*, 12. (Omitted 1910–11.) Mr. FISH.

24. History of the United States Since the Close of Reconstruction. A study of the recent social and economic reorganization of the United States with special reference to the trend towards nationalization. *First semester; Tu., Th.*, 11. Mr. PAXSON.

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. *First semester*, Mr. FISH; *second semester*, Mr. PAXSON.

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. (Omitted 1910–11.) Mr. ROOT.

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 *to* 12, *or at an hour to be arranged.* (Omitted 1910–11.) Mr. FISH.

21. Introductory Seminary in American History. The West between 1850 and 1860. *Throughout the year; F.*, 3:30 *to* 5:30. Given in alternate years, beginning with 1910–11. Mr. PAXSON.

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.*, 2:30. Mr. CHASE, in cooperation with Mr. GRINDELL, 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. Mr. CHASE.

For Graduates

52. Historical Method. Introductory course for all graduate students, including a survey of problems of method, of the materials for research, and of the bibliographical tools; and a discussion of the problems and technique of editing

MSS. for publication. *Throughout the year; W.*, 3:30 *to* 5:00. Mr. MUNRO, Mr. FISH, Mr. THWAITES, and others.

53. Palaeography and Diplomatics. (a) Elements of palaeography, with practical exercises in the reading of MSS. facsimiles; (b) elementary exercises in diplomatics. *Second semester; F.*, 9 *to* 11. (Omitted 1910–11.) Mr. MUNRO.

54. Seminary in Ancient History. *First semester*, organization and administration of Egypt under the Ptolemies. *Second semester*, studies in economic conditions under the Roman Empire. *Tu.*, 7 *to* 9. Mr. WESTERMANN.

56. Seminary in Medieval History. In 1910-11, the fourth crusade. A knowledge of three foreign languages is required. *S.*, 10 *to* 12. Mr. MUNRO.

57. Seminary in Modern European History. The Centralization of French government by Napoleon I. *First semester; S.*, 10 *to* 12. (Omitted 1910–11.) Mr. COFFIN.

59. Seminary in English History. Topics for 1910–11: Political and economic questions in nineteenth century. *Tu.*, 1:30 *to* 3:30. Mr. DENNIS.

61. Seminary in American History. Reconstruction period. *Throughout the year; Tu.*, 3:30 *to* 5:30. Given in alternate years, beginning with 1910–11. Mr. FISH.

62. The West During the Eighties. A critical study of the problems in social and political reorganization which followed the completion of the continental railways and the economic reorganization of the West upon national lines. *Throughout the year; F.*, 3:30 *to* 5:30. (Omitted 1910–11.) Mr. PAXSON.

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. *First semester; Tu., Th.*, 9. Mr. Prokosch.
2. Elements of Comparative Philology. An introductory course on the Structure and Development of the Indo-European languages. *Second semester; Tu., Th.*, 9. Mr. Prokosch.
3. Elementary Sanskrit. *Throughout the year; M., W.*, 11. Mr. Laird.
4. Advanced Sanskrit. Kalidasa's Çakuntala. *Throughout the year; F.*, 11. Mr. Laird.
7. Old and Middle Irish. An introductory course to Celtic Philology, with readings from Irish epics. *First semester; W., F.*, 9. Mr. Prokosch.
8. Welsh. Selections from the Mabinogion. *Second semester; W., F.*, 9. Mr. Prokosch.
9. Pre-Germanic Grammar. *Tu., Th.*, 9. *Throughout the year.* Mr. Prokosch.
10. Old Bulgarian. An Introduction to Slavic Philology. *First semester; W., F.*, 9. Mr. Prokosch.
11. Lithuanian Comparative Grammar and Introduction to Lithuanian folklore. *Second semester; W., F.*, 9. Mr. Prokosch.
12. Russian. An introduction to the study of modern Russian speaking, writing, and reading. *Throughout the year; W., F.*, 9. 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 AND MR. HYDE.

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 and a large collection of newspapers from foreign countries, is maintained for the students in these courses. In connection with the courses in journalism, is given each year series of special lectures by newspaper and magazine editors on various phases of journalistic work.

Instruction is offered 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. The psychology of advertising is the subject of a course in the department of philosophy, and the principles of advertising are considered in connection with courses in business administration. 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 and graduate scholarships are offered annually.

Primarily for Undergraduates

1. Elements of Newspaper Writing. Practical talks on the work of the newspaper reporter, with practice in newspaper writing. Primarily for freshmen. *Throughout the year; F.*, 3:30; *no credit.* Mr. BLEYER, Mr. HYDE.

For Undergraduates and Graduates

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. *Throughout the year; M., W., F.,* 10. Mr. BLEYER, Mr. HYDE.

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 methods 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; M., W.,* 11. Mr. BLEYER, Mr. HYDE.

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. *Throughout the year; 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. *W.,* 3:30 *to* 5:30; *two credits.* Mr. BLEYER.

20. The Technique of Printing and Publishing. Practical talks on methods of editing and printing with special reference to technical and trade publications. Open to students in the Colleges of Engineering and Agriculture, and to those in the Courses in Pharmacy, Chemistry, Medicine, and Commerce in the College of Letters and Science. *Second semester; M., W.,* 11. Mr. BLEYER.

21. Technical and Trade Journalism. Lectures and practice in all details of the work of the editor and contributor. Open to students in the Colleges of Engineering and Agriculture and to those in the Courses in Chemistry, Pharmacy, Medicine and Commerce in the College of Letters and Science. *Throughout the year; hours to be arrang d.* Mr. ———

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).

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. BAILEY.

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. HALL.

Psychological Principles of Advertising (Philosophy 19). *Second semester; Tu., Th.*, 8. Mr. STARCH.

LATIN

PROFESSORS SHOWERMAN, SLAUGHTER; ASSOCIATE PROFESSORS FISKE, LAIRD; ASSISTANT PROFESSOR ALLEN; MR. BRANDT, MR. GILMER, MISS GOODRICH.

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 nominally required for entrance. B and A count 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 are 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-six credits as a minimum. At least six credits, in addition to the thesis, should be chosen from group II, but no specific requirement of courses is made. Courses 2, 5 and 6 in *Greek* to the extent of six credits, may be counted toward a Latin Major. Course 22 in Latin, and Course 12, first semester, can not be counted toward the Latin Major.

Primarily for Undergraduates

B. Elementary Latin. (Free Elective.) The elements of Latin and Caesar's *Bellum Gallicum*, Bks. I–III. May be used to satisfy the University's requirements in language. *Throughout the year; M., Tu., W., Th., F.*, 8. 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.*, 8. Miss GOODRICH.

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.*, 9, 10, *and* 1:30, *and Tu., Th., S.*, 9. Mr. FISKE, Mr. SHOWERMAN, Miss ALLEN, Mr. BRANDT.

2. Prose Composition, supplemented by the reading of easy prose authors without preparation. *Throughout the year; Tu., Th.*, 9, 10 *and* 1:30. Mr. FISKE, Mr. SHOWERMAN, Miss ALLEN, Mr. BRANDT, Mr. GILMER.

3. Horace. Odes, satires, and epistles. *Throughout the year; M., W., F.*, 9. Mr. SLAUGHTER, Mr. SHOWERMAN.

4. Advanced Prose Composition with a special study of Latin syntax. Must be preceded by 2. *Throughout the year; Tu., Th.*, 1:30. Mr FISKE, Mr. BRANDT.

5. Catullus, 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. Mr. SHOWERMAN.
9. Plautus, Terence, and Seneca. A reading course giving a general survey of the Roman drama. *First semester; M., W., F.*, 8. (Omitted 1911–12.) 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. The lectures on Greek life can not be counted toward a Latin Major. *Throughout the year; Tu., Th.*, 4:30. (Omitted 1911–12.) Mr. SHOWERMAN.
13. Literary Criticism. Selections from early Roman poetry and from Cicero, Horace and Quintilian. *First semester; M., W., F.*, 9. (Omitted 1911–12.) 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. (Omitted 1911–12.) Miss ALLEN.
21. Ovid, Tibullus, Propertius. In connection with a systematic study of classical mythology. *Throughout the year; M., W., F.*, 9. 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 credits of Latin. *Second semester; Tu., Th.*, 9. Mr. SLAUGHTER.
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; M., W., F.*, 10. Mr. SLAUGHTER.

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; 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. Mr. FISKE.

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. (Omitted 1911–12.) 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.*, 4:30. 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.*, 4:30. Mr. SHOWERMAN.

24. *Thesis Courses.* (a) Poetry of the late Augustan Age. Miss ALLEN.

(b) The Development of the Latin Satire. Mr. FISKE.

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.*, 2:30. Mr. LAIRD.

26. Latin Syntax. Lectures on Latin syntax, illustrative of the historical method. *Second semester; Tu., Th.*, 2:30. 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 1911–12 the work of the Seminary will be based on Latin inscriptions of the time of Augustus. *Throughout the year; Th.*, 3:30 *to* 5:30. Mr. SLAUGHTER, Mr. WESTERMANN.

MANUAL ARTS

PROFESSORS CRAWSHAW, PHILLIPS; MR. GODDARD, MR. DORRANS.

The department of Manual Arts, in cooperation with allied departments aims to reach three principal classes of students; first, those desiring special intensive training which will fit them for positions as directors and supervisors of manual arts work in public school systems; second, those who, in addition to the preparation to teach some one of the regular academic subjects of the high school, are seeking to equip themselves to teach one or more of the special lines of manual arts work which might profitably be introduced into the curriculum of the smaller high schools; third, those students for whom such courses, as those announced, would serve to enrich the traditional program of liberal study.

The department, established in the College of Letters and Science in the fall of 1910, conducts courses in the several lines of shop work and drawing taught in public high schools and in subjects which elaborate upon the teaching of manual training, such as Organization and Maintenance, History, Supplies and Equipment, etc. Coöperation with several allied departments is maintained.

Adequate facilities for all laboratory courses is made possible by the use of the full equipment of the College of Engineering

shops and drawing rooms. In addition to these, however, the department has fitted up a large room equipped especially for wood working classes and for the study of supplies and equipment. Through the kindness of many manufacturers of manual training and drawing equipment a large number of exhibits are housed in this room and form a rather complete museum on the Manual Arts.

Stereoptican service adds to the possibilities for making this room serve as a laboratory and a lecture room both for purposes of demonstration and investigation.

Courses announced are open to election by all students subject to the general university and special college regulations governing elections.

Courses of Instruction, 1911–1912

1. Freehand Drawing and Perspective. An elementary course in the principles of freehand drawing and the use of the common media of expression in drawing: pencil, pen, crayon and water color. Still life drawing from models, casts and natural forms. Interior and exterior perspective. Outdoor sketching. *Hours and credits to be arranged.*
2. Mechanical Drawing. An elementary course in mechanical drawing covering the following subjects: use of instruments, geometrical drawing, lettering and simple working drawing introducing the theory of projections, revolutions, sections, intersections, and machine sketching. Machine drawing. *First semester; three two-hour drawing periods each week.* Time of any engineering drawing section; *three credits.* Mr. PHILLIPS.
3. Applied and Constructive Design. The fundamental principles of free hand drawing, perspective and design, and their application to constructive design. Attention given to use of different materials in all grades of the public schools. *First semester; one lecture; three two-hour drawing periods each week; M., W., F.,* 10 *to* 12; *three credits.* (Prerequisite, Courses 1 and 2.) Mr. CRAWSHAW.
4. Elementary Woodwork and Turning. This course includes (a) bench work and the fundamentals of mechanical drawing and design; (b) wood turning, (c) student demonstrations. *Each semester; one lecture and six hours of shop*

work per week; M., 1:30 *to* 4:30; *W.*, 1:30 *to* 5:30; *three credits.* Prerequisite, credit or registration in courses 1 and 2.) Mr. CRAWSHAW, Mr. DORRANS.

5. Furniture and Cabinet Design and Construction. An advanced course. The course includes, (a) constructive design with special reference to furniture; (b) cabinet making; (c) wood finishing; (d) methods of teaching wood work. *Each semester; one lecture and six hours of shop work per week; Tu.*, 1:30 *to* 5:30; *Th.*, 1:30 *to* 4:30; *three credits.* (Prerequisite, Course 4.) Mr. CRAWSHAW, Mr. DORRANS.

6. Pattern Making. A course in elementary pattern making. (a) principles of draft, shrinkage and finish; (b) patterns requiring complex cores; (c) lectures and demonstrations; (d) class management. *First semester; one lecture and three hours of shop work per week; W.*, 8 *to* 12; *two credits.* (Prerequisite, Course 2.) Mr. CRAWSHAW, Mr. DORRANS.

6a. Pattern Making. An advanced course given under the supervision of the College of Engineering. (See Engineering.) *Second semester; W.*, 8 *to* 12. Mr. DORRANS.

7. Foundry Work. Supplementary to Course 6a. Individual practice in bench and machine moulding, and in the handling of cupola and brass furnaces. Particular attention given to the chemistry of metals. *Each semester; one lecture and three hours of shop work per week; F.*, 8 *to* 12; *two credits.* (Prerequisite, credit or registration in Course 6.) Mr. PAYTON, Mr. DORRANS.

8. Forge Work. Work in handling iron and steel in the fundamental processes of forging, welding, tempering and annealing. Special attention to arts-crafts projects in wrought iron. *Each semester; one lecture and three hours of shop work each week; Tu.*, 8 *to* 12; *two credits.* Mr. GODDARD, Mr. GABRIEL.

9. Machine Shop Work. Bench work in chipping and filing and sheet metal. Project work on shop machines. Supplementary subjects: courses of study, methods of time keeping and cost reducing. *Each semester; one lecture and three hours of shop work each week; S.*, 8 *to* 12; *two credits.* (Prerequisite, Course 6.) Mr. GODDARD.

10. History and Literature of Manual Arts. This course is designed to give a background for the work of the teacher and supervisor of the Manual Arts. The history of education is given some consideration. Considerable attention is given to the development of Manual Arts in this and European countries and to its literature. *First semester; two lectures each week; M., W.*, 10; *two credits.* Mr. CRAWSHAW.
11. Organization. Courses and Equipment for Manual Arts. Methods of introducing and maintaining manual training and drawing in different classes of schools and in different grades. A detailed study of courses for different media. Equipments planned. Specifications, contracts and orders written for equipment purchases. *Second semester; two lectures each week; M., W.*, 10; *two credits.* Mr. CRAWSHAW.
12. The Teaching and Supervision of Manual Arts. Methods of teaching and supervising constructive work in elementary and high schools. Lectures and discussions; individual study of class room methods; demonstration and practice teaching. *Throughout the year; two lectures each week; M., W.*, 11; *two credits.* Mr. CRAWSHAW.
13. Thin and Decorative Metal. The design and construction of projects in sheet and rod metal—escutcheons, straps, hinges and pulls—appropriate for the enrichment of furniture. Raised and beaten copper forms and simple jewelry. *Three credits.* (Omitted 1911–12.)
14. Clay and Pottery. The study of clay as a medium of expression in public school work. Modeling as a means of understanding and delineating form. Methods of building up work. Study and preparation of glazes. Firing. *Three credits.* (Omitted 1911–12.)

MATHEMATICS

PROFESSORS SLICHTER, VAN VLECK; ASSOCIATE PROFESSOR SKINNER; ASSISTANT PROFESSORS DOWLING, HART, WOLFF; DR. ALLEN, DR. BUCHANAN, DR. BURGESS, DR. DRESDEN, MR. MOOTS, MR. SIMPSON, MR. DRYZER, MR. URNER, MR. TAYLOR, MR. WHITFORD, MR. KEYSER, MR. NEWCOMER.

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 eight 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, 7, and 8. 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. *One semester; three credits.* Thirteen sections the first semester and two sections the second semester. Mr. DOWLING, Mr. SKINNER, Miss ALLEN, Mr. DRESDEN, Mr. KEYSER, Mr. MOOTS, Mr. SIMPSON.
2. Trigonometry. Plane trigonometry and logarithms; prerequisite to all other courses in mathematics except 1, 7, and 8. *One semester; three credits.* Three sections the first semester and eight sections the second semester. Mr. DOWLING, Mr. SKINNER, Miss ALLEN, Mr. DRESDEN, Mr. SIMPSON, Mr. KEYSER, Mr. MOOTS.
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. *Second semester; three credits.* Two sections. Miss ALLEN, Mr. SIMPSON.
4. Analytic Geometry. Elementary course. *Throughout the year;*

   Section 1. *Tu., Th.*, 10. Mr. SIMPSON.

   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. MOOTS (1911–12, Mr. SKINNER), and *second semester*, Mr. SKINNER.

6a. Determinants and Theory of Equations. *Second semester; Tu., Th.*, 3:30. Mr. DOWLING.

6b. Analytic Geometry. A continuation of course 3 or 4, devoted especially to elementary analytic geometry of three dimensions. *Second semester; Tu., Th.*, 3:30. *First semester.* Mr. DRESDEN.

7. Commercial Algebra. A course adapted to the needs of students of economics and finance. Required of students

in the Course in Commerce. *Second semester; three credits.* Five sections. Mr. SKINNER, Miss ALLEN, Mr. DRESDEN, Mr. SIMPSON.

8. Solid Geometry. The more important theorems relating to lines and planes in space, polyhedra, cylinders, cones, and spheres. *First semester; three credits.* Mr. ————.

For Undergraduates, College of Engineering

100. Sub-freshman Algebra. For students who fail to pass the examination given to all engineering freshmen. *First semester; M., Tu., W., Th.* Mr. BUCHANAN, Mr. MOOTS.

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. *One semester; M., Tu., W., Th., F.* Required of freshmen in engineering. Seven sections first semester, two sections second semester. Mr. SLICHTER, Mr. WOLFF, Mr. BURGESS, Mr. URNER, Mr. DRYZER, Mr. TAYLOR, Mr. WHITFORD, Mr. NEWCOMER.

102. Analytical Geometry and Trigonometry. In this course trigonometry is completed and further work in analytic geometry, graphic methods and nomography is given. *One semester; M., Tu., Th., F.* Seven sections second semester, three sections first semester. Required of freshmen in engineering. Mr. SLICHTER, Mr. BURGESS, Mr. BUCHANAN, Mr. DRYZER, Mr. TAYLOR, Mr. URNER.

104. Calculus. Differential and Integral Calculus. For all courses. *One semester; M., Tu., Th., F.* Required of sophomores in engineering. Mr. BURGESS, Mr. WOLFF.

105. Calculus. Continuation of 104 for all courses. Elementary work in differential equations is given in this course. *One semester; M., Tu., W., Th.* Two sections first semester, six sections second semester. Required of sophomores in engineering.

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; M., W., F.* Mr. WOLFF.

For Undergraduates, College of Agriculture

201. Elementary Practical Mathematics. A combined course in statics and trigonometry. Required of sophomores in agriculture. *Second semester; M., W., F.* Mr. WOLFF, Mr. WHITFORD.

For Undergraduates and Graduates

11. Advanced Calculus. A working course. Partial derivatives, envelopes, line and multiple integrals, etc., with applications to problems in geometry and mechanics. *First semester; M., W., F.*, 10. 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. SLICHTER.

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. *Second 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.

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.*, 8. Mr. SKINNER.

18. Theory of Probabilities. This course is adapted to the needs of students of science and economics. *Second semester; Tu., Th.*, 11. 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. *M., W., F.*, 9. Mr. VAN VLECK.

21. Theory of Functions of a Real Variable preceded by an introduction to the theory of point sets. A critical study of the theorems necessary to advanced work in analysis, with applications. *In alternate years throughout the year. Tu., Th.*, 11, *and a third hour to be determined.* (1911–1912.) Mr. VAN VLECK.

22. The Teaching of Mathematics. A course treating of the content of elementary mathematics and of the problems of teaching it.

Open to seniors who have had course 5. Open to other seniors and juniors upon approval of the department. *First semester; Tu., Th.*, 11; *second semester; Tu., Th., at an hour to be selected.* Mr. HART.

23. Survey of Geometry and Algebra. A course beginning with the history of Greek geometry and discussing the development and nature of the fundamental 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.*, 9. (Omitted 1910–11.) Mr. VAN VLECK.

24. The Mathematics of Life Insurance. An introductory course designed to meet the needs of students who wish to acquaint themselves with the fundamental principles of life insurance. Prerequisite, course 7 and course 5 should precede or accompany it. *Throughout the year; Tu., Th.*, 3:30.

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.*, 2:30. (Omitted 1910–11.) Mr. DOWLING.

44. Higher Geometry. Various geometric transformations, such as conformal representation, quadric and Cremona transformations. *Throughout the year; Tu., Th.*, 2:30. Mr. DOWLING. (Omitted 1911–12.)

46. Groups of Finite Order. A study of the fundamental properties of groups, followed by an examination of some of the more important groups and their applications to geometry and analysis. *Throughout the year; Tu., Th.*, 3:30, *and a third hour.* Mr. SKINNER.

49. Partial Differential Equations of Second Order. *Second semester; Tu., Th.*, 11. (Omitted 1911–12.) 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. *Throughout the year; three credits.* Mr. SLICHTER.

61. Seminary in the Theory of Functional Equations. *Throughout the year; W., F.*, 4:30. (In 1911–12 *one hour only.*) 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 1911–12.) Mr. SKINNER.

63. Higher Algebra, with special attention to the theory of quadratic forms and elementary divisors. *First semester; Tu., Th., S.*, 9. (Omitted 1911–12.) Mr. SKINNER.

64. The Linear Substitution in two and more variables with applications to various branches of mathematics. *Throughout the year.* (1911–1912.) *M., W., F.*, 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 the 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; W., F.*, 2:30; *laboratory, M.*, 1:30 *to* 3:30; *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.*, 2:30; *two credits.* (Omitted 1912–13.) Mr. MILLER.
4. Climates of the World. The climates of the world in relation to man and his activities. *Second semester. Tu., Th.*, 2:30; *two credits.* (Omitted 1911–12.) Mr. MILLER.

For Undergraduates and Graduates

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; Daily*, 10; *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; Daily*, 11; *five credits.* Mr. MILLER.

5. History of Meteorology. The origin and development of meteorological theories, instruments, institutions. Prerequisite, course 1. *Second semester; W.*, 11; *one credit.* (Omitted 1912–13.) Mr. MILLER.

7. Meteorological instruments and methods. The principles, construction, and use of meteorological instruments of precision, accompanied by laboratory exercises. Prerequisite, Mathematics 11 and 12, Physics 2 or equivalents. *Second semest r; Tu., Th.*, 10 *to* 12; *two credits.* (Omitted 1911–12.) Mr. MILLER.

MUSIC

PROFESSOR COERNE, EMERITUS PROFESSOR PARKER; ASSOCIATE PROFESSOR LUENING; ASSISTANT PROFESSOR HALL; MISS BERGMAN, MR. CASE, MISS EASTMAN, MR. VON GELTCH, MISS REGAN, MRS. SANDBERG; MR. ADAMS, MR. MANN, MR. SAUGSTAD, MR. STOTHART.

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 freshmen 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 applied music* for one or more studies on recommendation of the Direc-

* Note.—By the term "applied music" is meant special instruction in voice culture or some instrument, as indicated in course 16.

tor of the School of Music, but without credit toward graduation except as specified under course 16. See the statement of the School of Music. (See Index).

Courses

These courses give prominence to analytical, critical and historical study, both in distinctive courses and in the methods generally pursued, and thus afford opportunity for study, not only to those specializing in composition, but also to those who, without technical skill, wish to acquire a more intelligent appreciation of music.

Courses 3 to 8 continue throughout the year, and cannot be entered in the second semester except on examination.

1. Musical Theory. Elements of Music. Introductory course, outlining the scientific basis of music and its structural elements, rhythmic, melodic, harmonic and formal. No preparation necessary. For credits see second paragraph above. *First semester; M., W.*, 1:30. Miss EASTMAN.
2. Elements of Form. *Second semester; M., W.*, 1:30; *two credits.* Miss EASTMAN.
3. Sight-Reading and Ear-Training. Class drill in staff-notation and in sight-singing, with emphasis laid upon tonal relations as a practical basis for the study of harmony, and with attention given to ear-training, tone production and enunciation. *Two-year course, twice a week, but one credit for each semester.* (a) *First year; Tu., Th.*, 8 (b) *Second year; Tu., F.*, 9. Mr. CASE.
4. Elementary Harmony. This course treats of general theory, harmony, chords and their mutual relationships, non-harmonic tones, modulation, and analysis. It is intended that the ability to harmonize a given melody in soprano or bass shall be acquired in the course. Prerequisite, the ability to read and play simple four-part music. Two sections. *W., F.*, 10, *and Tu., Th.*, 3:30; *two credits.* Miss EASTMAN.
5. Public School Music. For Grade and High School Teachers. *Tu., Th.*, 10. *Hours subject to change; two credits.* Mr. CASE.
6. Public School Music. For Supervisors. *Two-year course. First Year.* (a) Methods, *M., W., F.*, 2:30; *two credits.*

(b) Practice-Teaching, *M., W.*, 1:30; *one credit.* (c) The Child Voice, *first semester, F.*, 1:30; *one credit.* (d) Conducting, *second semester, F.*, 1:30; *one credit.*

Second Year. (e) Methods, *M., W., F.*, 3:30; *two credits.* Mr. CASE.

7. Advanced Harmony. Prerequisite, course 4. *M., F.*, 11; *two credits.* Mr. LUENING.

8. Counterpoint. Prerequisite, course 7. *Tu., Th.*, 10; *two credits.* Mr. LUENING.

9. Double Counterpoint. Canon and Fugue. Analysis and Composition. Examples taken from Bach and others of the classical period, as well as from modern masters. Prerequisites, courses 7 and 8. *Hours to be arranged; two credits.* Mr. COERNE.

10. Musical Composition. Detailed study of rhythm, melody, harmonic accompaniment and musical form. Contrapuntal treatment of voice parts. Imitation. The writing of pieces for the pianoforte, voice, violin, and organ, such as etudes, classical dances, inventions, two-part canons, songs, glees, preludes. Prerequisites, courses 4 and 7. *Hours to be arranged; two credits.* Mr. COERNE.

11. Instrumentation. Prerequisites, courses 7 and 8. *Hours to be arranged; two credits.* Mr. COERNE.

12. History of Music. Lectures, with recitations and illustrations, on the development of the art, from ancient times through the period of Bach and Händel. *First semester, Tu., Th.*, 2:30; *two credits.* Mr. HALL.

13. History of Music, from the period of Bach and Händel to the present day, with emphasis on the lives and personalities of the great masters. *Second semester; Tu., Th.*, 2:30; *two credits.* Mr. HALL.

14. Musical Appreciation. Lectures with illustrations on the pianoforte in musical structure, methods, aesthetics, and criticism. The chief forms studied are the Aria, Anthem, Rondo, and Sonata, followed by the analysis of larger compositions such as symphonies, operas, and oratorios. Technical skill in music is not essential for the appreciation of this course. *First semester; Tu., Th.*, 11; *two credits.* Mr. COERNE.

15. Masterpieces of Music. Analytical study of both classical and modern masterpieces. *Second semester; Tu., Th.*, 11; *two credits.* Mr. COERNE.
16. Applied Music. Advanced Pianoforte Playing, Voice Culture, Organ, or Violin. Senior and Junior years only. Hours and credits to be arranged with the instructor and the Director of the School of Music, but not to exceed a total of ten semester hours.
17. Applied Music. Ensemble Playing. Prerequisite, at least one year of course 16. *Hours to be arranged; two credits.* Mr. HALL.
18. Orchestral Music. Rehearsals of the University Orchestra. Prerequisite, the ability to play some instrument. *W., 7 p. m. First year without credit, second year, one credit for each semester.* Mr. MANN, Mr. COERNE.
19. Choral Music. Rehearsals of the Choral Union. *Tu.*, 7:30 *p. m.; one credit for the whole year.* Mr. COERNE.

PATHOLOGY

PROFESSOR BUNTING, DR. BROWN.

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

For Undergraduates and Graduates

1. General and Special Pathology. *Second semester; Tu., W., Th., F.*, 8 *to* 12. *Six credits.*
3. Experimental Pathology. *Second semester; M.*, 8 *to* 12; *two credits.*

Primarily for Graduates

4. Investigation under direction.
5. Journal club. *Tu.*, 9.

PHARMACOLOGY AND TOXICOLOGY

PROFESSOR LOEVENHART.

1, 2, 4, 5. General Courses. *First semester; lectures, M.*, 8, *Tu., Th.*, 1:30, *S.*, 11. *Laboratory, S.*, 8 *to* 11; *five credits.* Dr. LOEVENHART.

8. Advanced Work. Dr. LOEVENHART.

12. Individual Work. Dr. LOEVENHART.

16. Journal Club. *Tu.*, 9.

PHARMACY

PROFESSOR KREMERS; MR. FISCHER, MR. MANN, MR. NETZEL.

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, Mr. MANN.

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, Mr. FISCHER, Mr. NETZEL.

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, Mr. FISCHER, Mr. NETZEL.

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.*, 3:30.

PHILOSOPHY

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

The student is at liberty to begin his work in philosophy with any of the courses designated as primarily for undergraduates. But beginners 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; three credits.* Mr. JASTROW, Mr. SHARP, Mr. STARCH, Mr. OTTO.
   Section 1. *Tu., Th.,* 9, *and F., at an hour to be arranged.* Mr. JASTROW, Mr. STARCH.
   Section 2. *M., W.,* 8, *and F., at an hour to be arranged.* Mr. SHARP, Mr. OTTO.

11. Logic. *First semester; M., W., F.,* 9 *and* 11; *repeated the second semester; M., W., F.,* 8 *and* 1:30. Mr. WRIGHT, 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. Wordsworth, Byron, Shelley, Carlyle, Emerson, Tennyson and Browning studied as psychological types, and as social and religious philosophers. No prerequisites. *Second semester; Tu., Th.,* 10; *two or three credits.* Mr. WRIGHT.

9a. Psychology of Religion. The development of religion in the race; contemporary phenomena such as conversion, adolescence, prayer, mysticism, revivals; social significance and philosophy of religion. *First semester; Tu., Th.,* 11; *two or three credits.* Mr. WRIGHT.

25. The Relation of Man to Nature. *Second semester; Tu., Th.*, 11. Mr. Otto.
31. History of Ancient and Medieval Philosophy. *First semester; M., W., F.*, 11. Mr. Otto.
32. History of Modern Philosophy. *Second semester; M., W., F.*, 11. Mr. Otto.
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; two sections; Tu., Th.*, 11 *and* 1:30. Course 41 is not required as a preliminary. Mr. Sharp.
44. History of Morality. An account of moral practice among some so-called primitive peoples and among some historical peoples in ancient times. *First semester; M., W., F.*, 9; *two or three credits.* Mr. McGilvary.
48. Psychology of Social Relations. The import of psychological processes for the explanation of social relations, with emphasis upon instincts, emotions, desire, will, and the self. *Second semester; Tu., Th.*, 8; *two or three credits.* Mr. Wright.
49. Moral Education, with special reference to the high school. *Second semester; Tu.*, 2:30. Mr. Sharp.
51. Aesthetics. A general survey of aesthetical appreciation, with practical applications to art. An introductory course. *First semester; Tu., Th.*, 2:30. Mr. Jastrow.

For Undergraduates and Graduates

2. Advanced Analytical Psychology. *Second semester; Tu., Th.*, 1:30 (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, 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, Mr. STARCH.

4a. Experimental Psychology for Premedical Students. A survey of mental behavior and conditions, and their abnormal variation. *Second semester; M., W.,* 2:30; *laboratory period; Tu., Th.,* 1:30 *to* 4:30. Mr. JASTROW, Mr. STARCH.

5. Research in Psychology. *Throughout the year; hours to be arranged.* Mr. JASTROW, Mr. STARCH.

6. Comparative Psychology. Lectures and assigned readings on animal psychology and mental development in man. *Second semester; M., W.,* 3:30. Mr. JASTROW.

7. Abnormal Psychology. Lectures and assigned readings covering the main forms of unusual and abnormal mental phenomena. *Second semester; M., W.,* 3:30. (Omitted 1911–1912.) Mr. JASTROW.

19. Psychological Principles of Advertising. *Second semester; Tu., Th.,* 8. Mr. STARCH.

26. Bearing of Evolution on Philosophy. *First semester. M., W., F.,* 9. (Omitted 1911–1912.) Mr. WRIGHT.

34. Contemporary Philosophy. *Throughout the year; M., W., F.,* 10. Mr. MCGILVARY. One of the following courses is prerequisite: 2, 21, 32. Mr. MCGILVARY.

36. The British Philosophers of the Eighteenth Century. Locke, Berkeley, and Hume, prefaced by Bacon and Hobbes. The development of their thought, and their relationship to literature and history. *First semester; M., W., F.,* 10. Mr. WRIGHT.

37. Kant. *The Critique of Pure Reason,* studied as a development from previous thought, and with regard to its influence upon later philosophical, political, social, religious, and literary thought. *Second semester; M., W., F.,* 10. Mr. WRIGHT.

45. The Evolution of Morality. *First semester; two credits.* (Omitted 1911–12.) Mr. SHARP.

46. Contemporary Moralists. *Second semester; two credits.* (Omitted 1911–12.) Mr. SHARP.

Primarily for Graduates

10. Psychological Seminary. *Alternate weeks.* Mr. JASTROW.
13. Advanced Logic. *Two credits.* Mr. OTTO.
40. Metaphysical Seminary. *Throughout the year; Tu.*, 2 *to* 4. Mr. MCGILVARY.
47. Ethical Seminary. *Throughout the year; W.*, 4 *to* 6. Mr. SHARP.

PHYSICAL EDUCATION

See Department of Physical Education, p. 474.

PHYSICS

PROFESSORS MASON, MENDENHALL, SNOW; ASSOCIATE PROFESSOR INGERSOLL; ASSISTANT PROFESSORS GAGE, TERRY; MR. FORSYTHE, DR. FULCHER, DR. ROEBUCK, MR. STEVE; MR. BIRGE, MR. CHAMBERLIN, MR. DAHM, MR. DIKE, MR. HOPKINS, MR. KILLEBREW, MR. LITTLETON, MR. MEHNER, MR. ROADS, MR. ROSENBERG, MR. SIMPSON, MR. TARRELL, MR. WEGEL, MR. ZOBEL; MR. ANGELL, 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 desire to obtain a more extended knowledge of some of the newer developments in physics, or who are preparing to teach. Courses 8 to 24 are designed for those who intend to do special work in physics; for the latter 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 and 3.

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. *Throughout the year;*

Lectures M., Tu., W., Th., 11. Mr. SNOW. *One recitation by the class in smaller sections.* Mr. ROEBUCK, Mr. STEVE, Mr. DIKE. *Laboratory practice, twice a week at hours to be arranged.* Mr. GAGE, Mr. STEVE, Mr. BIRGE, Mr. CHAMBERLIN, Mr. DAHM, Mr. HOPKINS, Mr. KILLEBREW, Mr. MEHNER, Mr. ROADS, Mr. ROSENBERG, Mr. SIMPSON, Mr. TARRELL, Mr. WEGEL, Mr. ZOBEL, Mr. MCCAULEY.

For Undergraduates and Graduates

2a. Advanced Course of Lectures. Heat and light. *First semester; M., W., F.*, 8. Mr. MENDENHALL.

2b. Advanced Course of Lectures. Electricity and magnetism. *Second s mester; M., W., F.*, 8. 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* 12. Mr. MENDENHALL, Mr. LITTLETON.

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

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

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

The course is open to all who elect physics either as a major or as a minor study. *Second semester; Tu., W.*, 5. Mr. SNOW.

5. Photography. The purpose of this course is to give instruction in a number of photographic methods, which will enable the student to make practical use of photography in various lines of scientific work. *Second semester; one lecture and two laboratory periods a week at hours to be arranged. Two credits.* Mr. ROEBUCK.

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.*, 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.*, 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. TERRY, Mr. FORSYTHE.

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. *Throughout the year.* Mr. MENDENHALL, Mr. INGERSOLL, 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 study, and is required of all candidates for the master's degree offering physics as a major. *Throughout the year; M., W., F.*, 9. Mr. INGERSOLL.

16. Advanced Dynamics. The mechanics of rigid, fluid, and elastic bodies; wave motion; sound. *Throughout the year; M., W., F.*, 11. Mr. MASON.

17. Applications of the Electron Theory. A course on the electron hypothesis and some of its consequences. *First semester; two credits.* Mr. MENDENHALL.

18. Molecular Mechanics. Special topics in the constitution and properties of matter from the mechanical standpoint. *Second semester; two credits.* 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.*, 10. Mr. MENDENHALL.

20. Theory of Electricity. A mathematical treatment of the Maxwell theory and its later developments. *Throughout the year; M., W., F.*, 12. 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.*, 10. (Omitted 1911–12.) 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.*, 12. (Omitted 1911–12.) Mr. MASON.

23. The Theory of Relativity. A study of the principle of relativity and its applications. *Throughout the year; one credit.* 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, Mr. INGERSOLL.

Engineering Courses

101. Mechanics, Sound and Light, with Laboratory Practice. *First semester.*

102. Heat, Electricity and Magnetism, with Laboratory Practice. *Second semester.*

These courses are similar in many respects to course 1, but are more technical in their nature, and are particularly designed to meet the needs of engineering students, of

whom they are required. *Lectures, M., Th.,* 3:30. Mr. TERRY. *Two recitations a week by the class in smaller sections.* Mr. FULCHER, Mr. INGERSOLL, Mr. ROEBUCK, Mr. FORSYTHE. *Laboratory practice, twice a week throughout the year.* Mr. GAGE, Mr. STEVE, Mr. BIRGE, Mr. CHAMBERLIN, Mr. DAHM, Mr. HOPKINS, Mr. KILLEBREW, Mr. MEHNER, Mr ROADS, Mr. ROSENBERG, Mr SIMPSON, Mr. TARRELL, Mr. WEGEL, Mr. ZOBEL, Mr. MCCAULEY.

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; two credits.* Mr. TERRY, Mr. FORSYTHE.

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR EYSTER; ASSISTANT PROFESSORS BRADLEY, 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 some chemistry. *First semester; M., W., F.,* 9. Dr. MEEK.

1b. Laboratory Course in Elements of Physiology. Required of sophomores in Home Economics, whose work in 1a will be so reduced that their total credits in Physiology will still remain 3. Open to others taking 1a, as an elective. *One credit. First semester; hours to be arranged.* Dr. MEEK.

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., S.,* 10. *to* 12; *F.,* 8 *to* 12; *four credits.* Dr. BRADLEY, Mr. PETERSEN.

5. Physiology. Lectures and demonstrations. *Second semester; Tu., Th.*, 11; *two credits.* Dr. EYSTER, Dr. MEEK, Mr. PETERSEN.
6. Physiology. Course 5 continued. *First semester; M., Tu., W., Th., F.*, 11. Dr. EYSTER, Dr. MEEK, Mr. PETERSEN.
7. Laboratory work. Required of all students taking course 6. *First semester until the Christmas recess; M., W., F.*, 1:30 *to* 4:30; *two credits.* Dr. EYSTER, Dr. MEEK, Mr. PETERSEN.
8. Advanced Laboratory course in Physiology (including research). Dr. EYSTER.
10. Advanced Laboratory Course in Physiological Chemistry. Dr. 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 credit.*

POLITICAL ECONOMY

PROFESSORS COMMONS, ELY, GILMAN, MEYER,* ROSS, SCOTT, TAYLOR, URDAHL; ASSOCIATE PROFESSOR RASTALL; MR. BEECHER, MR. BIDGOOD, MR. BIRD, MR. DUDGEON, MR. HAYES, MR. GRAY, MR. KERSCHENSTEINER, MR. KING, MR. SECRIST, MR. STEPHENS, MR. TRUMBOWER, MR. VALENTINE.

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

* Resigned January 1, 1911.

to undertake original investigation and assistance is given them in the prosecution of such work through seminaries 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 Historical 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 Tu., Th., 9 and two quizzes; quiz sections Tu., Th.*, 8, 9, 11, 1:30, 2:30, 3:30. Mr. URDAHL, Mr. BEECHER, Mr. BIDGOOD, Mr. GRAY, Mr. KING, Mr. SECRIST, Mr. STEPHENS, Mr. TRUMBOWER.

1b. The Elements of Economics. A continuation course in general economics intended primarily for students who have had course 1a and wish to take up a survey of the chief economic problems of modern industrial society. *Tu., Th., 9 and two quizzes. Quiz sections to be arranged. Four credits. Second semester.* Mr. URDAHL and instructors.

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.*, 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.*, 10; *three credits.* Mr. SECRIST.

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.*, 8 and 9. Mr. SCOTT, Mr. SECRIST.

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.*, 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 to 4, or Tu., Th., 2 to 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 *to* 12. First semester's work may be taken without the second. Mr. GILMAN, 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 *to* 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. Courses open to seniors only. *Throughout the year; Tu., Th.,* 9. Mr. GILMAN, 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.,* 11. Mr. GILMAN.

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; lec-*

turés, Tu., Th., 11; and one hour for recitation and textbook work to be arranged; *three credits.* Mr. ELY, Mr. BIDGOOD.

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 1911–12.) *First semester; Tu., Th.*, 10. Mr. ELY, Mr. GRAY.

22. Modern Socialism. *First semester; Tu., Th.*, 9.

23a. Labor Problems. Races, immigration, trade unions, employers' associations, etc. *First semester*, 1911–12; *Tu., Th.*, 9. Mr. COMMONS.

23b. Labor Legislation. American and foreign. Trade unions, factories, accidents, industrial hygiene, etc. *First semester*, 1910–11; *Tu., Th.*, 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.*, 9. Mr. SECRIST.

25. Tariff History of the United States. A study of economic principles underlying our tariff legislation, with particular attention to the economic forces dominant in each of the important periods. *Second semester; F.*, 8:00. Mr. BIDGOOD.

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.

30. Statistics. A treatment of general statistical methods followed by the discussion of concrete problems in economic and social statistics. *Throughout the year, three credits;*

lectures M., W., 1:30. *Four hours laboratory work, hours to be arranged.* Mr. KING.

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.*, 11. (Omitted 1911–12.) Mr. SCOTT.

34a. 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.*, 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.*, 8. Mr. MEYER.

37. Corporation Finance. A study of corporations, corporation securities and the methods of the stock market. *Second semester. M., W., F.*, 10. Mr. URDAHL.

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.*, 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.*, 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.*, 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.*, 8. Mr. Commons, Mr. Dudgeon.

42b. Public Utilities. Research at office of Railroad Commission. *Throughout the year; three credits each semester.* Mr. Meyer,* Mr. Commons.

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.* (Omitted 1911.) Mr. Ely.

45a. American Labor History to 1860. Industrial and political evolution. Lectures. *Second semester* 1910—11; *Tu., Th.*, 9. Mr. Commons.

45b. American Labor History since 1860. Lectures. *Second semester*, 1911–12; *Tu., Th.*, 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.*, 10. 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.*, 10. Given alternate years with course 51a. (Omitted 1911–12.) Mr. SCOTT.

52. The Distribution of Wealth. Part II. This course is an introduction to the economic philosophy of distribution. Special attention will be paid to Landed Property and the Rent of Land. *First semester; M., W., F.*, 10. Mr. ELY, Mr. GRAY.

53. Distribution of Wealth. Part III. 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.*, 10. (Omitted 1911–12.) Mr. ELY.

54. Trust Movements. A series of lectures on the evolution of trusts and cartells in Germany and continental Europe, supplemented by reports and collateral reading on trusts and pools in the United States. *First semester; M., W., F.*, 10. Mr. URDAHL.

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.

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 1910–11.)

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. *Tu., Th.*, 11. Mr. URDAHL.

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. 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. (Omitted 1911–12.) 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. (Omitted 1911–12.) Mr. ROSS.

63. Seminary on the Dynamics of Population. The economic, religious, military, political, legal, and social factors affecting the quantity and quality of population. Natural, social, and artificial selection among men. Outlines of eugenics. *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.

65. Seminary in Labor and Industry. *Throughout the year; Tu.*, 3:30 *to* 5:30. Mr. COMMONS.

66. Seminary in Economic Theory. Land and Rent will be the subject during 1911–12. *Throughout the year; Tu.*, 7:30 *to* 9:30. Mr. ELY, Mr. COMMONS, Mr. URDAHL.

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; PROFESSOR REINSCH, ASSOCIATE PROFESSORS LLOYD JONES, MCBAIN; DR. MCCARTHY, DR. HALL; MR. BAILEY, MR. CURTIS, MR. DUDGEON, MR. LOWRIE, MR. MACGREGOR.

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, 22, and 35). 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 problem of politics, the following arrangements have been made; certain brief lecture courses are given (see courses 1, 2, 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), without 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

1. General Political Science. An introductory course in comparative and historical politics. *First semester; M., W., F.*, 8. Mr. BAILEY.

7. Government and Politics in the United States. A general study of the American system of government, national, state, and local. *Throughout the year; M., W., F.*, 10. Mr. McBAIN.

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.

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. HALL.

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. HALL.

For Undergraduates and Graduates

6. Administrative Problems. A study of important administrative activities of the chief states of Europe and the United States. *Second semester; W.*, 5. Mr. McBAIN.

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.*, 2:30.

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. HALL.

12. American Constitutional Law. A study of federal and state constitutional principles and limitations. *Throughout the year; M., W., F.*, 9. Mr. HALL.

13. Constitutional Law. Thayer's Cases on Constitutional Law. *The Law School Course.* Mr. SMITH.

14. Municipal Functions. A comparative study of the leading activities of European and American cities. (Partly illustrated.) *Second semester; Tu., Th.*, 9. Mr. MACGREGOR.

15. Municipal Government in the United States and Europe. A comparative study of municipal organization and administration. *First semester; M., W., F.*, 10. Mr. MCBAIN.

16. State Administration. A study of the local and state administrative systems of the United States. *Second semester; M., W., F.*, 11. Mr. MCBAIN.

17. Federal Administration. A study of the organization, functions, and actual operation of the various branches of our national administration. *First semester; M., W., F.*, Mr. MCBAIN.

18. International Law. The work during the first semester will deal with 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.*, 2:30. 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 1911–12 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. LLOYD JONES.

23. Consular Service. A study of the American foreign service with special emphasis upon the consular service. *First semester; Tu., Th.*, 8. Mr. LLOYD JONES.

24. The Self-governing Colonies. A study of the political organization and activities of Canada, Australia, South Africa, and New Zealand. *First semester; M., W., F.*, 10. (Given 1910–11 and alternate years.) 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; Th.*, 2:30. Mr. HALL.

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; Tu., Th.*, 11. Mr. LLOYD JONES, Mr. MCCARTHY.

28. Comparative Study of Constitution Making. Mr. LOWRIE.

29. Teachers' Course. Methods of teaching government in secondary schools. *Second semester; Th.*, 4 *to* 6. Mr. MCBAIN.

30. Judicial Administration. A study of the organization, jurisdiction and actual operations of the courts with an inquiry into their defects in the administration of justice. *First semester; Tu., Th.*, 2:30. Mr. HALL.

31. Latin-American Political Institutions. A comparative study of the constitutional and administrative systems of the Latin-American Republics. *First semester; M., W., F.*, 10. 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. BAILEY, Mr. CURTIS.

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, Mr. LLOYD JONES.

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 1910–11 and alternate years.) Mr. REINSCH.

37. Contemporary International Politics and Diplomatic Problems. A study of the present grouping of the powers and their mutual relations. *First semester; M., W., F.*, 11. (Given 1911–12 and alternate years.) 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; M., W., F.*, 8. Mr. COMMONS, Mr. DUDGEON.

44. The Legal and Political Status of Women. A study of the legal and political rights of women in the United States and the principal European countries with a review of the development of their status and of the movement for more complete political rights. *First semester; Tu., Th.*, 10.

45. History of Political Thought. The development of political philosophy from the Greeks to the present time, and its connection with political history. *First semester; M., W., F.*, 9. Mr. LLOYD JONES.

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. LLOYD JONES, Mr. MCCARTHY.

56. Philosophy of the State. A critical study of contemporary political thought and terminology. *Second semester; Tu.*, 4 *to* 6. Mr. REINSCH.

57. Juristic Classics. The Institutes of Gaius, first two books; reading and commentary. *Second semester; F.*, 12.

58. Seminary in Administration. *Second semester.* Mr. McBain.

59. Seminary in Municipal Problems. *Throughout the year; Tu.*, 7:30 *to* 9. Mr. MacGregor.

60. Seminary in International Law and Politics. A study of some selected topics in international law and diplomacy. 1910–1911, The codification of international law. *Throughout the year; W.*, 7:30 *to* 9:30. Mr. Reinsch.

61. Seminary in American Constitutional Law. Some important constitutional problem will be studied. *Second semester; Th.*, 4 *to* 6. Mr. Hall.

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. Students desiring to arrange their course with a view to preparing for work in connection with the public service are invited to consult or correspond with the Chairman or the individual professors of the department of Political Science.

PUBLIC SPEAKING

Associate Professor Lyman; Miss Johnson, Miss Schindler, Mr. Hill.

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.

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 5a, 5b, 11b, 8, and 15. Men desiring to enter oratorical contests should consider courses 5a, 5b, 3a, 3b, and 15. In addition, the University, through its dramatic societies, pre-

sents 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, 16, 17, and 18.

Courses 4, 5a and 5b, maybe 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. Course 4, Argumentation, listed as a course in English, is a part of the work of this department.

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., F.*, 10, 11. Mr. LYMAN, Miss SCHINDLER. (Omitted 1911–12.)

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; M., W., F.*, 10. Mr. LYMAN, Miss SCHINDLER. (Omitted 1911–12.)

4. Argumentation. This course is scheduled in the announcement of the English Department as course 3 in Composition. Training and analysis, brief drawing, evidence, refutation, study of the principles of conviction, persuasion, and rhetorical presentation. *Throughout the year; Tu., Th.*, 10. Mr. GARDNER.

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. *Second semester; twice a week. hours to be arranged; no credit.* Mr. LYMAN.

3. 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.*, 10. Mr. LYMAN.

3b. Oratorical Delivery. Continuation of course 3a. *Second semester; Tu., Th.*, 10. 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; two sections; Tu., Th.*, 9, 11. Mr. LYMAN.

11. 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 4, or 5a. *First semester; hours to be arranged; two credits.* Mr. LYMAN, Miss SCHINDLER. (Omitted 1911–12.)

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; two sections; Tu., Th.*, 9, 11. Mr. LYMAN.

INTERPRETATION

Primarily for Undergraduates

Scope and Method. This work is arranged to progress in sequence through three years. First year, fundamental training. Review of same and fuller exemplification through use of various literary forms dramatically interpreted, second year. In the third year advanced work in interpretation, particularly along lines of character study, impersonation and criticism.

12a. Principles and Practice. Essential training in mind, voice and body, preparatory for any line of public speaking. Sections not exceeding fifteen. *Throughout the year; M., W., F.*, 9, 10. Miss JOHNSON.

12b. Beginning section in the work of 12a. *Second semester; M., W., F.*, 11. Miss JOHNSON.

16a. Interpretative Reading. 12a reviewed. Study and presentation of various literary forms. Lyric, epic, story, drama. Classic authors. Course to begin in alternate years with 17. Prerequisite 12a or permission of instructor. *First semester; Tu., Th.*, 10 *and* 11. (Given 1911–12.) Miss JOHNSON.

16b. Interpretative Reading. Modern authors. Short story particularly considered. One modern play. As You Like It. The Tempest. *Second semester; Tu., Th.*, 10 *and* 11. (Given 1911–12.) Miss JOHNSON.

17a. Interpretative Reading. 12a reviewed. One classic comedy. One modern comedy. Romeo and Juliet. Hamlet. Prerequisite as in 16a. *First semester; Tu., Th.*, 10 *and* 11. (Omitted 1911–12.) Miss JOHNSON.

17b. Browning. Pillars of Society. Tennyson. Merchant of Venice. Katherine and Petruchio. *Second semester; Tu., Th.*, 10 *and* 11. (Omitted 1911–12.) Miss JOHNSON.

18. Dramatic Seminary. Intended for those who wish to teach English and expression, or who aspire to platform work. Lectures on platform art. Particular study of impersonation in monologue, scene and play. Repertoire. Open only to those who have taken the two years' work in the department, or by permission of the instructor. *Throughout the year; M.*, 3:30 *to* 5:30. Miss JOHNSON.

ROMANCE LANGUAGES

PROFESSORS OWEN, SMITH; ASSOCIATE PROFESSOR GIESE; ASSISTANT PROFESSORS CERF, GAY, REED, SCHLATTER, ZDANOWICZ; MR. CATTELL, DR. COOL, MR. HERRICK, MR. MERCIER, MR. MICHELL, MR. COUSINS, MR. DONDO, MR. ERNST, MR. GALLAND, MR. HILL, MISS PARKINSON, MR. YOUNG.

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, should enter course 4.

Courses 10–17 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 18 and 19 require no knowledge of French and are not accepted in fulfillment of language requirements.

All courses above 19 require at least French 10, or an equivalent course in second year French, as prerequisite. Students entering these courses with the minimum prerequisite are advised to begin, if possible, with 21 or 23. If only two hours can be taken, the most suitable courses for such students are 20, 25, and 39. These are also suitable to take in addition to 21 or 23 to give five credits. Other suitable supplementary courses of a special nature are 24, 27, and 33.

Students with the minimum prerequisite should consult the instructor before entering 22, 31, 32, or 38. These are intended primarily for students who have already done one course above French 19.

Graduates and other advanced students who take 21, or 23 may be required to do additional work to receive full credit.

French 34 is open only to seniors and graduates.

All courses above 39 are for graduates but some may be taken by unusually well prepared undergraduates.

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.

Major and Minor

Students are allowed to major in French, Spanish, or Italian, or in a combination of these. In French the student must take at least twenty-four hours in advance of first year French. Those desiring to major in Spanish or Italian or in Romance Languages should consult the department for complete details. In combining these three languages the first and second year courses of more than one of the three will not count toward the hours necessary to make up the major, nor are they counted in the maximum forty hours that can be taken in one subject. Students preparing to teach French as a major are required to take courses 35, 38, one composition, one conversation, and at least one three-credit course in French literature.

Students who are preparing to teach some other subject as a major, with French as a minor, must take at least one year course in French literature and one course in composition or conversation.

FRENCH

For Undergraduates

1. Elementary French. Grammar, reading, composition, and oral exercises. Reading of simple modern French prose. Considerable attention will be paid to pronunciation. *Four credits; thirteen sections.* Mr. CATTELL, Mr. CERF, Mr. COOL, Mr. GIESE, Mr. HERRICK, Mr. MERCIER, Mr. MICHELL, Mr. REED, Mr. SCHLATTER, Mr. ZDANOWICZ; Mr. COUSINS, Mr. DONDO, Mr. ERNST, Mr. GALLAND, Mr. HILL, Miss PARKINSON, Mr. YOUNG.
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. Same as French 1, but five times a week instead of four. Intended for those students who desire a five hour language course. *M., Tu., W., Th., F.*, 8 *and* 1:30. Mr. CERF, Mr. MERCIER.

4. Advanced Elementary French. The course covers the second half of French 1 and the first half of second year French. Open to students who have commenced French in the summer session or who enter with one year of high school, or one-half year of college French. *Three sections; four credits.* Mr. DONDO, Mr. GALLAND, Mr. SCHLATTER.

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 simple scientific prose will be read. *Three sections; four credits.* Mr. GALLAND, Mr. HERRICK, Mr. MERCIER.

6C. Elementary French for Students in Commerce. Reading, composition and oral exercises. Reading of easy prose. *Tu., W., Th., F.*, 9. Mr. CATTELL.

7. 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. *Second semester; three sections; four credits.* Mr. CERF, Mr. HERRICK, Mr. GALLAND.

10. Second year French. Reading of modern prose narrative and comedies. Drill in pronunciation, written and oral work and review of grammar. Prerequisite one year of college or two years of high school French. *Seven sections; three credits.* Mr. CATTELL, Mr. GIESE, Mr. HERRICK, Mr. MERCIER, Mr. MICHELL, Mr. SMITH, Mr. ZDANOWICZ.
To secure four or five credits French 10 should be combined with 13, 14, or 15.

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. 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. *Tu., Th.*, 9; *one credit.* Mr. SCHLATTER.

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. *S.*, 8. Mr. HERRICK. *Th.*, 10. Mr. MERCIER.

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. *Two hours per week; three sections; one credit.* Mr. CERF, Mr. HERRICK, Mr. MERCIER.

16. Conversation and reading. Based on phases of modern French life and current thought. Reading of reviews and recent books. Open to students who have had work in elementary conversation. *M., W., F.*, 8; *two credits.* Mr. MERCIER.

17c. Second-year French for students in Commerce. A practical course in conversation, composition, and reading. *Tu., Th., S.*, 10. Mr. CATTELL.

18. 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. Knowledge of French not required. *Tu., Th.*, 11. Mr. CERF.

19. Romance Countries. An illustrated 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. *Tu.*, 2:30. Mr. HERRICK.

For Undergraduates and Graduates

20. Advanced Reading. Continuation of course 11. *Cinq-Mars, Ursule Mirouet. M., W.*, 1:30. Mr. OWEN.

21. Modern French Literature. An elementary survey of the literary movements of the nineteenth century, with a preliminary study of representative authors of the seventeenth and eighteenth centuries, to furnish the necessary background. Lectures and assigned reading. A number of works will be read in class. *M., W., F.*, 9. Mr. MICHELL. *M., W., F.*, 11. Mr. CATTELL.

22. The Romantic Poets. The work of Hugo, both prose and verse, will form the centre of the course. Lectures and collateral reading. *Tu., Th.*, 8. Mr. GIESE.

23. French Literature. The modern drama, beginning with the Romantic movement. Lectures and assigned reading. Some of authors read in class are: Hugo, De Musset, Scribe, Augier, Dumas, Rostand, and Hervieu. *M., W., F.*, 10. Mr. SMITH.

24. Advanced Composition, Conversation, and Reading. Conducted in French. Based on 19th century prose authors characteristic of modern French thought and style. *Tu., Th.*, 10; *two credits.* Mr. MERCIER.

25. La Fontaine, Mme de Sévigné and La Bruyère. A study of their work as it illustrates French manners and private life in the 17th century. Much of the course will be devoted to La Fontaine's fables. Conducted in French. *First semester. Tu., Th.*, 2:30. Mr. DONDO.

26. French Lyric Poetry and Versification. From Villon to recent times. Characteristic poets read in class are Villon, Ronsard, Chénier, Lamartine, Hugo, Verlaine, and Leconte de Lisle. Conducted in French. *Second semester; Tu., Th.*, 2:30. Mr. DONDO.

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; *one credit.* Mr. DONDO.

28. French Literature. From the Renaissance to the Revolution. Lectures with collateral reading. (Omitted 1911–12.) Mr. GIESE.

29C. Third-year French. For students in Commerce. Conversation, composition and reading. *Tu., Th.*, 8. Mr. CATTELL.

30c. Fourth-year French. For students in Commerce. Conversation, reading and commercial correspondence. A continuation of course 29C. *Two credits.* Mr. CATTELL.

31. General Survey of French Literature. An outline course, treating the main currents of the literature and works of prime importance. Class reading, lectures and 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. (Omitted 1911–12.) Mr. MICHELL.

33. Advanced Reading. Of suitable grade to follow course 20. Hugo, *Les Travailleurs de la Mer*. *M.*, *W.*, 2:30.

34. George Sand. Thesis course. Open only to seniors and graduates. *Two credits.* Mr. GIESE.

35. The Teaching of French. Aims and methods. Lectures and reports. *(First semester; one credit.)* A review of work in first and second year French. Practice teaching and visiting classes. *(Second semester; one credit.)* Mr. SMITH.

36. 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. (Omitted 1911–12.) Mr. CERF.

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. (Omitted 1911–12.) Mr. ZDANOWICZ.

38. French Pronunciation. The elements of phonetics in their application to the pronunciation of French. Reading from Passy-Rambeau, *Chrestomathie Phonétique*. *Second semester; Tu.*, 9. Mr. CERF.

39. French Comedy. The origin and development of French comedy to the middle of the nineteenth century. Lectures and reading of representative plays of the seventeenth, eighteenth, and nineteenth centuries. *Tu.*, *Th.*, 11. Mr. ZDANOWICZ.

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. *Two credits.* Mr. SCHLATTER.

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. (Omitted 1911–12.) Mr. SMITH.

43. Seminary in Old French. During the first semester a study will be made of the French versions of the *Sept Sages de Rome* with some related versions in other languages. In the second semester the work will be on the French poem and romance of *Tristan et Isolt* and its various versions and translations in other literatures. *M.*, 2:30 *to* 4:30. Mr. SMITH.

44. Old Provençal. Language and literature of the troubadours. Texts: Grandgent, *Old Provençal;* Appel, *Chrestomathie;* Restori, *Letteratura Provenzale.* Open to undergraduates of suitable preparation. (Omitted 1911–12.) Mr. REED.

45. Principles of language. Explanation 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. (Omitted 1911–12.) 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, Commines, Villon, Rabelais, and Montaigne. (Omitted 1911–12.) 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 1911–12.) 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 1911–12.) Miss GAY.

51. French classicism. A study of the development of the classical ideal in French literature, devoted mainly to the age of Louis XIV. Lectures, discussions, and reports. Conducted mainly in French. 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. *Second semester.* Mr. SMITH.

Comparative Literature 18. The Renaissance in Romance Countries. First semester: Italian; second semester: French. *Two credits.* Mr. CERF.

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. Alternated with Italian 60. (Omitted 1911–12.) Mr. SCHLATTER.

For Graduates

60. Dante. An introduction to the life and times of Dante, with special study of the Divine Comedy. *Tu., Th.*, 1:30; *two or three credits.* Mr. SCHLATTER.

SPANISH

For Undergraduates

1. Elementary Spanish. Grammar and reading. Composition and oral exercises. Reading in modern Spanish prose. For students of the College of Letters and Science. *Two sections; three credits.* Mr. COOL, Mr. GIESE.

2EC. Elementary Spanish for students in Commerce and Engineering. Grammar and easy prose. Practice in speaking and writing Spanish. Students in the College of Letters and Science must take course 1. *Three sections; four credits.* Mr. COOL, Mr. MICHELL, Mr. YOUNG.

For Graduates and Undergraduates

3. Nineteenth Century Spanish. The modern novel, drama, and poetry will be studied. Open to students who have had elementary Spanish. *Tu., Th., S.*, 9. Mr. COOL.
4. Spanish Literature. Reading of selections from Cervantes (*Don Quijote*), 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., S.*, 10. 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 3, 4, 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., Th.*, 11. Mr. COOL.

For Graduates

70. Old Spanish. Texts: *Gramática Histórica*, Pidal; *Poema de Alexandre*, Morel-Fatio, Dresden, 1906. Open to undergraduates of sufficient preparation. *Two credits.* Mr. REED.

PORTUGUESE

71. Portuguese. Language and Literature. Class reading *(Os Lusiadas)*, with lectures on the development of the language and the history of the literature. *Two credits.* (Omitted 1911–12.) Mr. REED.

VULGAR LATIN

72. Vulgar Latin. An introductory course designed for classical students as well as for those in Romance languages. Grandgent, *Introduction to Vulgar Latin* (Heath); Heraeus *Appendix Probi; Silviae Peregrinatio ad Loca Sancta. Twice a week.* 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 great 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.*

7a. Lectures on Old Norse literature, with illustrative readings in translation from the Eddas and Sagas. Norse mythology and the Volsunga Saga are also considered with reference to the *Nibelungenlied* and Wagner's *Ring des Nibelungen*. *First semester; Tu.*, 2:30.

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.*, 2:30.

7c. An intensive study of selected dramas of Ibsen in English. *Second semester; Th.*, 2:30.

A knowledge of the Scandinavian languages is not required for courses 7a, 7b, and 7c.

For Undergraduates and Graduates

8. Old Norse. Kahle's *Altisländisches Elementarbuch* and Nygaard's *Udvalg af den norrőne 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 Stőtter*, *Et Dukkehjem*, *Kongsémnerné*, *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 atten-

tion 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. GEE, MISS MERRILL, MR. WODSEDALEK.

For Undergraduates and Graduates

1. General Zoology. The second semester of Biology 1, for which see index. *Five credits.*

2a. Invertebrate Zoology. A discussion of the structure, development, classification, instincts, and life histories of invertebrate animals. 2a is devoted to the lower invertebrates: the Protozoa, Coelenterata, Vermes, Mollusca, and some smaller groups. *First semester; lectures; M., W.,* 10; *three laboratory periods; four credits.* Mr. HOLMES.

2b. A continuation of course 2a devoted to the higher invertebrates: the Crustacea, Arachnida, Myriapoda, Insects, Echinodermata, and Tunicata. *Second semester; lectures, M., W.,* 10; *three laboratory periods; four credits.* Mr. HOLMES.

4. Vertebrate Zoology. A study of the structure, physiology, habits, classification, and distribution of vertebrates. *First semester; lectures, Tu., Th.,* 8; *laboratory and field work three periods a week; five credits.* Mr. WAGNER.

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 lectures a week; 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.,* 2:30; *two credits.* Mr. HOLMES.

9. Entomology. The anatomy, embryology, classification, and life histories of insects. *Second semester; lectures, Tu., Th.*, 10; *three laboratory periods; five credits.* 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. *First semester; lectures; M., W.*, 11; *two credits.* Mr. MARSHALL.

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; at hours to be arranged; two credits.* Mr. MARSHALL.

13. Forest Entomology. The principal insects injurious to forest trees. *Second semester; two lectures a week at hours to be arranged; two credits.* Mr. MARSHALL.

17. Bionomics. The relation of animals to their environment. *First semester; two lectures a week at hours to be arranged; laboratory and field work arranged for individuals; two 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; one credit.* 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; one credit.* Mr. HOLMES.

21. Ornithology. A study of the main facts relating to birds. *One lecture and one laboratory or field period a week; second semester; 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; amount of credit by arrangement.* Mr. MARSHALL.

24a. Limnology. A course of lectures on the geology, physics, chemistry, and biology of lakes, with special reference to

the results that have been obtained in studies on Wisconsin lakes. *First semester; two lectures per week at hours to be arranged; two credits.* Mr. JUDAY.

24b. A continuation of course 24a. A study of plankton organisms, especially their indentification, variation, distribution, and economic importance. The field work will consist of practice in making physical, chemical, and biological observations on lakes. *Second semester; lectures, laboratory and field work; two credits.* 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; four credits.* 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 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 realiziation 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 produce 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 the 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.

Since the course in chemistry has been established there has been a steady increase in the number of students who are devoting themselves to the study of chemistry. Nevertheless the University has thus far been utterly unable to supply a sufficient number of chemists to colleges, universities, experiment stations, and various industrial firms that have applied for persons of thorough chemical training.

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 short 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, 140 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. *Second semester.* Mechanical Drawing, 3.

Second year: *First semester.* Quantitative Analysis, 6; Ger-

man 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.* Quantative 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; Seminary 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, except that in the second semester Biology 5 is replaced by Bacteriology 3, and Biology of Water Supplies, 3.

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; Food Chemistry, 5.

Fourth year: *First semester.* Thesis in Food 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; Physical Chemistry, 5; Physiological Chemistry, 4; Electives, 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. Water Analysis.
14. Gas Analysis.
19. Proximate Organic Analysis.
20. Organic Chemistry.
30. 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

20. 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. Scientic 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.

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.
19. 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. —. 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 cov-

ered 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; Physical Education, 2; Drill, 2.

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; Physical Education, 2; Drill, 2.

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 to 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, College of Letters and Science. *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.

Chemistry

For detailed information see Chemistry, College of Letters and Science.

1. General Chemistry. A general introductory course.

English

For detailed information see English, College of Letters and Science.

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, College of Letters and Science.

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.

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*The courses in this field are officially classified with those in Political Economy and designated as Political Economy 8a, 8b, 8c, and 8d.

Geology

For detailed information see Geology, College of Letters and Science.

4a. Physical Geography. *First semester.*

German

For detailed information see German, College of Letters and Science.

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, College of Letters and Science.

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, College of Letters and Science.

1. General Lectures and Introductory Laboratory Practice.

Political Economy

For detailed information see Political Economy, College of Letters and Science.

1. The Elements of Economics. *Repeated each semester; lectures, Tu., Th.*, 9.

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 Seminaries. 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, College of Letters and 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.*
31. Latin-American Political Institutions. *First semester.*

Spanish

For detailed information see Romance languages, College of Letters and Science.

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 in 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)* 4.

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, 4.

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 a 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 course in journalism has been arranged primarily for those preparing for newspaper and magazine work, provision has also been made for those interested in technical and class journalism. Two courses are offered in this field, one in the technique of printing and publishing, and one in the methods of technical and trade journalism. These as well as the courses in newspaper and magazine work may be elected by students in the professional schools and courses. Provision is also made by which 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 in the College of Agriculture 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 six 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 typecasting machines, printing presses, and stereotyping machinery also form a part of the equipment. A large collection of typical foreign newspapers serves as a basis for the study of comparative journalism.

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 Wisconsin Country Magazine, a monthly edited and managed by the agricultural students, furnish practice for those interested in technical and trade journalism.

UNIVERSITY PRESS CLUBS

Six clubs are maintained by the students interested in journalism. The University Press Club, which was organized in 1892, is composed of the upper classmen in the institution who have done, are doing, or are preparing to do journalistic work. The Cubs' Club consists of the freshmen and sophomores interested in newspaper work. 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. A journalistic sorority is maintained by the young women of the junior and senior classes. The Advertising Club is composed of students interested in advertising.

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. University graduate scholarships are open

to students of journalism. 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), 0; *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 Shakspere (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.
20. Technique of Printing and Publishing.
21. Technical and Trade Journalism.

See also Current Political Topics (course 32 in political science), The Law of the Press (course 26 in political science), Psychological Principles of Advertising (course 19 in philosophy), 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. Argumentation.
5. Advanced Sophomore Composition.
6. Advanced Composition.
7. Narration.
8. Dramatic Composition.
30. General Survey of English Literature.
36. The Drama.
36a. Shakspere.
40. American Literature.
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.
19. Psychology of Advertising.
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.

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 are 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 third floor of the new Chemistry Building. One of these is equipped as a dispensary, a second for the manufacture of galenical and chemical preparations, and a third for analytical purposes. The work of these three laboratories and of the milling room in the basement is carefully coordinated and culminates in the prescription work of the dispensary.

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 library 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

Cemistry 3.* General Chemistry. The laboratory work accompanying this course is especially designed for pharmacy students. *Eight credits.* Mr. KAHLENBERG, Mr. WALTON, Mr. MANN.

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. Pharmaceutical Technique. *Three credits.* Mr. KREMERS, Mr. MANN.

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, Mr. MANN.

Chemistry 15. Quantitative Analysis. *Second half of semester; daily. Two and one-half credits.* Mr. LENHER, Mr. MANN.

Chemistry 20b. Organic Chemistry for Pharmacy students.

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*The figures refer to the numbers of the courses as given in the statements under departments of instruction.

† Students who have had a year high school course in Botany can substitute an elective for this semester's work.

Recitations and laboratory work. *Two credits.* Mr. KOELKER, Mr. MANN.

Botany 30. Morphology and Classification of the Flowering Plants. The life histories and ecology of seed plants, with a comparative study of the principal families and 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. Pharmaceutical 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, Miss WAKEMAN.

Chemistry 40. Plant chemistry. As a three credit study supplementary to pharmacognosy. *Recitations, M.,* 10; *two laboratory periods.* Mr. KREMERS, Miss WAKEMAN.

Botany 5. Vegetable Histology. A systematic study of the tissues of the phanerogams and ferns. *Five credits.* Mr. DENNISTON.

Botany 32. Pharmacognsy. 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, Mr. FISCHER, Mr. NETZEL.

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, Miss WAKEMAN.

Chemistry 40. Plant Chemistry. Continued from first semester. Mr. KREMERS, Miss WAKEMAN.

Chemistry 45. Alkaloid Assay. *One credit.* Mr. R. FISCHER, and assistants.

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, Mr. FISCHER, Mr. NETZEL.

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, 3, and 4 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.

Detailed information regarding the courses in the University and in the State Library School is given in a special bulletin entitled Library Training Courses.

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

(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. Students have at their service not only the resources of the University Library, but the famous collection of books, pamphlets, public documents, newspaper files, manuscripts, broadsides, and maps belonging to the Wisconsin Historical Library; the library of the Wisconsin Academy of Sciences, Arts, and Letters; the Legislative Reference Library, conducted by the Wisconsin Library Commission; the State Law Library, conducted by the justices of the Supreme Court; and the Madison Free Library. 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. 289 ff.), 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. 289 ff.), 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 op-

tion of *two* credits in a teachers course in a second department (June 3, 1907.)

A departmental teachers course may not be credited toward the certificate unless the subject concerned is offered as a major or minor.

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* permited 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.*

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 1910–11 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, Mathematics and Physical Geography; Donald D. Grindell, History; Sarah D. Jenkins, Enlish and French; Irma Kleinpell, German; Marie McClernan,

Latin and Greek; Julia A. Murphy, History; Martha E. Sell, History; Katherine Regan, History.

ELEMENTARY SCHOOLS.—*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; Jessie M. Clough, Second Grade; Clare Dengler, First Grade.

GEORGE WASHINGTON SCHOOL.—Mary L. Edgar, *Principal*, Eighth Grade; Renette Jones, Seventh Grade; Della J. Bowers, Sixth Grade; Mattie R. Jackson, Fifth Grade.

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; Agricultural Education, *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. Agricultural Education. *Second semester, two credits.* 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. *Second semester; two credits.* 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 or 15 (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 or 15 may be taken simultaneously. *Second semester; two credits.* 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. *Repeated each semester; two or three credits.* Mr. WELLS.

Education 6. Public Education. *First semester; two credits.* Mr. ELLIOTT.

Education 11. Mental Development. *Repeated each semester; two or three credits.* Mr. O'SHEA.

Education 13. Principles of Education. *Repeated each semester; two or three credits.* Mr. O'SHEA.

Education 41. Educational Psychology. *Repeated each semester; two or three credits.* 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 under 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-four 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; 2 or 3 or 5 or 6 (to be taken in the sophomore or junior year) and 50a; and one of the following groups: (a) 34 *and* 35; (b) 36 *or* 37; (c) 40.

DEPARTMENTAL TEACHERS COURSES.—50a. The Teaching of English. *First semester; two credits.* Mr. BASSETT.

50b. The Teaching of English. (Continuation of 50a.) *Second semester; two credits.* Mr. BASSETT.

French

See under Romance Languages.

Geology

See under Physiography and Geography.

German

For 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 will as a minimum have to devote

to German from eight to ten semester hours a year for the remaining three years, taking thus, including the thesis, a total of at least twenty-four credits in advance of course 2. For the maximum number of credits that may be elected see p. ——. 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 year course or two semester courses in German literature selected from courses 21 to 31 inclusive not counting 29.

DEPARTMENTAL TEACHERS COURSE.—German 14. The Teaching of German. *First semester; two credits.* 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. *Each semester; two credits.* Mr. CHASE.

History 51. Supplementary Reading for High School Teachers of History. *Second semester; two credits.* 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.

REQUIREMENTS FOR TEACHING HOME ECONOMICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits including courses 2, 3, 5, and 6.

DEPARTMENTAL TEACHERS COURSE.—Home Economics 21. Prerequisite courses, 2, 3, 4, 5, 6, 7, 8, 9, 10. *Second semester; two credits.* 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 reading course for one year.

DEPARTMENTAL TEACHERS COURSE.—Latin 16. The Teaching of Latin. *Second semester; two credits.* Mr. SLAUGHTER.

Manual Arts

For a detailed description of the courses offered in Manual Arts, as a preparation for teaching, see index under Manual Arts.

REQUIREMENTS FOR TEACHING MANUAL ARTS AS A MAJOR SUBJECT —UNDERGRADUATE COURSE.—A minimum of thirty credits in selected courses.

REQUIREMENTS FOR TEACHING MANUAL ARTS AS A MINOR SUBJECT —UNDERGRADUATE COURSE.—A minimum of twelve credits, including courses 1, 10, 11, and either 12 or 13.

DEPARTMENTAL TEACHERS COURSE.—Manual Arts 12. The Teaching of Manual Arts. *Second semester; two credits.* Mr. CRAWSHAW.

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. *Repeated each semester; two credits.* Mr. HART.

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. *First semester; three credits.* Mr. JASTROW, Mr. SHARP, Mr. OTTO.

Physical Education

For detailed information concerning the courses in Physical Education as a preparation for teaching, see Index under Physical Education. The Department of Physical Education offers special courses in the teaching of physical education.

REQUIREMENTS FOR TEACHING PHYSICAL EDUCATION AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of forty credits in courses 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and four years in course 20.

REQUIREMENTS FOR TEACHING PHYSICAL EDUCATION AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in courses 5, 8, 9, 10, 11, 12, 13, and 19. Not more than four credits in course 19, and 2 years in course 20.

DEPARTMENTAL TEACHERS COURSE.—Physical Education 19. Special Technique. *Two credits.*

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. Open to all who elect physics either as a major or as a minor subject. *Second semester; two credits.* 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. *First semester; two credits.* 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, bacteriology 1, general hygiene 7, 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. *Second semester; two credits.* 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 second year French. The following courses are required: course 35 and one two-credit composition or conversation course, or two one-credit courses of such work. At least one of the three-credit courses dealing with an extensive period of French literature 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—UNDEGRADUATE COURSE.—A minimum of eight credits in advance of second year French. At least one course in conversation or composition, and one course in some extensive period of French literature, 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 COURSE.—French 35. The Teaching of French. *Throughout the year; one or two credits.* Mr. SMITH.

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 fol-

lowing courses: biology 1; zoology 2a, 2b, 4, 9, and 25. In special cases other courses may be substituted by permission of chairman of department.

REQUIREMENTS FOR TEACHING ZOOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits from approved courses in the list above indicated. The second semester only of Biology 1 may be counted toward the fulfillment of this requirement.

DEPARTMENTAL TEACHERS COURSE.—Zoology 20. The Teaching of Zoology. *First semester; one credit.* 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.

TEACHING FELLOWSHIPS

In accordance with the recognized policy of encouraging post graduate study in special directions, and for the purpose of inaugurating a scheme for the more thorough and extended preparation for teaching and supervisory positions in the public schools of the state, the Regents of the University have established six special fellowships, known as "Teaching Fellowships." These are awarded in a manner that will lead to the selection of those graduates of the University of Wisconsin, for whom an additional year of special professional training and experience will result in the attainment of a high degree of efficiency for the public school service of the state. Appointments are made upon the recommendation of the Committee on the Training of Teachers and are for a period of one academic year. Each fellowship has an annual value of Two Hundred and Fifty Dollars ($250). The holders of these fellowships devote one-half year to special graduate study within the University, and one-half year to apprenticeship teaching, under supervision, in one of the so-called "cooperating high schools." A further payment of approximately One Hundred and Twenty-five Dollars ($125) is made for the service rendered by each fellow in the cooperating high school.

Further details, concerning the fellowships, may be obtained from the special bulletin of the Course for the Training of Teachers, or, from the Director of the Course.

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 stu-

The College of Engineering Circular giving detailed information concerning the college, may be obtained upon application to the Registrar of the University.

dents are admitted in accordance with the provisions stated on pages 100 and 101.

The requirements for the admission of regular students are stated fully on page ——.

Preparation in Algebra for Engineering

All students entering the College of Engineering will be tested in Algebra by class work and by an examination given shortly after 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 degrees, 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: Mathematics, English, and French or German. The exact number of credits to be of

fered 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. The advanced course may also be taken as a five year course in engineering, the student registering in the College of Engineering for the entire five years. The admission requirements under this arrangement are the same as for the College of Letters and Science.

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
Assaying fee (Mining 20)	15 00

The fees for graduate students are the same as for undergraduate students, except the incidental fee which is $12.00.

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 five 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, the engineering library and laboratories for work in mechanical engineering, steam, and the testing of materials. A second large building of simple construction contains the electrical laboratories and the various departments for shop instruction. A third building contains the laboratories for chemical engineering. Laboratory work in hydraulics is provided for in a large concrete building situated on the shore of Lake Mendota. The mining building contains the ore dressing and assaying laboratories.

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 engineering library is housed in the main engineering building, where reading-room facilities are provided for about one hundred students. The collection of technical books is very complete and includes files and current numbers of about one hundred seventy-five periodicals.

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 standards laboratory.

These are all housed in the same building, and have recently been extensively remodeled. Their equipment is unusually complete and every facility is offered for efficient work. The Department of Electrical Engineering co-operates with the Wiscon-

sin Railroad Rate Commission in the use of its laboratories for standardizing work.

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.—The new assay laboratories include a large furnace room, a chemical laboratory and balance room, equipped with all the important types of assay apparatus. Ore dressing laboratories are under construction and it is expected that they will be in operation in March, 1911.

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.

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 meterological 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 planimeters, 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 ma-

chines 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.

THE FOREST PRODUCTS LABORATORY.—There has recently been established at the University the Research Laboratory of the United States Forest Service, in which is conducted the research work of the department relative to the utilization of forest products. This laboratory is conducted in cooperation with the work of the University, and offers especially favorable opportunities for engineering students to carry on advanced study and research pertaining to the utilization of forest products. These opportunities are, primarily, of value to students in Mechanical and Chemical Engineering.

The investigative work and equipment of the laboratory includes the following divisions of work: (1) Timber Physics, (2) Timber Tests, (3) Wood Preservation, (4) Wood Distillation, (5) Wood Pulp, (6) and Chemistry of Wood, (7) Engineering. The equipment is complete in all respects, and is such that it is possible to approximate commercial conditions much more closely than is done in the ordinary laboratory work.

Detailed information is contained in a special circular, which will be furnished on request.

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 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.

A further description of the engineering laboratories and museums may be found in the separate bulletin issued by the College of Engineering.

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

Five 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.
MINING ENGINEERING.

Graduates of these advanced courses will receive the professional degrees of *Civil Engineer, Mechanical Engineer, Electrical Engineer, Chemical Engineer, and Engineer of Mines.*

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, Chemical Engineer,* and *Engineer of Mines* are con-

ferred as second degrees upon Bachelors of Science in the Civil, Mechanical, Electrical, Chemical, and Mining 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,

*For satisfactory reasons, the Faculty will permit the substitution of Spanish for French or German.

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.

Two or three years of high school Latin will be accepted as satisfying one-half the entrance requirement in language. The other half will be satisfied, normally, by completing one semester of language work at the University.

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 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

Inspection trips, aggregating a week or ten days, are required of all engineering students during the junior and senior years. These trips are arranged for by the various committees, and industries which best illustrate the work of the course are inspected. The students are accompanied by members of the instructional staff.

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	Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Chemistry 2	General Chem. and Qual. Analysis	3
Drawing 1	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

	Second Semester	
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analy. Geometry	5
Chemistry 2	General Chem. and Qual. Analysis	3
Drawing 2	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

SOPHOMORE YEAR

	First Semester	
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	5
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 3	Elementary Surveying	4
Drawing 3	Descriptive Geometry	3
	Total	18

	Second Semester	
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 4	Advanced Surveying	3
Railway Engr. 1	Railway Curves	2
	Total	20

*German 2E, or French 5E.

Summer work: Top. Engr. 6. Trigonometrical Survey, 4 weeks. May be taken at the end of the Sophomore or Junior year.

Note: In reckoning the hours per week required for 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.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 51	Materials of Construction	2
Structural Engr. 1	Structural Details	2
Railway Engr. 2a	Railway Location and Construction	2
Railway Engr. 2b	Practice in Field and Office Work	3
Hydraulic Engr. 1	Hydraulics	3
*A Steam Engr. 7 / Steam & Gas Engr. 27	Engines and Boilers, 2 credits / Calibration of Instruments, 1 credit	3
*B Chemistry 11	Quantitative Analysis, 3 credits	
	Total	20

Second Semester		Credits
Mechanics 52	Materials of Construction	2
Railway Engr. 3	Maintenance of way	2
Railway Engr. 10	Masonry Construction	2
Structural Engr. 2	Bridge Stresses	4
Structural Engr. 3	Roof Trusses and Plate Girders	3
Steam & Gas Engr. 27	Calibration of Instruments	1
Hydraulic Engr. 10	Hydrology	2
*A Railway Engr. 6 / †Astronomy 6. / †Top. Engr. 5	Railway Design, 2 credits / Astronomical Practice, 3 credits / Elementary Geodesy, 3 credits	5
*B Chemistry 14	Water Analysis, 5 credits	
	Total	21

Summer work: Trigonometrical Survey, 4 weeks. May be taken at the end of the Sophomore or Junior year.

SENIOR YEAR

First Semester		Credits
Structural Engr 5, 6	Reinforced Concrete Arches and Dams	4
Structural Engr. 4	Riveted and Pin-Connected Trusses	4
Hydraulic Engr. 11	Water Supply	3
Electrical Engr. 5	Testing Direct Current Machinery	1
Electrical Engr. 6	Elements of Electrical Engr	2
‡Electives		6
	Total	20

Second Semester		Credits
Railway Engr. 11	Substructures	1
Hydraulic Engr. 14	Rivers and Canals	1
Electrical Engr. 5	Testing Direct Current Machinery	1
Electrical Engr. 18	Elements of Electrical Engr	2
Engr. Contracts 1	Contracts and Specifications	2
‡Thesis and Electives		11
	Total	18

†Astronomy 6 or Top. Engr. 5.

*A or B. Option B should be selected by students specializing in sanitary engineering.

‡Bacteriology 1 and 3, 6 credits, to be taken by students specializing in sanitary engineering.

ADVANCED CIVIL ENGINEERING COURSE

Leading to the Degree of C. E.

FIRST YEAR.

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 101	General Lectures and Lab. Practice	5
Top. Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 102	General Lectures and Lab. Practice	5
Top. Engr. 2	Elementary Surveying	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Drawing 3	Descriptive Geometry	3
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 3	Elementary Surveying	4
Steam Engr. 7	Engines and Boilers	2
Steam and Gas Engr. 27	Calibration of Instruments	1
	Total	20

Second Semester		
Railway Engr. 1	Railway Curves	2
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 51	Materials of Construction	2
Struct. Engr. 2a	Bridge Stresses	4
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 4	Advanced Surveying	3
Steam and Gas Engr. 27	Calibration of Instruments	2
	Total	19

Summer work: Top. Engr. 6, four weeks.

THIRD YEAR.

First Semester		Credits
Hydraulic Engr. 1	Hydraulics	3
Ry. Engr. 2a	Railway Location and Construction	2
Ry. Engr. 2b	Practice in Field and Office Work	3
Political Economy 1	Elements of Economics	3
Structural Engr. 1	Structural Details	2
Electrical Engr. 5	Testing Direct Current Machinery	2
Electrical Engr. 6	Elements of Electrical Engineering	2
Mechanics 52	Materials of Construction	2
	Total	19

Second Semester.		
Hydraulic Engr. 10	Hydrology	2
Railway Engr. 3	Railway Maintenance	2
Railway Engr. 6	Railway Design	2
Railway Engr. 10	Masonry Construction	2
Political Economy 1	Elements of Economics	3
Structural Engr 3	Designs and Estimates	3
Electrical Engr. 18	Elements of Electrical Engineering	2
*Astronomy 6	Astronomical Practice	3
*Top. Engr. 5	Elementary Geodesy	
	Total	19

FOURTH YEAR.

First Semester		
Structural Engr. 5. 6	Reinforced Concrete Arches and Dams	4
Structural Engr. 4	Riveted and Pin-connected Trusses	4
Hydraulic Engr. 11	Water Supply Engineering	3
Elective		5
†Free Electives		5
	Total	21

Second Semester.		
Railway Engr. 11	Substructures	1
Hydraulic Engr. 14	Rivers and Canals	1
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		11
Free Electives		5
	Total	20

*Astronomy 6 or Top. Engr. 5.

†To be taken preferably in the College of Letters and Science.

MECHANICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR.

First Semester.		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester.		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR.

First Semester.		
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Shop Work 4, 5, 6, 7	Machine Work and Tool Making	5
	Total	18

Second Semester.		
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	5
	Total	19

*German 2E or French 5E.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Machine Design 3	Machine Design	5
Steam & Gas Engr. 21	Efficiency of Machine Elements	1
Steam & Gas Engr. 1	Elementary Thermodynamics	5
Shop Work 7, 8	Machine Work and Tool Making	2
	Total	20

Second Semester		
Mechanics 54	Materials of Construction	1
Machine Design 3	Machine Design	5
Steam & Gas Engr. 22	Engineering Testing	2
Steam & Gas Engr. 2	Elementary Thermodynamics	4
Hydraulic Engr. 1,	Hydraulics	3
Elective		3
Shop Work 7, 9	Machine, Pattern and Foundry Work	3
	Total	21

SENIOR YEAR

First Semester		
Steam & Gas Engr. 5	Steam and Gas Engine Calculations	2
Com'l. Mech. Engr. 1	Commercial Mechanical Engineering	3
Electrical Engr. 3	Theory of Direct Currents	3
Electrical Engr. 5	Direct Current Laboratory	2
Steam & Gas Engr. 23	Engineering Testing	2
Hydraulic Engr. 4	Water Power Engineering	3
Thesis and Elective		5
	Total	20

Second Semester		
Steam & Gas Engr. 5	Steam and Gas Engine Calculations	2
Com'l. Mech. Engr. 1	Commercial Mechanical Engineering	2
Electrical Engr. 5	Alternating Current Laboratory	2
Electrical Engr. 17	Elem. Applied Alternating Currents	3
Steam & Gas Engr. 24	Advanced Engineering Testing	1
Engr. Contracts 1	Contracts and Specifications	2
Thesis and Elective		8
	Total	20

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

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 101	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus.	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of drawing	3
Physics 102	General Lectures and Lab. Practice	5
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential and Integral Calculus	4
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Drawing 3	Descriptive Geometry	3
Shop Work 3, 5, 7	Forge, Bench and Machine Work	4
Top. Engr. 8	General Surveying	3
	Total	19

Second Semester		
Machine Design 1	Mechanism	5
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Shop Work 4, 5, 6, 7	Machine Work and Tool Making	3
Elective		5
	Total	20

THIRD YEAR

First Semester		Credits
Machine Design 3	Machine Design	5
Steam & Gas Engr. 1	Elementary Thermodynamics	5
Mechanics 54	Materials of Construction	1
Steam & Gas Engr. 21	Efficiency of Machine Elements	1
Electrical Engr. 3	Theory of Direct Currents	3
Electrical Engr. 5	Direct Current Laboratory	2
Shop Work 7, 8	Machine Work and Tool Making	3
	Total	20

Second Semester		
Machine Design 3	Machine Design	5
Steam & Gas Engr. 2	Elementary Thermodynamics	3
Hydraulic Engr. 1	Hydraulics	3
Electrical Engr. 5	Alternating Current Laboratory	2
Electrical Engr. 7	Elem. Applied Alternating Currents	3
Steam & Gas Engr. 22	Engineering Testing	2
Elective		2
	Total	20

FOURTH YEAR

First Semester		
Steam & Gas Engr. 5	Steam and Gas Engine Calculations	2
Com'l. Mechanical Engr. 1	Commercial Mechanical Engineering	3
Political Economy 1	Elements of Economics	3
Hydraulic Engr. 4	Water Power Engineering	3
Steam & Gas Engr. 23	Engineering Testing	2
Elective and Thesis		7
	Total	20

Second Semester		
Steam & Gas Engr. 5	Steam and Gas Engine Calculations	2
Commercial Engr. 2	Commercial Mechanical Engineering	2
Political Economy 1	Elements of Economics	3
Engr. Contracts 1	Contracts and Specifications	2
Steam & Gas Engr. 24	Advanced Engineering Testing	1
Elective and Thesis		10
	Total	20

There is required four weeks summer shop work which may be taken during any vacation period.

ELECTRICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR.

First Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Analysis	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 2	General Chem. and Qualitative Analysis	3
Drawing 2	Elements of Drawing	3
Shop work 2, 3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		Credits
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	5
Machine Design 1	Mechanism	4
Chemistry 11	Quantitative Analysis	3
†Top. Engr	Elementary Surveying	
English	Sophomore Composition	2
	Total	19

Second Semester		Credits
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	5
Mechanics 1	Statics	5
Mechanics 2	Mechanics	
Drawing 3	Descriptive Geometry	3
Shop Work 4, 5	Machine Work	2
	Total	19

*German 2E or French 5E.
†Chemistry or Surveying.
Vacation Shop Work { Tool Making, 2 credits. General Shop Work, 2 credits.

JUNIOR YEAR

	First Semester	Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Electrical Engr. 1	Electromagnetism	4
Steam and Gas Engr. 6	Thermodynamics	3
Machine Design 2	Machine Design	3
*Physics 104	Electrical and Magnetic Measurements	3 or 2
*Mathematics 110	Higher Mathematics	
†Political Econ. 8a	Accounting	
	Total	20 or 19

	Second Semester	
Electrical Engr. 1	Electromagnetism	2
Elect. Engr. 11	Elementary Alternating Currents	3
Elect. Engr. 2	Testing Direct Current Machinery (Lab.)	2
Steam and Gas Engr. 22	Elementary Thermodynamics (Lab.)	2
Steam and Gas Engr. 6	Thermodynamics	3
Hydraulic Engr. 1	Hydraulics	3
*Machine Design 2	Machine Design, 2 credits	5 or 6
*Elective	3 Credits	
†English 4	Commercial Correspondence, 2 credits.	
†Political Econ. 1	Elements of Economics, 4 credits.	
	Total	20 or 21

SENIOR YEAR

	First Semester	
Hydraulic Engr. 4	Water Power Engr.	3
Elect. Engr. 21	Electrical Applications	5
Elect. Engr. 12	Testing Alternating Cur. Mach. (Lab.)	2
*Elect. Engr. 25	Conference, 2 credits	9
*Elect. Engr. 13	Alternating Current Mach., 3 credits	
*Elect. Engr. 2	Testing Direct Cur. Dyn. (Lab.), 1 cred.	
*Elect. Engr. 4	Design of Direct Current Dyn., 1 cred.	
*Steam and Gas Engr. 23	Elem. Thermodynamics (Lab.), 2 cred.	
†Elect. Engr. 19	Alternating Current Machinery, 3 cred.	
†Political Econ. 8b	Business Organization, 2 credits	
†Political Econ. 9	Commercial Law, 4 credits	
Thesis		1
	Total	20

	Second Semester	
Elect. Engr. 21	Electrical Applications	5
Elect. Engr. 12	Testing Alternating Cur. Mach. (Lab.)	2
*Engr. Contracts 1	Contracts and Specifications, 2 credits.	13
*Elective and Thesis	8 Credits	
*Elect. Engr. 13	Alternating Current Machinery, 3 cred.	
†Political Econ. 8d	Business Organization, 2 credits	
†Elect. Engr. 25	Conference, 2 credits	
†Elective and Thesis	9 Credits	
	Total	20

*Option A. Option A is intended primarily for students who expect to follow the technical side of Electrical Engineering: Physics 104 or Mathematics 110.

†Option B. Option B is intended for those students who expect to interest themselves more particularly in the business or commercial side.

Either Option A or Option B must be adhered to throughout the Junior and Senior years.

Electrical Engineering 25 may be taken in either semester of the Senior year.

ADVANCED ELECTRICAL ENGINEERING COURSE

Leading to the E. E. Degree

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 101	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 102	General Lectures and Lab. Practice	5
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential and Integral Calculus	4
Mathematics 110	Higher Mathematics	3
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
Chemistry 12	Quantitative Analysis	3
	Total	19

Second Semester		
Drawing 3	Descriptive Geometry	3
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Top. Engr. 8	General Surveying	3
Mathematics 110	Higher Mathematics	3
Shop Work 4, 5	Machine Work	2
Elective		2
	Total	20

Vacation Shop Work { Tool Making, 2 Credits
{ General Shop Work, 2 Credits.

THIRD YEAR

First Semester

		Credits
Elect. Engr. 1	Elementary Electromagnetism	4
Steam and Gas Engr. 1	Elementary Thermodynamics	3
Steam and Gas Engr. 2	Elementary Thermodynamics	2
Machine Design 2	Machine Design	2
Pol. Economy 1	Elements of Economics	4
Physics 104	General Lecture and Lab. Practice	3
English 3	Technical Writing	2
	Total	20

Second Semester

Elect. Engr. 1	Elementary Electromagnatism	2
Elect. Engr. 2	Testing Direct Current Dynamos (Lab.),	2
Steam and Gas Engr. 1	Elementary Thermodynamics	2
Steam and Gas Engr. 2	Elementary Thermodynamics	1
Machine Design 3	Machine Design	2
Elect. Engr. 11	Fundamental Laws of Altern'g Currents	3
Hydraulic Engr. 1	Hydraulics	3
Steam and Gas Engr. 22	Engineering Testing	2
Pol. Economy	Economics	3
	Total	20

FOURTH YEAR

First Semester

Elect. Engr. 2	Testing Direct Current Dynamos (Lab.).	1
Elect. Engr. 4	Design of Direct Current Dynamos	1
Elect. Engr. 12	Test. Alternating Current Mach. (Lab.).	2
Elect. Engr. 13	Alternating Current Machinery	3
Steam and Gas Engr. 23	Steam and Gas Engine Testing	2
Hydraulic Engr. 4	Water Power Engineering	3
Elect. Engr. 21	Electrical Applications	5
Elective and Thesis		3
	Total	20

Second Semester

Elect. Engr. 12	Test. Alternating Current Mach. (Lab.).	2
Elect. Engr. 13	Alternating Current Machinery	3
*Elect. Engr. 25	Conference	2
Engr. Contracts 1	Contracts and Specifications	2
Elect. Engr. 21	Electrical Applications	5
Elective and Thesis		5
	Total	19

*Elect. Engr. 25 may be taken in either semester.

CHEMICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E	Freshman German	4
*French 5 E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester.		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry.	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 2,3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Chemistry 11	Quantitative Analysis	5
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
	Total	18

* German 2E or French 5E.

Summer Course in Chemistry or its equivalent in industrial work.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 5	Materials of Construction	2
Steam & Gas Engr. 6	Thermodynamics	3
Machine Design 2	Machine Design	3
Chemistry 20	Organic Chemistry	5
Chemistry 30	Physical Chemistry	2
	Total	20

Second Semester

Steam and Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 25	Engineeting Testing	2
Chemistry 30	Physical Chemistry	4
Electrical Engr. 6	Elements of Electrical Engineering	2
Chemical Engr. 11	Chemical Machinery and Appliances	2
Chemical Engr. 12	Fuel Gas and Oil Analysis	2
Elective		5
	Total	20

Inspection tour through industrial establishments.

SENIOR YEAR

First Semester

Electrical Engr. 18	Elements of Elect. Engr.	2
Electrical Engr. 5	Testing Direct Current Machinery	2
Steam & Gas Engr. 26	Engineering Testing	1
Chemical Engr. 15	Industrial Chemistry	2
Chemical Engr. 16	Applied Thermal Chemistry	2
Chemical Engr. 18	Metallurgy of Iron and Steel	2
Thesis and Electives		9
	Total	20

Second Semester

Engr. Contracts 1	Contracts and Specifications	2
Chemical Engr. 13a	Municipal Gas Manufacture	2
Chemical Engr. 13b	Power and Fuel Gas Manufacture	1
Chemical Engr. 14	Chemical Manufacture	2
Chemical Engr. 16	Applied Thermal Chemistry	2
Thesis and Electives		9
Machine Design 4	Machine Design	2
	Total	20

ADVANCED CHEMICAL ENGINEERING COURSE

Leading to the Degree of Ch. E.

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry.	5
Drawing 1	Elements of Drawing	3
Chemistry 1	General Chemistry	5
Physics 101	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Drawing 2	Elements of Drawing	3
Chemistry 1	General Chemistry	5
Physics 102	General Lectures and Lab. Practice	5
Shop work 2, 3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Machine Design 1	Mechanism	4
Chemistry 20	Organic Chemistry	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Chemistry 11	Quantitative Analysis	3
	Total	21

Second Semester		
Drawing 3	Descriptive Geometry	3
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Chem. Engr. 11	Chemical Machinery and Appliances	2
Electrical Engr. 6	Elements of Electrical Engineering	2
Chemistry Elective		5
	Total	19

Summer course in Chemistry or its equivalent in industrial work.

THIRD YEAR

First Semester		Credits
Chemistry 30	Physical Chemistry	2
Steam & Gas Engr. 6	Thermodynamics	3
Electrical Engr. 18	Elements of Electrical Engineering	2
Electrical Engr. 5	Testing Direct Current Machinery	2
Machine Design 2	Machine Design	3
Political Economy 1	Elements of Economics	3
Elective		5
	Total	20

Second Semester		
Chemistry 30	Physical Chemistry	4
Steam & Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 25	Calibration of Instruments	2
Machine Design 4	Machine Design	2
Political Economy 1	Elements of Economics	3
Chemical Engr. 12	Fuel, Gas and Oil Analysis	2
Elective		4
	Total	20

FOURTH YEAR

First Semester		
Chemical Engr. 18	Metallurgy of Iron and Steel	2
Steam & Gas Engr. 26	Calibration of Instruments.	1
Chemical Engr. 15	Industrial Chemistry	3
Chemical Engr. 16	Applied Thermal Chemistry	2
Chemical Engr. 1	Electrolytic Phenomena	5
Elective and Thesis		7
	Total	20

Second Semester		
Chemical Engr. 13a	Municipal Gas Manufact're & Distribut'n	2
Chemical Engr. 13b	Power and Fuel Gas Manufacture	1
Chemical Engr. 16	Applied Thermal Chemistry	2
Chemical Engr. 14	Chemical Manufacture	2
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		10
	Total	19

APPLIED ELECTROCHEMISTRY COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credit
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Analysis	3
Shop Work 1	Pattern Making	1
	Total	19

Second Semester		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry.	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Analysis	3
Shop Work 2	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Chemistry 11	Quantitative Analysis	5
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
	Total	18

*German 2E or French 5E.
Summer Work in Chemistry or its equivalent in industrial work.

JUNIOR YEAR.

	First Semester.	Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Elect. Engr. 1	Electromagnetism	4
Chemistry 20	Organic Chemistry	5
Chemistry 31	Electrochemistry	4
	Total	20

	Second Semester.	
Elect. Engr. 2	Direct Current Laboratory	2
Elect. Engr. 1	Electromagnetism	2
Elect. Engr. 17	Alternating Currents	3
Elect. Engr. 15	Alternating Current Laboratory	2
Chemistry 31	Electrochemistry	4
Chem. Engr. 12	Fuel, Gas and Oil Analysis	2
Elective		5
	Total	20

Inspection tour through industrial establishments.

SENIOR YEAR.

	First Semester.	
Chem. Engr. 1	Electrolytic Phenomena	5
Chem. Engr. 15	Industrial Chemistry	2
Chem. Engr. 16	Applied Thermal Chemistry	2
Steam & Gas Engr. 7	Steam Engineering	2
Steam & Gas Engr. 27	Calibration of Instruments	2
Thesis & Elective		7
	Total	20

	Second Semester.	
Chem. Engr. 2	Electrothermal Processes and Products.	3
Chem. Engr. 6	Batteries	2
Chem. Engr. 11	Chemical Machinery and Appliances	2
Chem. Engr. 14	Chemical Manufacture	2
Engr. Contracts 1	Contracts and Specifications	2
Thesis and Elective		9
	Total	20

MINING ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester.		Credits
*German 2E *French 5E *Spanish 2EC	Freshman German Freshman French Freshman Spanish	4
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Chemistry 2	General Chemical and Qual. Analysis	3
Drawing 1	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
*German 2E *French 5E *Spanish 2EC	Freshman German Freshman French Freshman Spanish	4
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 2	General Chem. and Qualitative Analysis	3
Drawing 2	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

Summer School Surveying, six weeks.

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 101	General Lectures and Lab. Practice	4
Chemistry 11	Quantitative Analysis	5
Geology 6	General Mineralogy	5
	Total	19

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 102	General Lectures and Lab. Practice	4
Mining 20	Assaying	3
Geology 6	General Mineralogy	5
Drawing 3	Descriptive Geometry	3
	Total	19

* German 2E, French 5E or Spanish 2EC.

JUNIOR YEAR

First Semester		Credits
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Steam and Gas Engr. 6	Thermodynamics	3
Steam and Gas Engr. 27	Calibration of Instruments	2
Railway Engr. 4	Railway Location	2
Geology 1	General Geology	5
Mining 1	Excavation and Quarrying	3
	Total	20

Second Semester		
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Steam and Gas Engr. 6	Thermodynamics	3
Electrical Engr. 6	Elements of Electrical Engineering	2
Geology 2	Applied Geology	5
Mining 2	Tunneling, Boring and Shaft Sinking	3
	Total	20

Summer Mining Work, six weeks.

SENIOR YEAR

First Semester		
Hydraulic Engr. 1	Hydraulics	3
Electrical Engr. 5	Testing Direct Current Machinery	2
Electrical Engr. 18	Elements of Electrical Engr.	2
Geology 7a	Petrology	3
Mining 3	Prospecting and Mine Development	1
Mining 4	Exploitation of Mines	2
Mining 5	Mine Engineering	1
Mining 22	General Metallurgy	3
Thesis		3
	Total	20

Second Semester		
Structural Engr. 10	Structural Design	3
Engr. Contracts 1	Contracts and Specifications	2
Geology 11	Economic Geology	5
Mining 5	Mine Engineering	1
Mining 7	Ore Dressing and Coal Washing	3
Mining 23	Metallurgy of Base Metals	3
Thesis		3
	Total	20

ADVANCED MINING ENGINEERING COURSE

Leading to the E. M. Degree

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry.	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing.	3
Physics 101	General Lectures and Lab. Practice	5
Topographical Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 102	General Lectures and Lab. Practice	5
Topographical Engr. 2	Elementary Surveying	1
	Total	19

Summer school surveying, six weeks.

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Chemistry 11	Quantitative Analysis	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Geology 6	General Mineralogy	5
	Total	19

Second Semester		
Drawing 3	Descriptive Geometry	3
Mining 20	Assaying	3
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Geology 6	General Mineralogy	5
Electrical Engr. 6	Elements of Electrical Engineering	2
	Total	20

THIRD YEAR

	First Semester	Credits
Mining 1	Excavation and Quarrying	3
Mining 22	General Metallurgy	3
Geology 1	General Geology	5
Steam & Gas Engr. 6	Thermodynamics	3
Electrical Engr. 5	Testing Direct Current Machinery	1
Electrical Engr. 18	Elements of Electrical Engr.	2
Hydraulics 1	Hydraulics	3
	Total	20

	Second Semester	
Mining 2	Tunneling, Boring and Shaft Sinking	3
Mining 23	Metallurgy of Copper, Lead, etc.	3
Geology 2	Applied Geology	5
Steam & Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 27	Calibration of Instruments	2
Electrical Engr 5	Testing Direct Current Machinery	1
Structural Engr. 10	Structural Design	3
	Total	20

Summer Mining Work, six weeks.

FOURTH YEAR

	First Semester	
Mining 3	Prospecting and Mine Development	1
Mining 4	Exploitation of Mines	2
Mining 5	Mine Engineering	2
Mining 24	Metallurgy of Iron and Steel	3
Geology 7a	Petrology	3
R. R. Engr. 4	Railway Location	2
Elective and Thesis		7
	Total	20

	Second Semester	
Mining 5	Mine Engineering	2
Mining 7	Ore Dressing and Coal Washing	3
Mining 25	Advanced Metallurgy	3
Geology 11	Economic Geology	5
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		5
	Total	20

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 or 102; 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

For detailed description of courses given in the College of Letters and Science see Index under Astronomy, Bacteriology and Hygiene, Chemistry, English, French, Geology, German, Mathematics, Meteorology, Physics, and Spanish.

COURSES GIVEN IN THE COLLEGE OF ENGINEERING

CHEMICAL ENGINEERING

APPLIED ELECTROCHEMISTRY AND ELECTROMETALLURGY

PROFESSOR BURGESS, DR. WATTS; MR. ASTON.

1. Electrolytic Phenomena, and their application in the electrodeposition of metals for plating, electrotyping and refining, and in electrochemical generation and storage of electrical energy. Prerequisite, courses in Chemistry. *First semester; five credits.* Mr. WATTS.
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. Prerequisite, course 1. *Second semester; three credits.* Mr. WATTS, Mr. ASTON.

3. Laboratory Work. Lines of experimental investigation in electrochemistry assigned by instructors, together with occasional conferences and written dissertations. Prerequisite, courses 1, 2; chemistry 31. *Throughout the year; three or five credits.* Mr. WATTS, Mr. KOWALKE, Mr. ASTON.
4. Short Course, dealing with principles of electrochemistry and their various industrial applications. *First semester; two lectures a week for first half of semester; one credit; one or two credits of laboratory work may also be taken.* Mr. BURGESS, Mr. WATTS.
6. Batteries. Construction, testing and operation of primary and storage cells. *Second semester; two or three credits.* 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. Prerequisite, chemistry 2, 11. *Repeated each semester; two credits.* Mr. KOWALKE.

12a. Short Laboratory Course for mechanical and electrical engineers. *Repeated each 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. Prerequisite, chemistry 2. *Second semester; one credit.* 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. Prerequisite, chemistry 2. *First semester; two credits.* Mr. BURGESS.

16. Applied Thermal Chemistry. Chemical and metallurgical processes from the standpoint of the heat energy involved. Prerequisite, chemistry 2, 11. *Throughout the year; two credits each semester.* 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. Prerequisite, general physics and chemistry. *First semester; two 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. *Repeated each 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 physics and chemistry. *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

PROFESSOR MACK; ASSOCIATE PROFESSOR THORKELSON; SUPERINTENDENT GODDARD.

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 cost, methods of determining the depreciation of machinery and industrial plants, inventories and valuations of existing properties. *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, designs 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 manufacturing 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. MACLIN, MR. KLINGER.

1. Elements of Drawing. Working drawings; Third angle projection. Lettering, Tracing, and Blue Printing. *Repeated each semester; three credits.* Mr. PHILLIPS, Mr. ORTH, Mr. WOOD, Mr. KLINGER.
2. Elements of Drawing. Working drawings; Lettering and Sketching. Isometric and Cabinet drawing. *Repeated each semester; three credits.* Prerequisite, drawing 1. Mr. PHILLIPS, Mr. ORTH, Mr. WOOD, Mr. KLINGER.

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; three credits.* Prerequisite, drawing 1, 2. Mr. MILLAR, Mr. MACLIN.
4. Freehand Lettering. A continuation of the lettering work in courses 1 and 2. *Second semester; one credit.* Mr. ORTH.
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 credits.* Mr. ORTH.

ELECTRICAL ENGINEERING

PROFESSOR BEEBE; ASSOCIATE PROFESSOR BENNETT; ASSISTANT PROFESSORS PRICE, SHUSTER, WATSON; MR. BELSKY, MR. BLAKE, MR. DISQUE, MR. HIGSON, MR. KARTAK, MR. LENT, MR. SANFORD, MR. SMITH.

1. Direct Current Machinery. A study of the laws of the electric and the magnetic circuit. The design, construction and operation of direct current machinery. Prerequisite, physics 101. *First semester, four credits; second semester, two credits.* Mr. WATSON.
2. Direct Current Laboratory. Laboratory tests of generators, motors and accessory apparatus. Prerequisite, Electrical engineering 1. *Begins second semester, two credits; first half of first semester, one credit.* Mr. PRICE and laboratory instructors.
3. Electrotechnics. A short course dealing with the laws of the electric and the magnetic circuit. Design, construction and operation of electro-magnetic machinery. Generation, transmission, distribution and application of electricity. Course intended primarily for mechanical engineers. Prerequisite, physics 101. *Throughout the year; three credits.* Mr. BEEBE, Mr. DISQUE.

4. Dynamo Design. In this course are taken up the complete calculation and design of a direct current dynamo. Prerequisite, electrical engineering 1. *First semester, second half; one credit.* Mr. WATSON.

5. Direct Current Laboratory. A short laboratory course, including tests of dynamos and accessory apparatus, intended primarily for civil, chemical, mining, and mechanical engineers. Should accompany electrical engineering 3 or 6. *Repeated each semester. Civil Engineers: Last half of first semester; first half of second semester; two credits.* Mr. PRICE and laboratory instructors.

6. Elements of Electrical Engineering. Similar to Electrical Engineering 3. Intended primarily for chemical, civil, and mining engineers. Prerequisite, physics 101. *Repeated each semester; two credits.* Mr. SANFORD, Mr. SHUSTER.

11. Alternating Currents. An introductory course dealing with the fundamental laws of alternating currents. *Second semester; three credits.* Mr. WATSON.

12. Alternating Current Laboratory. Laboratory tests and operation of alternating current generators, motors, transformers, meters and other appliances. Prerequisite, electrical engineering 11. *Throughout the year; two credits.* Mr. PRICE and laboratory instructors.

13. Alternating Current Machinery. A course dealing with the construction and operation of alternating current machinery and appliances. Prerequisite, electrical engineering 11. *Throughout the year; three credits.* Mr. BEEBE, Mr. DISQUE.

14. Advanced Alternating Current Laboratory. Primarily for graduates. Advanced laboratory tests with alternating current machinery. Prerequisite, electrical engineering 12. *First semester; two credits.* Mr. PRICE.

15. Alternating Current Laboratory. A short course primarily for mechanical engineers. Prerequisite, electrical engineering 5. *Second semester; two credits.* Mr. PRICE and laboratory instructors.

21. Electrical Applications. A combined course in electrical applications is offered according to the following arrangement:

FIRST SEMESTER

a. Illumination and Photometry. Mr. BENNETT, Mr. KARTAK, *three hours.*

b. Central Stations. Mr. SHUSTER, *three hours.*

f. Electrochemistry. Mr. WATTS, *two hours.*

e. Insulation. Mr. BENNETT, Mr. KARTAK, *two hours.*

SECOND SEMESTER

d. Electric Railways. Mr. SHUSTER, *three hours.*

c. Transmission and Distribution. Mr. BENNETT, *three hours.*

g. Telegraphy and Telephony. Mr. BENNETT, Mr. KARTAK, *two hours.*

h. Industrial Applications. Mr. SHUSTER, *two hours.*

This course aims to present the fundamental principles underlying each of the subjects named. Arrangements may be made for further work in any of the subdivisions, 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 subjects in which the advanced work is selected. May accompany Electrical Engineering 3 or 6. *Throughout the year; five credits.*

22. Electrical Testing. Laboratory course in general testing of telephones, telegraph and electrical signaling devices. Location of faults and grounds. Calibration of various types of instruments by engineering methods. Prerequisite, electrical engineering 3, 6, 11. *Second semester; one or two credits.* Mr. BENNETT, Mr. KARTAK.

24. Central Station Design. The design of electrical power plants for city public service, isolated plants, and electric railway service. Complete reports of calculations and drawings. Prerequisite, electrical engineering 21b. *Second semester; two credits.* Mr. SHUSTER.

25. Conference. Presentation and discussion of papers dealing with various phases of electrical engineering. Open to all seniors and graduates in Engineering. Once a month the class meets with the Madison section of the American Institute of Electrical Engineers. *First and second semesters; two credits.* Mr. BENNETT, Mr. DISQUE.

26. Thesis. A thesis is required of seniors and must be started at the beginning of the senior year under the direction of an instructor designated by the class adviser. The thesis may be research, a design, a test of apparatus, or library work. *Throughout the year; maximum—five credits.*

29. Inspection Trip. A trip to the large industrial centers is made at about Thanksgiving time, for the purpose of inspecting manufacturing plants and great engineering works in operation or under construction and is required of Seniors. Includes visits to Milwaukee and Chicago, and an alternate trip includes visits to Niagara Falls, Buffalo and Pittsburg

30. Illuminating Engineering. A course for graduates. Principles of artificial lighting. Production of light. Physics of light energy, photometric measurements. Characteristics of illuminants and design of lighting systems. *Throughout the year; three credits.* Mr. BENNETT.

31. Transmission and Distribution of Power. A graduate course dealing with the various problems of transmission and distribution circuits. *Throughout the year; three credits.* Mr. BENNETT.

32. Advanced Alternating Current Theory. A graduate course dealing with transient phenomena, traveling and stationary waves, electromagnetic radiation, and similar related matters. The analytical work is supplemented by experimental work where possible. *Throughout the year; three credits.* Mr. BENNETT.

33. Electric Railway Engineering. An advanced course dealing with the principles underlying electric railway problems. *Second semester; three credits.* Mr. SHUSTER.

ENGINEERING CONTRACTS AND SPECIFICATIONS

PROFESSOR PENCE; MR. BURRITT

1. Engineering Contracts and Specifications. The law of contracts as applied to engineering work, including the preparation of engineering specifications. *Second semester; two credits.* Mr. PENCE, Mr. BURRITT.

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, 2. *Repeated each semester; three credits.* Mr. DAVIS, Mr. WEIDNER.
2. Hydrometry. Principles and practice of hydraulic measurements and tests of hydraulic machinery, including study of instrumental errors, methods of analysis of data, and the determination of experimental coefficients and empirical formulas. Prerequisite, course 1. *First semester; two credits.* Mr. DAVIS.
3. Experimental Hydraulics. Laboratory investigation of the relation of experimental results to the theory of hydraulic machinery and of the flow of water under various conditions. The special field to be studied may be selected by student with approval of instructor. Prerequisite, courses 1, 2, (Courses 2 and 3 may be taken simultaneously). *Repeated each semester.* Mr. MEAD, Mr. DAVIS.
4. Water Power Engineering. The theory, investigation and development of water power. Prerequisite, course 1. *First semester; three credits.* Mr. MEAD, Mr. GARNER.
5. Hydraulic Machinery. The theory of hydraulic motors, pumps, etc., and their economic selection and installation. Prerequisite, course 1. *Second semester; two credits.* Mr. MEAD, Mr. GARNER.

10. Hydrology. Water in its physical, geological and meteorological relations as applied to water power, water supply, irrigation, drainage and sanitary work. *Second semester; two credits.* Mr. MEAD, Mr. GARNER.
11. Water Supply Engineering. Theory, development and improvement of water supplies for domestic, manufacturing, and fire service. Prerequisite, courses 1, 10. *First semester; three credits.* Mr. MEAD, Mr. GARNER.

12. Sewerage, Drainage, and Irrigation. Theory and practice of sanitary and agricultural drainage, sewage disposal and application of sewage and water to irrigation of land. Prerequisite, courses 1, 10. *Second semester; three credits.* Mr. MEAD, Mr. DAVIS, Mr. GARNER.

13. Hydraulic Design. First semester: Investigation of water supply for power, irrigation or municipal purposes. Second semester: Design of various features of hydraulic work or sanitary work. Four hours per week in drafting room. Prerequisite, first semester, courses 1, 10; second semester, courses 1, 10, 13, and 4, 11, or 12. *Two credits.* Mr. MEAD, Mr. GARNER.

14. Rivers and Canals. Theory and practice of improvements of internal waterways and harbors. Prerequisite, course 1. *Second semester; one credit.* Mr. MEAD, Mr. GARNER.

Thesis. (a) Students taking experimental work for a thesis subject should fulfill the requirements of course 3. (b) Students taking the design of hydraulic or sanitary works for a thesis subject should fulfill the requirements of course 13.

MACHINE DESIGN

PROFESSOR MACK; ASSISTANT PROFESSORS KEOWN, VOSSKUEHLER; MR. READ.

1. Mechanism. The relative motions of machine parts, including belting, toothed gears, cams, chains, ratchets and linkages. Prerequisite, mechanical drawing 1, 2. *Repeated each semester; 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. *Beginning first semester: first semester, three credits; second semester, two credits. Beginning second semester: second semester, three credits; first semester, two credits.* Mr. VOSSKUEHLER, Mr. READ.

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, 2. *Throughout the year; five credits each semester.* Mr. MACK, Mr. VOSSKUEHLER, Mr. READ.
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. Prerequisite, 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. Logging and Wood Working Machinery. Methods and machinery used in logging, wood working machinery and manufacturing processes, and the design of wood working plants. Prerequisite, first semester of machine design 2. *Second semester; two credits.* Mr. KEOWN.

MECHANICS

PROFESSOR MAURER; ASSISTANT PROFESSORS DOOLITTLE, WITHEY; MR. JOHNSON, MR. KOMMERS, MR. MILLER.

1. Statics. Prerequisite, physics 101, and student must be taking or have completed mathematics 105. *Repeated each semester, first ten weeks; three credits.*
2. Mechanics of Materials. Prerequisite, mechanics 1. *Repeated each semester, last eight weeks; two credits.*
3. Mechanics of Materials (continued). Prerequisite, mechanics 2. *Repeated each semester, first ten weeks; three credits.*

4. Dynamics. Prerequisite, mechanics 1. *Repeated each semester, last eight weeks; two credits.*

51, 52, 53, 54. Materials of Construction. Principally laboratory work; assigned readings and reports; also preparation and manufacture of materials. Students must be taking, or have completed, Mechanics 3.

51, for civil engineering students.

52, continuation of 51.

53, for all engineering students, excepting civil.

54, for mechanical engineering students; prerequisite, 53.

51, 52, 53 *either semester; two credits.* 54 *second semester; one credit.*

6. Advanced Mechanics of Materials. Inertia circle and ellipse; kern; beam of unsymmetrical section; curved beams; flat plates; thick cylinders, etc. Prerequisite, mechanics 2, 3. *Second semester; two credits.* Mr. MAURER.

7. Advanced Technical Mechanics. Elaboration of course 4 with applications especially to harmonic motion, vibrations and balancing of machines, whirling shafts and rotating discs; dynamical stability, as of flying machines. Prerequisite, mechanics 1, 4. *First semester; two credits.* Mr. MAURER.

8. Materials of Construction. Laboratory research on the various materials. Work in concrete is given only in one semester of each year. Prerequisite, mechanics 5. *Either semester.* Mr. WITHEY.

9. Graphics. Development of principles of graphic solutions of certain problems in statics and of certain equations relating to beams and framed structures. Inertia curves, deflection curves, combined stress figures, N-polygons, etc. Prerequisite, mechanics 1, 2, 3. *Second semester; two credits.* Mr. DOOLITTLE.

10. Thesis. The materials laboratory is well equipped to furnish thesis work; eight to ten researches on the various materials of construction can be directed each year. For timber tests the equipment of the National Forest Products Laboratory, located on the campus, is also available. Prerequisite, mechanics 5.

MINING AND METALLURGY

PROFESSOR HOLDEN; ASSISTANT PROFESSOR HAVARD.

1. Excavation and Quarrying. Earth and rock excavation, dredging, explosives, drilling and blasting, quarrying, plants, methods, and costs. Prerequisite, physics 102. *First semester; three credits.* Mr. HOLDEN.
2. Tunneling, Boring and Shaft Sinking. Methods of driving, ventilating and maintaining railway and other tunnels. Methods of deep drilling and core boring. Shaft sinking and maintenance in easy and difficult ground. Prerequisite, mining 1. *Second semester; three credits.* Mr. HOLDEN.
3. Prospecting and Mine Development. Mining geology as affecting exploration. Methods of prospecting, exploration and development. Three hours through October and November. Prerequisite, mining 2; geology 1. *First semester; one credit.* Mr. HOLDEN.
4. Exploitation of Mines. Methods of mining ore bodies, placers, coal and other minerals. Three hours, December, January and February. Prerequisite, mining 3. *First semester; two credits.* Mr. HOLDEN.
5. Mine Engineering. The design, installation and operation of drainage, ventilating, lighting, haulage and hoisting systems in mines; surface plant; accidents and their prevention; sampling, valuation and reports. Prerequisite, mining 4. *Throughout the year; two credits each semester.* Mr. HOLDEN.
7. Ore dressing and coal washing. Principles and practice of ore dressing. Design of concentrating plants, coal breakers and washers. Lectures and laboratory practice. Prerequisite, geology 6; mining 20. *Second semester; three credits.* Mr. HOLDEN.
8. Gold and Silver Mining and Cyanidation. Stamp-milling, fine grinding and amalgamation processes. Cyanidation, methods of dissolving and recovering the precious metals.

Prerequisite, mining 22. *Second semester; one or two credits.* Mr. HOLDEN.

11. Thesis. The development and equipment of a mine, including the design and working drawings of principal structures and machines, with a detailed report. *Throughout the year; four or more credits.*

20. Assaying. Lectures and laboratory practice in the assaying of ores of gold, silver and lead, of matte, bullion, slag and metallurgical by-products. One lecture and four to eight hours laboratory every week. Prerequisite, chemistry 11. *Repeated each semester; two or three credits.* Mr. HAVARD.

22. General Metallurgy. The principles of metallurgy including the applications of chemistry in and the mechanical equipment of general metallurgical practice. Three hours of lectures weekly. Prerequisite, chemistry 11. *First semester; three credits.* Mr. HAVARD.

23. The Metallurgy of the Base Metals. Three lectures weekly. Prerequisite, mining 22. *Second semester; three credits.* Mr. HAVARD.

24. The Metallurgy of Iron and Steel. Two lectures weekly. Prerequisite, mining 22. *First semester; two credits.* Mr. HAVARD.

RAILWAY ENGINEERING

PROFESSOR PENCE; MR. CURTIS, MR. BURRITT, MR. JESSUP.

1. Railway Curves. An introductory course in the computation and field location of simple, compound and spiral curves. Prerequisite, mathematics 102; topographic engineering 1, 2. *Repeated each 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. Prerequisite, course 1. *First semester; two credits.* Mr. PENCE, Mr. BURRITT.

2b. Practice in Field and Office Work. To be taken only in connection with Course 2a. *First semester; three credits.* Mr. CURTIS, Mr. BURRITT, Mr. JESSUP.

3. Railway Maintenance. A course in railway maintenance. Prerequisite, courses 1, 2a, 2b. *Second semester; two credits.* Mr. PENCE, Mr. BURRITT.

4. Railway Engineering. A brief course in railway location and construction. Primarily for students in Electrical and Mining Engineering who have previously had practice in surveying. Prerequisite, mathematics 102 (trigonometry). *First semester; two credits.* Mr. CURTIS.

5. Railway Economics. The economics of railway location and improvements; dealing with train resistance, momentum, grades, tonnage ratings and related matters. *Repeated each semester; two credits.* Prerequisite, courses 1, 2a, 2b, 3. Mr. PENCE, Mr. CURTIS.

6. Railway Design. A course in the design of track details, including frogs, switches, yard layouts and minor railway structures, with field work in yard resurveys, staking out structures, etc. In connection with Course 3. Prerequisite, courses 1, 2a, 2b. *Second semester; two credits.* Mr. CURTIS, Mr. JESSUP.

7. Advanced Railway Design. The design of railway yards and terminals, shops, buildings, etc. Prerequisite, course 6. *Repeated each semester; two credits.* Mr. PENCE.

8. Signaling and Interlocking. A study of railway signaling and train control, including field inspections of interlocking plants and problems in design. Prerequisite, courses 1, 2a, 2b, 3. *Second semester; one credit.* Mr. CURTIS.

10. Masonry Construction. Theory governing the design of masonry structures and foundations. Prerequisite, mechanics 1, 2. *Second semester; two credits.* Mr. CURTIS.

11. Substructures. Ordinary and deep foundation work; lectures and problems. Prerequisite, course 10. *Second semester; one credit.* Mr. PENCE.

12. Estimates and Valuations. The methods of valuing railway and public utilities properties. In connection with the work of the engineering staff of the Wisconsin Railroad and Tax Commissions. For senior and graduate students.

Repeated each semester; two or more credits. Mr. PENCE, Mr. BURRITT.

Thesis. (a) Location projects: Steam and electric lines, grade revision problems, etc. (b) Design problems: Subways, terminals, etc. (c) State Commission work: Valuation of railway or public utilities properties, statistical studies, etc. (d) Experimental work: Train resistance, rail joints, etc. (e) Investigations and Library studies: Rail sections, tonnage rating studies, etc.

ROADS AND PAVEMENTS

ASSOCIATE PROFESSOR SMITH.

1. Roads and Pavements. Location, specification and construction of highways and city pavements. Text, Baker's "Roads and Pavements." *First semester; two credits.* Mr. SMITH.
2. Roads and Pavements. A library study is made of the most practical problems of road construction. Short trips are made to nearby cities for field examinations. Advanced course in roads and pavements. Prerequisite, Course 1. *Second semester; two credits.* Mr. SMITH.

SHOP WORK

SUPERINTENDENT GODDARD; MR. DABNEY, MR. DORRANS, MR. GABRIEL, MR. PAYTON, MR. SLADKY, MR. ZURIAN.

1. Elementary Pattern Making. Bench and lathe work in wood. Molding and core making. *First semester; one credit.* Mr. DORRANS.
2. Bench Work in Iron. Instruction in the use of chisel, file and scraper. *Second semester; one-half credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
3. Elementary Forge Work. Forging, welding, tempering and brazing. *Second semester; one-half credit.* Mr. GABRIEL, Mr. ZURIAN.

4. Lathe Work in Metals. Turning, boring and thread cutting. *Repeated each semester; one credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
5. Planing and Milling. Surfacing, slotting and gear cutting. *Repeated each semester; one credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
6. Tool Making. Making and tempering taps, reamers, counterbars, turret lathe tools, etc. Required in Electrical Engineering Course and vacation shop work. Prerequisite, courses 4, 5. *Repeated each semester; two credits.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
7. General Shop Work. Building machines, gas engines, etc. Turret lathe practice. Prerequisite, courses 4, 5. *Repeated each semester; four credits.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
8. Heat Treatment of Steel. Annealing, hardening, tempering, case hardening. Heat treatment of open hearth and crucible tool steels, steel castings and high speed steel with investigation of effects upon the physical properties of the material. Prerequisite, course 3. *First semester; one credit.* Mr. GODDARD, Mr. GABRIEL.
9. Advanced Pattern Making and Foundry Practice. Building up of large patterns and core boxes, sweeping and molding in sand and loam. Care of cupola. Prerequisite, course 1. *Second semester; one credit.* Mr. DORRANS, Mr. PAYTON.
10. Industrial Practice for Mechanical Engineering Course. Not less than seven weeks of work, performed outside of the University, preferably under a well developed system of methods and discipline. Where necessary, equivalent credit may be secured by substituting four weeks vacation shop work in University Shops. *Four credits.*
11. Industrial Practice for Electrical Engineering Course. Not less than four weeks of work, performed outside of the University, preferably under a well developed system of methods and discipline. Where necessary, equivalent credit may be obtained by substituting two weeks vacation shop work in University Shops. *Two credits.*

Required in Mechanical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Total, 16 credits.

Required in Electrical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 11. Total, 8 credits.

STEAM AND GAS ENGINEERING

PROFESSOR THOMAS; ASSOCIATE PROFESSOR THORKELSON; ASSISTANT PROFESSOR CHRISTIE; MR. BLACK, MR. ROWSE, MR. BERGGREN, MR. BERRY.

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. Prerequisite, physics 101, 102; mathematics 104, 105. *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, boilers, gas engines, producers, etc. Problems are assigned and discussed, and solved in the drawing room. Prerequisite, courses 1, 2. *Throughout the year; two credits each semester.* Mr. THOMAS.
6. Special Course in Thermodynamics. A special course in the theory and principles underlying the construction, design and operation of steam engines, gas engines, and boilers of various types. Prerequisite, physics 101, 102; Mathematics 104, 105. *Throughout the year; three credits each semester.* Mr. BERGGREN.
7. Course in Steam Engineering for Civil Engineers. An informational course covering the more important types of engines and boilers. Prerequisite, physics 101, 102; mathematics 104, 105. *First semester; two credits.* Mr. BLACK, Mr. ROWSE.
8. Heating and Ventilation. An elective study open to all students who have completed Courses 1, 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 designs and specifications for such systems. *First semester; three credits.* Mr. THORKELSON.

9. Internal Combustion Engines. An elective study open to all students who have completed Courses 1, 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 Appliances. 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; one credit.* Mr. CHRISTIE.

12. Steam Turbines. An elective study open to students who have completed Courses 1, 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 or 7. The principles and methods of producing low temperatures artificially are studied together with the construction, operation and application of refrigerating machinery. *Second semester; one credit.* Mr. BLACK.

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.*

22. Engineering testing, including the determination of the efficiencies, losses and characteristics of simple heat engines. Gas and fuel analysis (Chem. Tech. 2a). *Second semester; one credit.*

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.*

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.*
25. Engineering Testing, including calibration of instruments, adjustment and testing of simple heat engines. *Second semester; two credits.*
26. Continuation of Course 25 dealing with adjustment, operation and efficiency tests of heat engines of various classes, and including boiler and power plant tests. *First semester; one credit.*
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. *Two credits.*
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 and detailing of simple roof trusses in wood and steel. Prerequisite, mechanics 1, 2. *First semester; two credits.* MR. PARKER, MR. GLAETTLI.
2. Bridge Stresses. Simple Structures. Analysis of simple bridge and roof trusses by algebraic and graphical methods. Prerequisite, mechanics 1, 2. *Second semester; four credits.* MR. KINNE, MR. PARKER.
3. Bridge Design. Roof Trusses and Plate Girders. Design, detail drawings, and estimates of cost and weight of roof trusses and railway plate girder bridges. Prerequisite,

structural engineering 1, 2. *Second semester; three credits.* Mr. PARKER, Mr. GLAETTLI.

4. Bridge Design. Railway Bridge Trusses. Design, stress sheet, general drawing, and estimates of cost and weight of riveted and pin-connected railway bridge trusses. Prerequisite, structural engineering 1, 2, 3. *First semester; four credits.* Mr. KINNE, Mr. PARKER.

5. Reinforced Concrete. Principles of reinforced concrete construction; analysis and problems in design. Elective for graduates. Prerequisite, mechanics 1, 2. *First semester; two credits.* Mr. TURNEAURE, Mr. PARKER.

6. Arches, Dams and Retaining Walls. Design and analysis of arches, dams and similar structures. Elective for graduates. Prerequisite, structural engineering 5. *First semester; two credits.* Mr. PARKER, Mr. GLAETTLI.

7. Bridge Stresses. Statically Indeterminate Structures. Analysis of swing, cantilever, arch and suspension bridges. Elective for Senior Civil Engineers and graduates in Civil Engineering. Prerequisite, structural engineering 2. *First semester; two credits.* Mr. KINNE.

8. Bridge Stresses. Advanced Theory and Experimental Work. Secondary Stresses in framed structures. Tests on bridges under moving loads. Elective for Senior Civil Engineers and graduates in Civil Engineering. Prerequisite, structural engineering 2, 7. *Second semester; two credits.* Mr. TURNEAURE.

9. Bridge Design. Swing Bridges. Design of truss, turntable and machinery for railway swing bridges. Elective for senior Civil Engineers and graduates in Civil Engineering. Prerequisite, structural engineering 2, 3, 4, 7. *Second semester; two credits.* Mr. KINNE.

10. Structural Design. A short general course in the designing of roofs and buildings. For students in Mechanical, Electrical, and Mining Engineering. Prerequisite, mechanics 1, 2. *Second semester; three credits.* Mr. KINNE.

11. Reinforced Concrete. Analysis and problems in design. A continuation of structural engineering 5. One two-hour computing period. Prerequisite, courses 5 and 6. *Second semester; one credit.* Mr. PARKER.

TOPOGRAPHIC AND GEODETIC ENGINEERING

ASSOCIATE PROFESSOR SMITH; MR. OWEN, MR. CUTLER.

1. Topographic Drawing. The work includes the platting of the field notes taken in T. E. 3 and T. E. 4 and some practice in pen and water color topography and contouring. Prerequisite, courses 3, 4. *Throughout the year; one credit each semester.* Mr. SMITH, Mr. OWEN, Mr. CUTLER.
2. Elementary Surveying. Chaining, compass and level work. *Throughout the year; one credit each semester.* Mr. OWEN, Mr. CUTLER.
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. Prerequisite, course 2. *First semester; four credits.* Mr. SMITH, Mr. OWEN, Mr. CUTLER.
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. Prerequisite, courses 2, 3. *Second semester; three credits.* Mr. SMITH, Mr. OWEN.
5. Geodesy. A general treatment of the adjustment and use of theodolites and precise levels in Geodetic and Astronomic Surveys. Computations for the adjustment of a quadrilateral, latitude and longitude, etc. are based on the field work in Course 6. Prerequisite, courses 3, 4. *Second semester; two or three credits.* Mr. SMITH.
6. Summer School of Surveying at Devils Lake, Wis. Field work for illustrating Course 5. Each year a portion of the region in the vicinity of Devils Lake, Wisconsin, will be covered by an accurate triangulation, and also by topographic and hydrographic surveys. Survey begins on Thursday of examination week and continues for four weeks. Prerequisite, courses 3, 4. Mr. SMITH, Mr. CUTLER, Mr. PARKER.

7. Advanced Geodesy. Lectures, assigned readings and field work. Discussion of size and figure of the earth. Prerequisite, course 5. *First semester; two credits.* Mr. SMITH.
8. Short Course. 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.* Mr. OWEN, Mr. CUTLER.
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.* Mr. CUTLER.
10. City Planning. Topographic and Cadastral, lectures, assigned readings on organization of a City Engineer's office, City Plan, Law of Resurveys, etc. *Second semester; two credits.* Mr. SMITH.

WOOD TECHNOLOGY

MR. BRISTOL, MR. CLINE, DR. HAWLEY, MR. TIEMAN, MR. WEISS.

1. Properties of Wood. The elementary structure of wood as differentiated according to species. Physical properties with relation to the uses of wood in the arts and industries. Methods of testing and conditioning. Lectures and demonstrations. *First semester (first half); twice a week.*
2. Constituents and Fibres of Wood. A course in the chemical constituents in lignoceric materials and fibers of wood with reference to the arts and industrial uses. *First semester (second half); twice a week.*
3. Wood Distillation. Principles, processes, and products of hardwood and softwood distillation with especial regard to the utilization of waste in the lumber industry. *Second semester (first half); twice a week.*
4. Wood Preservation. The structure and properties of wood as regards resistance to destructive agencies. Conditions of deterioration. Preservative processes, including surface applications and impregnation with antiseptic materials.

Theory and effect of pressure in treatment. Commercial plants. Lectures and demonstrations. *Second semester (second half); twice a week.*

For the description of a course in Logging and Wood Working Machinery, see Machine Design 7, page 347.

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 school occupied rooms in the capitol building. It now occupies a building especially erected for its use in 1893.

OBJECT 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 unclassified 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, unclassified 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 from other universities or colleges, 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 with a weighted average of fair (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.

Unclassified students who fail to attain a weighted average of good, will not be considered.

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.

COURSE 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. RICHARDS.

CRIMINAL LAW AND PROCEDURE. Beale's Cases on Criminal Law. *Four credits.* Mr. SMITH.

EQUITY I. Ames' Cases on Equity. *Second semester; three credits.* Mr. SMITH.

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.) *Five credits.* Mr. MOORE.

TORTS. Ames' and Smith's Cases on Torts. *Five credits.* Mr. GILMORE.

SECOND YEAR

ADMINISTRATIVE LAW I. Selected Cases on Administrative Law. *Second semester; three credits.* Mr. ———. (Omitted 1910–11.)

ADMINISTRATIVE LAW II. Selected Cases and Smith's Cases on Municipal Corporations. *Two credits.* Mr. HALL.

AGENCY. Wambaugh's Cases on Agency. *First semester; three credits.* Mr. GILMORE.

BANKRUPTCY. Williston's Cases on Bankruptcy. *First semester; two credits.* Mr. MOORE. (Omitted 1910–11.)

BILLS OF EXCHANGE AND PROMISSORY NOTES. Smith and Moore's Cases on Bills and Notes. *Four credits.* Mr. MOORE.

COMMON LAW PLEADING. Ames' Cases on Pleading. *First semester; two credits.* Mr. COOK.

DAMAGES. Beale's Cases on Damages. *Second semester; two credits.* Mr. RICHARDS. (Omitted 1910–11.)

EQUITY II. Ames' Cases on Equity. *First semester; three credits.* Mr. RUNDELL.

EQUITY III. Ames' Cases on Equity. *Two credits.* Mr. RUNDELL. (Omitted 1910–11.)

EQUITY PLEADING. Selected Cases. *Second semester; one credit.* (Omitted 1910–11.)

EVIDENCE I. Jones on Evidence and selected cases. *Two credits.* Mr. JONES.

INSURANCE. Wambaugh's Cases on Insurance. *First semester; two credits.* Mr. RUNDELL.

INTERNATIONAL LAW. Scott's Cases. *Four credits.* Mr. REINSCH.

PROPERTY II. Gray's Cases on Property. Vols. III, IV (2nd ed.) *Four credits.* Mr. RUNDELL.

PUBLIC SERVICE COMPANIES. McClain's Cases on Carriers, and selected cases. *Second semester; three credits.* Mr. GILMORE.

QUASI-CONTRACTS. Keener's Cases on Quasi-Contracts. *First semester; three credits.* Mr. SMITH.

SALES. Williston's Cases on Sales. *Second semester; three credits.* Mr. GILMORE.

TRUSTS. Ames' Cases on Trusts (2nd ed.) *Four credits.* Mr. RICHARDS.

THIRD YEAR

CODE PLEADING. Hinton's Cases on Code Pleading. *Second semester; two credits.* Mr. BAESEL.

CODE PRACTICE. Wisconsin Statutes and Decisions. *Four credits.* Mr. SANBORN.

CONFLICT OF LAWS. Beale's Cases on Conflict of Laws. *Second semester; three credits.* Mr. SMITH.

CONSTITUTIONAL LAW. Thayer's Cases on Constitutional Law. *Six credits.* Mr. SMITH.

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. *Second semester; two credits.* (Omitted 1910–11.) Mr. RUNDELL.

PARTNERSHIP. Gilmore's Cases on Partnership. *First semester; two credits.* Mr. GILMORE.

PROPERTY III. Gray's Cases on Property, Vols. V, VI. *Four credits.* Mr. MOORE.

SURETYSHIP. Ames' Cases on Suretyship. *Second semester; two credits.* 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 for 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.

EXAMINATIONS

Examinations are held at the close of each semester, and the summer session. Examinations will also be held during the opening week of the first semester for the benefit of students having conditions, provided a written application is made to the dean, on or before Sept. 15th.

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 18,000 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 cases.

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.

LAW CLUBS

A number of law clubs are maintained by the students, in which questions of law are argued and decided.

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.

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.

Time of Opening

The session for 1911 begins June 26th and continues until September 1st.

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 eight 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, Experimental Breeding, Agricultural Bacteriology, Agricultural Economics, Agricultural Journalism 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 stands the new Dairy Laboratory, 47 by 82 feet in size, which provides additional laboratories and lecture rooms for instruction in butter and cheese making. A large lecture room and a locker room with steel lockers are provided. 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, which will move into its new building, 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, 48 by 128 feet, in process of erection, will cost about $60,000 and 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. The four adjoining greenhouses, 100 by 20 feet, and potting houses, 20 by 68 feet, are completed and in use. 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 include an extensive power laboratory in which are installed modern gasoline and steam engines, electric dynamoes 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 and Experimental 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 such buildings 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.

The Poultry plant includes a general office and headquarters building with incubator rooms, feed rooms and sales room, a house for laying flocks, three large breeding pen houses containing quarters for twelve breeding flocks and a dozen portable colony houses. Several hundred fowls, representing over 20 breeds are kept for instructional and research purposes. Several thousand chicks are hatched annually.

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, debate, 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. A Country Life Club discusses the social phases of rural life. A chapter of the national honorary agricultural fraternity Alpha Zeta is maintained by faculty and student members.

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 department 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 comprenensive 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 One Week's School in Home Economics. A series of class-room and laboratory exercises in cookery, sewing, art and design, and textiles for women who desire more thorough instruction than can be secured in the Women's Course. For detailed program address Prof. Abby L. Marlatt.

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 Young Peoples' Course in Agriculture is a week's course of lectures, demonstrations and exercises in grain growing and judging, selection and testing of seeds and other subjects relat-

ing to farm life which are interesting to farm boys and girls. Those who have won scholarships in grain growing contests conducted by local fair authorities and the Agronomy department pursue this course. 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 avail-

able to students who enter this college in 1911. 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 agricultural 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, Section 1 or Agricultural Engineering 1, first half semester, Section 1	2½
Animal Husbandry 1, last half semester	2½
Military Drill	1
Physical Education 1	1

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, Section 2 or Agronomy 1, last half semester, Section 2	2½
Military Drill	1
Physical Education 1	1

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	1
Physical Education 3	1

SECOND SEMESTER	Credits.
Agricultural Bacteriology 1	4
Agricultural Chemistry 1 and 2	5
Soils 1	5
Zoology 3	3
Military Drill	1
Physical Education 3	1

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.
Mathematics 201 (Engineering)	3
Botany 6 (L. & S.)	4
Agricultural Economics 1	2
Electives (3 required in the College of Agriculture)	8

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, or a substitute approved by the adviser, must represent some phase of the student's work in his major study, four credits being given. The instructor in charge of the major subject will act as the student's advisor and will select his minor subject. 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 physical education. Before graduation, the students must also have had at least six months' practical farm experience. Sixteen to eighteen credits exclusive of drill and physical education 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, Section 1 or Agricultural Engineering 1, first half semester, Section 1	2½
Animal Husbandry 1, last half semester	2½
Electives in College of Agriculture	3
Military Drill	1
Physical Education 1	1

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, Section 2 or Agronomy 1, last half semester, Section 2	2½
Electives in College of Agriculture	3
Military Drill	1
Physical Education 1	1

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	1
Physical Education 3	1

SECOND SEMESTER	Credits.
Agricultural Chemistry 1	3
Agricultural Bacteriology 1	2
Soils 1	3
Soils 2	3
Electives (3 required in College of Agriculture)	5
Military Drill	1
Physical Education 3	1

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 BACTERIOLOGY

ASSOCIATE PROFESSOR HASTINGS; PROFESSOR RAVENEL; MR. HOFFMANN, MR. WRIGHT.

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. Agricultural Bacteriology. A general discussion of the relation of micro-organisms to the soil, to the dairy, to animal diseases, to food preservation and to the sanitation of the farm. Prerequisite, course I, general bacteriology. *Four credits; second semester; two lectures; two laboratory periods.* Mr. HASTINGS, Mr. RAVENEL, Mr. HOFFMANN.

19. Thesis. A study of a definite problem in dairy or soil bacteriology or in animal diseases. Prerequisite, course 1, and either course 20, 21, or 2 in general bacteriology. *Throughout the year; two credits.* Mr. HASTINGS, Mr. RAVENEL, Mr. HOFFMANN.

For Undergraduates and Graduates

20. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter and cheese. Prerequisite, course 1. *First semester; one lecture; two laboratory periods; three credits.* Mr. HASTINGS, Mr. WRIGHT.

21. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, course 1. *First semester; one lecture, two laboratory periods; three credits.* Mr. HOFFMANN.

Primarily for Graduates

30. Research work in Agricultural Bacteriology. A detailed study of a definite problem in the field of agricultural bacteriology. Prerequisite, courses 20 or 21 or 2 in general bacteriology. *Conferences and laboratory work; three or five credits.* Mr. HASTINGS, Mr. RAVENEL, Mr. HOFFMANN

AGRICULTURAL CHEMISTRY

PROFESSORS BABCOCK, HART, WOLL; ASSOCIATE PROFESSOR MCCOLLUM; ASSISTANT PROFESSOR TOTTINGHAM; MR. STEENBOCK, MR. PETERSON, MR. JURRJENS.

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 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, Biology and Organic Chemistry. Physiology is a desired prerequisite. 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. *Second semester; lectures; three credits.* Mr. HART.
2. Agricultural Analysis. Analytical chemistry applied to agricultural materials, including quantitative analysis of fertilizers, manures, soils, feeding stuffs, dairy products and insecticides. *Second semester; two laboratory periods; two credits.* Mr. TOTTINGHAM, Mr. PETERSON.
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. *Second semester; two lectures; two three-hour laboratory periods; two or five credits.* Mr. TOTTINGHAM.

4. Dairy Chemistry. The study of the chemistry of milk and its products, including the detection and quantitative estimation of adulterants. *First semester; two lectures; two three-hour laboratory periods; two or five credits.* Mr. HART, 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. *First semester; two lectures; laboratory work by arrangement; two or five credits.* Mr. MCCOLLUM, 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. *First semester; two lectures; three laboratory periods; five credits.* Mr. HART, 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, Mr. MCCOLLUM, Mr. TOTTINGHAM.

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. *Either semester; conferences, assigned reading, and laboratory work by arrangement; five credits.* Mr. HART, Mr. MCCOLLUM.

21. Detection of Adulteration of Concentrated Feeding Stuffs. Includes chemical and microscopical examinations. *Second semester; two laboratory periods; two credits.* Mr. WOLL.

22. Sugar Beet Analysis. A course intended for chemists in sugar factories. *First semester; two laboratory periods; two credits.* Mr. WOLL, Mr. JURRJENS.

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; conferences, assigned reading, and laboratory work by arrangement; five laboratory periods; five credits.* Mr. BABCOCK, Mr. HART, Mr. TOTTINGHAM.

31. Animal Nutrition. Composition and digestibility of foods and their influence upon growth, production of milk, etc. *Throughout the year; conferences, assigned reading, with laboratory and barn work by arrangement; laboratory by arrangement; five credits.* Mr. HART, Mr. WOLL, 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; conferences and laboratory work by arrangement; five credits.* Mr. BABCOCK, 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. HART, Mr. McCOLLUM.

AGRICULTURAL ECONOMICS

PROFESSORS TAYLOR, OTIS, 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.

Students who wish to prepare themselves for practical work as farm managers and as citizens interested in state activities affecting agriculture will find courses 1, 8 and 10 best adapted to their needs.

Students who wish to prepare for positions as teachers and research workers in the field of agricultural economics will

elect courses 27 and 28. 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. *First semester; three credits; second semester; two credits.* Mr. TAYLOR.

8. Farm Accounting. A course designed to give the student such training in inventories, bookkeeping and accounting as will enable him to determine the financial results of his farm operations. *Second semester; two credits.* 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. *Second semester; lectures and field work; three credits.* Mr. OTIS.

19. Thesis Work. *Throughout the year; two credits.* Mr. TAYLOR, Mr. OTIS, 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. *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.

AGRICULTURAL ENGINEERING

ASSISTANT PROFESSOR OCOCK, MR. WHITE.

The courses in Agricultural Engineering are planned to meet the needs (1) of students desiring a general knowledge of the use of farm machinery, planning farm buildings, and concrete construction; (2) of students intending to become agricultural implement experts; (3) of students preparing for instructional or investigational work.

Primarily for Undergraduates

1. General Agricultural Engineering. A general course in farm power, tillage and harvesting machinery; elements of drafting and planning of farm buildings; principles and practice of farm surveying. *First half of first semester and second half of second semester; lectures and laboratory work; two and a half credits.* Mr. OCOCK, Mr. WHITE.
2. Rural Architecture. The location of farm buildings with reference to general convenience and sanitation; construction of general farm buildings, etc.; heating and ventilation; platting home grounds, paddocks and fields. Prerequisite, course 1 or its equivalent. *First semester; lectures and laboratory practice; two three-hour periods; three credits.* Mr. OCOCK, Mr. WHITE.
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. It is desired that this course be preceded by courses 1 and 7 in Mechanical Engineering. *First semester; lecture and laboratory practice; three two-hour periods; three credits.* Mr. OCOCK, Mr. WHITE.
4. Cement Work. Instruction in concrete for farm purposes. Prerequisite, course 1 or its equivalent. *Second semester; lectures and laboratory practice; two two-hour periods; two credits.* Mr. OCOCK, Mr. WHITE.
5. Farm Machinery. Tools and machinery for preparing the seed bed, sowing and planting, tilling and harvesting crops.

Prerequisite, course 1. *Second semester; lectures and laboratory practice; three two-hour periods; three credits.* Mr. WHITE.

6. Farm Machinery. For students preparing themselves for field experts. Prerequisite, courses 3 and 5 and Mechanical Engineering 1 or their equivalents. *Second semester; lectures and laboratory practice; three credits.* Mr. WHITE.
7. Road Building. The construction of earth, macadam, and stone roads; practical work with the King road drag. Field work in road drainage, leveling, etc. Prerequisite, course 1. *Second semester; lectures and laboratory practice; two credits.* Mr. OCOCK, Mr. WHITE.
19. Thesis and Research Work. This course varies in the subject matter, according to the lines in which the thesis is written. *Throughout the year; two credits.* Mr. OCOCK.

For Undergraduates and Graduates

20. Research Work. Special agricultural problems will be assigned to advanced students who have had the necessary previous training. Prerequisites, courses 2, 3, 4, 5, 6. *First semester; credit by arrangement.* 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. *Second semester; hours to be arranged; two credits.* 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 Wisconsin Country Magazine, 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. *First semester; lectures and assigned writing; two credits;* Mr. MARQUIS.
2. Seminar in Practical Editing. A conference on editing and publishing, circulation, and advertising with special reference to The Wisconsin Country Magazine. *Throughout the year; bi-weekly meetings, open to staff of The Wisconsin Country Magazine and students taking Agricultural Journalism* 1. Mr. MARQUIS.
3. Methods of Farm Advertising. The principles and methods of advertising farm products, including livestock, seeds, land, etc., planning campaigns, writing advertisements, etc. Lectures and assignments. *Second semester; one credit.* MR. MARQUIS.

AGRONOMY

PROFESSOR MOORE; ASSISTANT PROFESSORS NORGORD, STONE; MR. LEITH, MR. GRABER.

The Courses in Agronomy are designed to give a thorough understanding of the general and scientific principles which underlie the production of farm crops; to fit students to classify, judge and grade cereals and forage plants commercially and in competitive displays; to inspect farm seeds and identify noxious weeds and to prepare students for instructional and research work in Agronomy.

Primarily for Undergraduates

1. Cereal Judging. Includes the judging and grading, and a study of the types, botanical relations, and structure of corn and small grains. *First half of first semester and second half of second semester; laboratory work; two and a half credits.* Mr. STONE, Mr. LEITH, Mr. GRABER.
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. *Second semester; lectures and laboratory work; three credits.* Mr. MOORE, Mr. GRABER.
3. Root, Soiling and Silage Crops. A study of beets, turnips, rutabagas, mangels, etc., for various uses and the growing of forage crops for soiling and silage purposes. *First semester; lectures; two credits.* Mr. NORGORD.
4. Cereals. A detailed study of the uses, distribution, culture, composition, and improvement of grain crops. Prerequisite, course 1. *Second semester; lectures; three credits.* Mr. STONE, Mr. LEITH.

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. *Throughout the year; four credits.* Mr. MOORE, Mr. NORGORD, Mr. STONE.

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. *First semester; lectures, assigned readings and laboratory work; three credits.* Mr. STONE.

21. Advanced Cereal Judging. A continuation of the practical work in judging, grading and type study of cereals as outlined in Course 1. Prerequisite, course 1. *Second semester; laboratory work; two credits.* Mr. STONE, Mr. LEITH.

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. Prerequisite, courses 1, 2 and 4. *First semester; conferences, assigned readings and laboratory work; three credits.* Mr. NORGORD.

ANIMAL HUSBANDRY

EMERITUS PROFESSOR HENRY.

PROFESSORS HUMPHREY, ALEXANDER; ASSISTANT PROFESSORS FULLER, HADLEY; MR. KLEINHEINZ, MR. TORMEY, MR. OOSTERHUIS, 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. *Last half of first semester; five laboratory periods; two and one-half credits.* Mr. TORMEY, Mr. OOSTERHUIS.

2. Live Stock Practice. Approved methods in the care and management of farm animals. *First half of first semester; lectures M., W., F., 8; two laboratory periods; two and one-*

half credits. Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, Mr. KLEINHEINZ, and assistants.

19. Thesis work. *Two credits.* Mr. ALEXANDER, Mr. HADLEY, Mr. HUMPHREY, Mr. FULLER, Mr. TORMEY.

For Undergraduates and Graduates

20. Breeds of Live Stock. A study of the origin and characteristics of the breeds of live stock. *Second semester; three credits; lectures, M., W., F.* 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. *First semester; three lectures; three credits.* Mr. HADLEY.

22. Advanced Veterinary Anatomy. A systematic dissection of the horse with consideration of the principal differential features of the ox, sheep, and pig. In addition the anatomical surface markings of the living animals will be studied. (This course is designed for the needs of students who desire further training along the lines of Stock Judging, Meat Production and Animal Nutrition.) Prerequisite, Animal Husbandry 21. *Second semester; recitation and laboratory; four credits.* Mr. HADLEY.

23. Advanced Live Stock Judging. Practical applications of the principles and standards governing the judging of live stock. Prerequisite, course 1. *First semester; five laboratory periods; five credits.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, Mr. KLEINHEINZ, Mr. TORMEY.

24. The Art of Breeding. A study of the principles and approved methods relating to the breeding of live stock. Prerequisite, courses 1, 20. *Second semester; lectures; two credits.* Mr. HUMPHREY.

25. Veterinary Science. A lecture and text-book course on hygiene, and diseases of animals, with illustrations and practical demonstrations. *Second semester; two lectures; two credits.* Mr. HADLEY.

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. *Throughout the year; text-book work and lectures; three credits.* 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. *Second semester; two credits.* Mr. FULLER.

Primarily for Graduates

30. Live Stock Problems. A study of problems relating to Animal Husbandry. Prerequisites, courses 1, 20, 24, 26. *Assigned reading or research work; conferences weekly; three to five credits.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, Mr. TORMEY.

DAIRY HUSBANDRY

PROFESSOR FARRINGTON; ASSISTANT PROFESSORS BENKENDORF, LEE, SAMMIS AND ASSISTANTS.

The department offers instruction in the theory and art of manufacturing dairy products, united to the needs of (a) farm dairymen, (b) investigators or teachers, (c) managers, operators, or inspectors of creameries, cheese factories, or city milk plants. Students intending to major in this department should elect courses 2 and either 3 or 4 at the beginning of the Junior year.

Primarily for Undergraduates

1. General Farm Dairying. An elementary study of milk and of methods employed for testing and manufacturing farm dairy products. *First half of second semester; lectures; two and one-half credits.* Mr. FARRINGTON; *laboratory,* Mr. BENKENDORF.
2. Milk Inspection. Advanced work with the various methods of testing and inspecting dairy products and the detection of physical adulterations. Prerequisite, course 1. *First semester; lecture; four credits.* Mr. FARRINGTON; *laboratory,* Mr. BENKENDORF.
3. Creamery Butter Making. A course in the theory and practice of cream separation and butter manufacture under commercial conditions. Prerequisite, course 1. *Throughout the year; lecture; three credits.* Mr. FARRINGTON; *laboratory,* Mr. LEE.

4. Cheese Making. Practical and experimental work in making, curing and scoring cheese. Lectures and laboratory work on special topics. Cheddar, brick, cottage, buttermilk, cream, and foreign cheese are made and studied during the year. Prerequisite, course 1. *Throughout the year; lecture; laboratory period.* Mr. SAMMIS and assistants.
5. Pasteurization, City Milk Supply and Ice Cream Making. A study of the various methods of handling milk and cream under commercial conditions. Prerequisite, course 2. *Second semester; laboratory; two credits.* Mr. BENKENDORF.
6. Dairy Machinery. Shop practice with engines, boilers, artificial refrigerating machinery, pipe fitting, etc. *Second semester; laboratory; three credits.* Mr. BENKENDORF and assistant.
19. Thesis. The thesis may be written on assigned topics in the department. Prerequisite, courses 2 and 3, or 4. *Throughout the year; two credits.* Mr. FARRINGTON, 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. Prerequisite, course 2. *Throughout the year. Conferences, laboratory and field work; three or five credits.* Mr. FARRINGTON, Mr. BENKENDORF.
21. Butter Yield and Quality. A study of various factors in the process of buttermaking for advanced students. Prerequisite, course 3. *Throughout the year; conferences; laboratory and field work; three to five credits.* 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. Prerequisite, course 4. *Throughout the year; conferences and laboratory work; three or five credits.* Mr. SAMMIS.

ECONOMIC ENTOMOLOGY

ASSISTANT PROFESSOR SANDERS.

Destructive and dangerous insect pests are considered with regard to their recognition, evidences of attack, and extent of injury. The uses of insecticides and other control measures are discussed.

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. *First semester; lectures and laboratory; three credits.* Mr. SANDERS.
3. Horticultural Entomology. A study of insects affecting horticulture. Prerequisite, course 1. *Second semester; one lecture and two laboratory periods; three credits.* Mr. SANDERS.
6. Household Insects. A general consideration of the insects of importance in the household and those affecting ornamental plants. *Second semester; lectures and laboratory; one credit.* 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.

The following courses are designed for those who have had some biological training, and who desire a general knowledge of the subjects of heredity and breeding, or who contemplate following these lines, either from the theoretical or practical point of

view. Special opportunity is offered those doing advanced work to get practical experience in the methods of experimental breeding.

Primarily for Undergraduates

1. Principles of Breeding. A general survey of the facts and theories of variation and heredity with especial reference to their application to the problems of breeding, or the improvement of plants and animals of use to man. *Three credits; first semester.* Prerequisite, Botany 1. (A course in Zoology in addition would be desirable.) *Lectures and demonstrations.* Mr. COLE.

For Undergraduates and Graduates

20. Problems of Heredity and Breeding. Weekly seminar consisting of conferences in which subjects relating to the more special problems of heredity and breeding are considered topically, particular attention being given to their more recent phases as represented in the current literature. Consent of instructor required before election. *One credit; throughout the year.* Mr. COLE.
21. Topical Work in Heredity and Breeding. Assigned topics for reading, conference and report. Designed for students who desire additional work in the subjects named, but who are not prepared to elect course 25. May be taken in connection with or subsequent to course 1. *Credits and hours to be arranged.* Mr. COLE.
25. Research. For students qualified by preliminary training. Work may be based on the analysis of available data, or upon new data acquired by experiment. *Credits and hours to be arranged.* Mr. COLE.

HORTICULTURE

ASSOCIATE PROFESSOR J. G. MOORE; MR. MILWARD, MR. ROGERS, MR. JOHNSON, MR. BUTLER.

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 tree fruits. *Second half of first semester; five lecture periods a week; two and one-half credits.* Mr. MOORE.
2. Fruit Growing. Practical work in spraying, pruning, cultivation and various other orchard practices, including construction of fruit packages, plans for storage houses, etc. Prerequisite, course 1. *Second semester; three laboratory or lecture periods a week; three credits.* 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. *Second semester; three lecture or laboratory periods; three credits.* 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. *Throughout the year; first semester prerequisite to second; two credits each semester.* Mr. ROGERS.
5. Small Fruit Culture. A discussion of the principles and practices of successful culture of cane, bush and other small fruits. *First semester; one credit.* Mr. MOORE.
6. Landscape Gardening. Principles of decorative planting, planning, mapping and planting of grounds. Study and identification of ornamental plants. *Throughout the year; first semester prerequisite to second; lecture and laboratory periods; two credits each semester.* Mr. MOORE.

7. Plant Propagation. Instruction in the various methods of propagating horticultural plants. *Second semester; one lecture and one laboratory period; two credits.* Mr. MOORE.
8. Floriculture. The propagation and care of greenhouse, garden, and lawn plants with special reference to home floriculture. Designed for women. *Second semester; lectures and laboratory work; three credits.* Mr. MOORE.
19. Thesis. Based on research or experimental work in the department. *Two credits.* Mr. MOORE, Mr. ROGERS.

For Undergraduates and Graduates

20. Plant Breeding. A study of the current literature related to the theory and practice of plant breeding. Laboratory practice in selection, crossing and biometry. Prerequisite, Botany 20 and either Experimental Breeding 1, Botany 14, Botany 17, or Zoology 6. *Throughout the year; first semester prerequisite to second. Two laboratory or lecture periods; two credits each semester.* Mr. ROGERS.
21. Experimental Horticulture. Planning of experiments, keeping records, and experimental work in the laboratory, greenhouses, or orchards. *Throughout the year; two or more laboratory periods; two to five credits.* Mr. MOORE, Mr. ROGERS.
22. Pomology. Advanced course in the study of the classification, identification, judging and handling of our common fruits. Students electing this course should have had courses 1 and 2. *First semester; lecture and three laboratory periods; four credits.* Mr. MOORE.

PLANT PATHOLOGY

PROFESSOR JONES, MR. MELHUS.

For Undergraduates and Graduates

1. Diseases of Plants. A general introduction to the nature, causes and remedies of the diseases of economic plants including field and laboratory studies of a typical series of examples. Arranged with especial reference to the needs of students interested in horticulture, agronomy and for-

estry. Prerequisites, botany 1 and bacteriology 1. *First semester; three credits.* Mr. JONES, Mr. MELHUS.

2. Methods in Plant Pathology. Studies in the laboratory, greenhouse and field upon the bacterial and fungus diseases of plants, involving the technique of culture methods, inoculations, spore germination, etc. Diseases of non-parasitic origin also receive attention. Prerequisite, Plant Pathology 1. *Second semester; three credits.* Mr. JONES, Mr. MELHUS.

19. Thesis. This includes the investigation of some problem in plant pathology. It is desirable to choose the subject early, preferably the preceding spring, in order to take advantage of the summer season for securing material. *Throughout the year; two credits.* Mr. JONES.

23. 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. *Throughout the year; one credit.* Mr. JONES.

25. Research. Students who have had suitable preparation may conduct research work in connection with a thesis or graduate study. *Hours and credits to be arranged.* Mr. JONES.

POULTRY HUSBANDRY

ASSISTANT PROFESSOR HALPIN.

The Poultry department is well equipped with houses for laying stock and for brooding chicks, also has a very complete list of incubators, brooders and other poultry machinery. The present stock consists of some twenty varieties of chickens and three varieties of ducks.

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. *First*

semester; lectures and demonstrations; two credits. 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. *Second semester; lectures and demonstrations; two credits.* 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; laboratory work; one credit.* 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. Prerequisite, course 2. *First semester; by appointment; nine weeks; two credits.* 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. Prerequisite, courses 1, 2 and 4. *Second semester; one to three credits.* 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. Prerequisite, course 1. *First semester; two lectures and one laboratory period per week; three credits.* 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. Prerequisites, courses 1, 2 and 4. *Second semester; one lecture, one recitation and assigned work; three credits.* Mr. HALPIN.

SOILS

PROFESSOR WHITSON; ASSISTANT PROFESSOR JONES, MR. WALSTER, MR. PETERSON, MR. TRUOG.

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 Agronomy, 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. *Second semester; three lectures and two laboratory periods weekly; five credits.* Mr. WHITSON, 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. *Second semester; three lectures a week for the first nine weeks and field work six hours per week for the second nine weeks; three credits.* Mr. JONES.

19. Thesis and Assigned Work. *Credits and hours to be arranged.* Mr. WHITSON, Mr. JONES, Mr. WALSTER, Mr. PETERSON, Mr. TRUOG.

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. *Second semester; lectures; two credits.* 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. Prerequisite, Chemistry 11a. *First semester; one lecture and four laboratory periods; five credits.* Mr. WALSTER.

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. *First semester; six laboratory hours and two lectures per week; five credits.* 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. *First semester; conferences and field work by appointment; three credits.* 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. *Second semester; two credits.* 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. *Second semester; three credits.* Mr. WHITSON.

31. Research Work. Graduate students with sufficient preparation will be assigned special problems for study. Mr. WHITSON, Mr. JONES, Mr. WALSTER, Mr. PETERSON.

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-seven 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 maintained by a 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 1910–11, conducted 137 two-day institutes, 43 cooking

schools in 63 counties and an annual three-day Round-up at Hudson, St. Croix County, March 14–15–16, 1911.

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 12,000 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, 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 may be chosen 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, the 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
	15

SECOND SEMESTER	Credits.
English, German or French, Chemistry — Same as first semester	3, 4, 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
Physiology 1, (L. & S.) a general course of lectures on the elements of human anatomy and physiology	3
Home Economics 4, Economics of food supply	3
	16

SECOND SEMESTER	Credits.
Physics 1, (L. & S.) same as first semester	5
Bacteriology, 1 and 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	5
Home Economics 5, Textiles	4
	14

Junior Year

FIRST SEMESTER	Credits.
Home Economics 11, Manufacture and Selection of Clothing	5
Home Economics 7, Home Architecture and Sanitation	5
Electives to be chosen as indicated below	5
	15

SECOND SEMESTER	Credits.
Home Economics 8, Household Decoration	4
Home Economics 6, Dietetics	5
Electives to be chosen as indicated below	6
	15

Senior Year

FIRST SEMESTER	Credits.
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	Credits.
Home Economics 9, Humanics	4
Home Economics 20, Seminar	1
21, Teachers' course	2
Thesis	2
Electives to be chosen as indicated below	6
	15

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 application.

The following electives are recommended for those desiring to teach Home Economics: Biology; Chemistry 11a (Qualitative); Physiology; Chemistry 20 (Organic) 1st semester; Agricultural Chemistry 5; Physiology; Elements of Economics 1; Economic Statistics 31; Social Psychology 39; Charities and Corrections 41; Education 13b; Education 41; Psychology 1; Experimental Psy-

chology 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, MISS LOOMIS, MISS TURNER, MISS GRADY, MISS CHALLONER.

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. *Throughout the year; lectures, Tu., Th.*, 9; *one laboratory period per week; three credits.* Miss MARLATT, Miss LOOMIS, Miss GRADY, Miss TURNER, Miss CHALLONER.
2. Art and Design. Principles of design; rhythm, harmony and balance. Study of work of modern artists for these principles. 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. *First semester; lectures, M.*, 9; *two laboratory periods per week; three credits.* Miss HOPE, Miss GRADY.
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. *Second semester; lectures, W., F.*, 9; *two laboratory periods per week; three credits.* Miss LOOMIS, Miss TURNER.

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. *First semester; lectures W., F.,* 9; *two laboratory periods per week; three credits.* Miss MARLATT, 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. *Second semester; lectures, Tu., Th.,* 11; *two laboratory periods per week; four credits.* Miss HOPE, Miss TURNER.

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. *First semester; lectures, M., W., F.,* 11; *two laboratory periods per week; five credits.* Miss MARLATT, 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. *First semester; lectures, M., W., F.,* 10; *two laboratory periods per week; five credits.* 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, Home Economics 2, 5, 7. *Second semester; lectures W., F.,* 9; *two laboratory periods per week; four credits.* Miss HOPE, Miss GRADY.

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. *First semester; lectures, Tu., Th.*, 11; *one laboratory period per week; three credits.* Miss MARLATT.

11. Manufacture and Selection of Clothing. The history of costume, costume designing, economic problems of construction of clothing in the home as compared to the commercial product, hygienic factors involved in clothing, and economic and sociological phases of the clothing industry. Prerequisites, courses 2 and 5. *First semester; lectures M., F.*, 9; *three laboratory periods per week; five credits.* Miss HOPE, Miss TURNER.

For Undergraduates and Graduates

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. *Second semester; lectures, M., W., F.*, 10; *quiz W.*, 11; *four credits.* Miss MARLATT.

20. Seminar. Advanced work in problems connected with the home, institutional management and the Home Economic movement in education. *Second semester; one credit.* Miss MARLATT, Miss LOOMIS.

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. *Second semester; two credits.* 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 matriculation without condition 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

2. That he has completed at least the equivalent of two years' work in this college.

3. That he has successfully pursued laboratory courses of college grade in physics, chemistry and biology.

4. That he has studied elementary Latin.

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. 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.

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of work, and over fifty schools will require, 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.

Eight state boards of medical examiners (Minnesota, North Dakota, South Dakota, Connecticut, Colorado, Iowa, Indiana and Kansas) have already announced the requirement of one or more years of college work preliminary to the medical course.

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 take the following studies:

a. English, 6 units (3 hours per 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 approximately equivalent in amount to one year of study in a high school.

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 unit hours shall be elected in either history or mathematics does not apply to candidates for the degree of Bachelor of Science (Medical Science Course).

d. 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 equivalent to one credit. Students are expected to take 15 credits per week in recitations, lectures, and laboratory work, making 30 credits per year, and 120 for the course. In addition, two hours per week (one credit per semester) of gymnastics are required of men, and four hours per week (two credits per semester) of women, during the first two years. Men are required to drill two hours per week during the first two years, for which four credits are given. The total requirements for class-room work, military drill, and the gymnasium are, therefore, 128 credits.

Students excused from drill are required either to make up the work before graduation, or if the excuse is based on per-

manent incapacity, to make good the requirement by work in other departments.

No student will be permitted to receive credit toward graduation of more than eighteen credits in one semester in regular studies except by permission of the faculty obtained in advance. Candidates for the degree of Bachelor of Arts are not allowed to elect above 16 credits per semester except when the standings of the preceding semester are all 85 or above. Candidates for the degree of Bachelor of Science cannot count toward graduation more than 15 credits in any one semester unless the standings are all 85 or above.

e. *Major Study.*—At the beginning of the sophomore or the junior year, every candidate for the degree of Bachelor of Arts or Bachelor of Science shall elect as his major subject work in some one department. 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 hours, nor more than 40 hours.

f. *Thesis.*—All candidates for a baccalaureate degree are required to present a graduating thesis, the subject of which must be approved by the student adviser and the chairman of the department in which the candidate is doing the work represented by the thesis. The thesis must represent some phase of the student's work in his major study, and must have the character of a scholarly dissertation on the subject.

CHOICE OF COURSES

The student who enters the College of Letters and Science with the intention of studying medicine should arrange his work so that he can take up systematically the work required for medical credit and for a bachelor's degree. Elective work should be chosen with the intention of making the course of study broad as well as thorough.

The following language studies are required:

English I.

Two years of foreign language.

Students who have not studied Latin in the high school are required to take a course in elementary Latin.

The following science studies are required*:

Pre-medical Work.

	Lectures and Recitations.	*Laboratory Hours.*	*Credits.*
Chemistry I	128	192	10
Physics I	160	128	10
Biology I	96	256	10
	384	576	30

Studies required in the first year of medical course if not presented for matriculation.

Organic Chemistry	48	96	4
Embryology	32	64	3
	80	160	7

First Year Medical Course.

Histology	32	112	4
Neurology	32	64	3
Gross Anatomy	32	352	12
Physiology	32		2
Physiol. Chem	20	140	4
	148	668	25

Second year Medical Course.

Physiology	80	108	7
Pathology	96	160	6
Bacteriology and Hygiene	48	144	5
Pharmacology and Toxicology	64	94	5
	288	506	23

Required of candidates for a bachelor's degree: Thesis 128 laboratory hours (4 units).

* It is recognized that similar courses at other institutions may not correspond with the scientific courses given at Wisconsin. This will not prevent full credit being granted for approximately equivalent courses pursued elsewhere.

Required and elective work may be arranged 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, take the B. S. degree and get 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.

One of the two following schedules is advised:

Freshman Year

Schedule 1.

English I.....3 credits per semester
German or French 4 " " "
Physics I.....5 " " "
(M. Tu. W. Th. 11)
Biology I.....5 " " "
(M. W. 2:30)
Total.....32 credits

Schedule 2.

English I.....3 credits per semester
German or French 4 " " "
Physics I.....5 " " "
(M. Tu. W. Th. 11)
Chemistry I.....5 " " "
(M. W. F. 10)
Total.....32 credits

Sophomore Year

Schedule 1.

French or German.....4 credits per semester
Chemistry I.....5 " " "
(M. W. F. 10)
Comparative Anatomy.....3 " 1st "
(Tu. Th. S. 9-11)
Embryology....3 " 2nd "
(Tu. Th. S. 8-10)
Electives.....4 " per "
Total.....32 credits

Schedule 2.

French or German.....4 credits per semester
Biology I.....5 " " "
(M. W. 2:30)
Organic Chemistry..4 " 1st "
(Tu. Th. 8-12)
Quantitative Analysis.....3 " 2nd "
Electives.....3 " per "
Total.....32 credits

The modern foreign language begun in the High School should, as a rule, be continued during the first year in the college, while a new language may be begun in the sophomore year. Psychology I and Medical Zoology (Anat. 6) are strongly advised as electives in the sophomore year.

Junior Year

Schedule 1.		Schedule 2.	
(First year in medical school)			
FIRST SEMESTER			
Histology	4 credits	Histology	4 credits
(M. W. F. 9-12)		*(M. W. F. 9-12)*	
Organic Chemistry	4 "	Comparative Anat. (Elec.)	3 "
(Tu. Th. 8-12)		*(Tu. Th. S. 9-11)*	
Human Anatomy	6 "	Human Anatomy	7
(Daily 1:30-4:30)		*(Daily 1:30-4:30)*	
Total	14 "	Total	14 "
SECOND SEMESTER.			
Neurology	3 credits	Embryology	3 credits
(M. W. 8-11)		*(Tu. Th. S. 8-10)*	
Physiological Chemistry	4 "	Neurology	3 "
(Tu. Th. S. 10-12. F. 8-12)		*(M. W. 8-11)*	
Physiology	2 "	Physiological Chemistry	4 "
(M. W. 11)		*(Tu. Th. S. 10-12. F. 8-12)*	
Human Anatomy	6 "	Physiology	2 "
(Daily 1:30-4:30)		*(M. W. 11)*	
Total	15 "	Human Anatomy	5 "
		(Daily 1:30-4:30)	
		Total	17 "

Senior Year

(Second year in medical school)

FIRST SEMESTER

Medical Bacteriology ..... 5 credits
(Tu. W. Th. F. 8-11)
Pharmacology and Toxicology ..... 4 credits
(Lect. M. 8, Tu., Th., 1:30, S. 8, Lab. M. W. F. 1:30-4:30 after Christmas)
Physiology ..... 7 "
(Lect. M. Tu. W. Th. F. 11, Lab. M. W. F. 1:30-4:30 until Christmas)
Total ..... 16 "

SECOND SEMESTER

Pathology	6 credits	Medical Psychology (Elec.)	3 credits
(Tu. W. Th. F. 8-12)		Topographical	
Thesis	4 "	Anatomy (Elec.)	3 "
Physical diagnosis (Elec.)	3 "	*(Tu. Th. 1:30-4:30)*	
(M. W. F. 1:30-2:30)		Total	16 "

2. SEVEN-YEAR COMBINED COURSE (LEADING TO THE B. A. 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 B. A. 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 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 may 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 B. A. 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 are required, four for the B. A. 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.

Credit for Medical Work

Full credit for one year of medical work will not 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 regular curriculum.

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, plans are being made for special courses for public health officers. It is planned to give a course extending over one year and leading to a diploma of Public Health. This course will be open to those who have received a degree in medicine or in medical or sanitary science and desire to fit themselves especially for public health work. It is also planned to offer a short course each year for those already engaged in public health work, but who desire more insight into certain aspects of this work. The following course leading to a diploma of public health is provisionally announced for the year 1911–1912.

1st Semester

1. Bacteriology for Health Officers. To be given in conjunction with medical bacteriology but with special laboratory work and some special lectures. *Tu.*, *W.*, *Th.*, *F.*, *S.*, 11; *five credits.* Dr. RAVENEL.
2. Physiology. Respiration, dietetics, the chemistry of food, air, water, sewage, etc. Lectures daily at 11. Laboratory work *M.*, *W.*, *F.*, 2:30 *to* 4:30.
3. Meteorology. Mr. MILLER.
4. Medical Zoology. *Tu.*, *Th.*, 1:30 *to* 4:30. Mr. ALLEN.

2nd Semester

1. Special Bacteriology, Pathology and Hygiene for Health Officers. To include bacteriology of air, water, food and soils, epidemiology, diseases of animals transferable to man, occupational diseases, etc. *Tu.*, *Th.*, *F.*, *S.*, 12, Dr.

RAVENEL and Dr. BUNTING, to be in part in conjunction with the regular course in pathology.

2. Microscopical Examination of Drugs and Foods. *M., W., F.*, 10 *to* 12. Mr. DENNISTON.
3. Public Health Administration and Vital Statistics. Mr. HUTCHCROFT. Course to be arranged for afternoon work in conjunction with the following course.
4. Practical Field Work. Including use of disinfectants, inspection of slaughter houses, cow sheds, meat, schools, factories and work shops. Mr. FROST.
5. Hydrology. A two-credit course. Mr. MEAD.

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.

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. HELM.

A group of courses intended to offer a comprehensive view of the gross and microscopic anatomy and the embryology of verte-

8. All courses offered by the Correspondence-study Department. In addition, opportunities are offered for advanced work and research in anatomy and for a study of some of the lower animal types of special interest in medicine. 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. *First semester; Tu., Th., S.,* 9 *to* 11. *Second semester; M., W., F.,* 1:30 *to* 3:30. *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. *Second semester; Tu., Th.,* 1:30 *to* 3:30. *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., S.,* 8 *to* 10. *Three credits.* Dr. BARDEEN, Mr. ALLEN.

16. Embryology of the turtle and chick. *First semester; Tu., Th.,* 1:30 *to* 3:30. *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* 5:30. *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. *Second semester; Tu., Th.,* 1:30 *to* 3:30. *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.,* 8 *to* 11. *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 bi-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; ASSISTANT PROFESSORS BROWN, 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. *First semester; Tu., W., Th., F.*, 8 *to* 11. *Five credits.* Dr. RAVENEL, Mr. FROST, Dr. BROWN.
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. VAN VALZAH.

1. Clinical Diagnosis. *Second semester; lectures, M., W., F.,* 1:30 *to* 2:30. *Laboratory, two to four hours. Two to three credits.* Dr. EVANS, Dr. VAN VALZAH.
2. Advanced work in clinical and physical diagnosis and in experimental medicine. Dr. EVANS and members of the staff.

PATHOLOGY

PROFESSOR BUNTING; ASSISTANT PROFESSOR BROWN.

Courses 1 and 3 are open to students who have successfully completed courses in histology and embryology. Course 1 is 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. *Second semester; T., W., Th., F.,* 8 *to* 12. *Six credits.* Dr. BUNTING, Dr. BROWN.
3. Experimental Pathology. In this course by suitable experiments the work of course 1 will be supplemented and elaborated. *Second semester; M.,* 8 *to* 12. *Two credits.* Dr. BUNTING, Dr. BROWN.
4. Advanced Courses. To a limited number of students who have completed course 1 or its 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.

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, first semester; M.*, 8; *Tu., Th.*, 1:30; *S.*, 11. *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 semester; S.*, 8 *to* 11 *till Christmas.* Dr. LOEVENHART.
4. Pharmacology. Lectures on the chemistry, the pharmacological and 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 first semester. *M.*, 8; *Tu., Th.*, 1:30; *S.*, 11. *Three credits.* Dr. LOEVENHART, Mr. ARKIN.
5. Pharmacology. Laboratory course. Experimental studies on the action of drugs. From Christmas to the end of the semester. *M., W., F.*, 1:30 *to* 4:30. *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 EYSTER; ASSISTANT PROFESSORS BRADLEY, MEEK; MR. PETERSEN.

The following courses are designed especially for students studying 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; Tu., Th., S.*, 10 *to* 12; *F.*, 8 *to* 12. *Four credits.* Dr. BRADLEY.
5. Physiology. Lectures and demonstrations. *Second semester; M., W.*, 11. *Two credits.* Dr. EYSTER, Dr. MEEK.
6. Physiology. (a) Lectures and demonstrations. *First semester; M., Tu., W., Th., F.*, 11. *Five credits.* (b) Laboratory work. First semester until Christmas recess; *M., W., F.*, 1:30 *to* 4:30. *Two credits.* Course 5 is prerequisite. Dr. EYSTER, Dr. 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. EYSTER.
10. Advanced Laboratory Course in Physiological Chemistry. This course corresponds to Course 8.

THE SCHOOL OF MUSIC

LOUIS A. COERNE, Director, Professor of the History and Science of Music.

GENERAL ANNOUNCEMENT

It is the purpose of the School of Music to furnish facilities for the study of music in all of its branches, theoretical or practical. Instruction is offered in voice culture, pianoforte, organ, violin, and all orchestral and band instruments; and in aesthetics, 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.

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 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).

Special instruction in vocal or instrumental music may be taken by students not otherwise connected with the University, and such students are not required to pay the incidental fee required of all University students, but they must be able to satisfy the usual entrance requirements.

Special students, twenty-one years of age, are admitted to the School of Music, under the regular provisions of the University, as "Adult Specials."

Special students, under twenty-one years of age, who have unusual musical talent, may, in exceptional cases, 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.

Students wishing to enter the School of Music will apply to the registrar, Room 158, University Hall.

A detailed statement of musical courses will be found under Music in the College of Letters and Science.

THE COURSE OF STUDY, PURSUANT TO THE DEGREE OF GRADUATE IN MUSIC

MUSICAL REQUIREMENTS FOR ENTRANCE

Organ

No previous knowledge of organ playing is required. But the student must be well grounded in pianoforte playing, must possess a correct technique, and be able to read plain four-part music.

Pianoforte

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.*

Violin

Candidates must be well grounded in correct position, intonation, tone, and bowing, and must have mastered the equivalent of David's Violin School, Part 1, and the easier pieces of Dancla, Alard, and others.

Voice Culture

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, pianoforte, violin, or voice culture, including the study of music of the classic, romantic and modern schools.

COURSES OF INSTRUCTION

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 Education. 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. Elements of Form, 2 credits; English, course 1, 3 credits; French, German or Italian, 4 credits; Physical Education.

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 Education. 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 Education.

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 Subjects, 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 pianoforte study are required in addition to the prescribed work in voice, but the second year of pianoforte 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 pianoforte 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 pianoforte study in addition to the prescribed work in violin, and may substitute those credits for electives.

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 sub-

ject. 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 of Music in Schools

This course is designed for those who wish to fit themselves for the supervision of music in the public schools, and it contemplates two years' work. A certificate is granted on the completion of the course.

Students are required to take from 14 to 16 hours per week in recitations, lectures, etc., making 30 credits for the year and 60 credits for the course.

Students who, upon entering, do not show suitable proficiency in pianoforte playing or singing, will be required to take instruction in one or both at the discretion of the director and the instructor of Public School Music.

The required work is as follows:

1. *First Semester.* FIRST YEAR

1. Methods	2 credits
2. Harmony	2 credits
3. Practice-teaching	1 credit
4. Ear-training and Sight-reading	1 credit
5. The Child Voice	1 credit
6. English	3 credits
7. Elective	5 credits
	15 credits

2. *Second Semester.*

1. Methods	2 credits
2. Harmony	2 credits
3. Practice-teaching	1 credit
4. Ear-training and Sight-reading	1 credit
5. Conducting	1 credit
6. English	3 credits
7. Elective	5 credits
	15 credits

SECOND YEAR

1. *First Semester.*

1. Methods	2 credits
2. Advanced Harmony	2 credits
3. History of Music	2 credits
4. Musical Appreciation	2 credits
5. Ear-training and Sight-reading	1 credit
6. Elementary Education	3 credits
7. Elective	3 credits
	15 credits

2. *Second Semester.*

1. Methods	2 credits
2. Advanced Harmony	2 credits
3. History of Music	2 credits
4. Masterpieces of Music	2 credits
5. Ear-training and Sight-reading	1 credit
6. Elective	6 credits
	15 credits

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.

Students expecting to proceed to the degree of Bachelor of Arts must satisfy the requirements for that degree.

The requirements for admission are the same as for all other courses in the University.

Orchestra

MR. MANN, DR. COERNE.

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

MR. MANN.

The Regimental Band is open to all students, possessing the necessary qualifications. Two rehearsals are held each week. Freshmen and sophomores belonging to the band receive credit for military drill. Students who desire to join, should confer with the leader.

Choral Union

DR. COERNE.

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.

University Glee Club

MR. STOTHART, DR. COERNE.

The University Glee Club is an organization of twenty-four men. This club, together with the Mandolin Club, makes at least one extensive tour during the school year. Vacancies are filled by competitive try-out, and membership is open to the entire student body, including graduate students.

University Girls' Glee Club

DR. COERNE.

The University Girls' Glee Club is an organization of twenty-eight women. While this club gives no out of town concerts, frequent public appearances are made locally. Vacancies are filled by competitive try-out.

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

Pianoforte

	½ hour lessons	Hour lessons
Mr. Hall	$50 00	$100 00
Miss Regan or Mrs. Sandberg	36 00	72 00

Voice

Mr. Luening	$50 00	
Miss Bergman	36 00	

Organ

Miss Eastman	$30 00	$60 00

Violin

Mr. von Geltch	$36 00	$72 00

Violoncello and Double-Bass

Mr. Mann	$36 00	

Wood-Wind Instruments

Mr. Saugstad	$36 00	

Brass Instruments

Mr. Adams, Mr. Mann	$36 00	

One Lesson a Week

Pianoforte

Mr. Hall	$27 00	$50 00
Miss Regan or Mrs. Sandberg	20 00	40 00

Voice

Mr. Luening	$27 00	$50 00
Miss Bergman	20 00	40 00

Organ

Miss Eastman	$16 00	$32 00

Violin

Mr. von Geltch	$20 00	$40 00

Violoncello and Double-Bass

Mr. Mann	$20 00	

Wood-Wind Instruments

Mr. Saugstad	$20 00	

Brass Instruments

Mr. Adams, Mr. Mann	$20 00	

Note.—Students regularly enrolled in the university orchestra or band are entitled to half rates for tuition in stringed instruments, wood-wind or brass.

Other Expenses

Piano practice, each hour daily, per semester	$3 00
Organ practice, each hour daily, per semester	9 00
Artists' 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 in applied music 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 Music Hall, from 11 to 12, on Monday, Tuesday, Wednesday and Thursday.

For further information address

L. A. Coerne,
Director, School of Music,
The University of Wisconsin,
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 15½ 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, Dean.
WILLIAM H. LIGHTY, Secretary, Correspondence-Study Department.
FRANK A. HUTCHINS, Secretary, Debating and Public Discussion Department.
JOHN J. PETTIJOHN, Acting Secretary, Department of Instruction by Lectures.
EDWARD J. WARD, Acting Secretary, Department of General Information and Welfare.

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 as an Extra-Mural College.

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 possibiltiy 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 efficiencey 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 that 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 acquire 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 cooperate 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 coördination 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.

CORRESPONDENCE STUDY COURSES

Many courses here listed involve university credit when desired by properly qualified students. Full and explicit information on any course will be supplied upon request.

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

PROFESSOR HARPER; MR. STOUT.

Courses: 1. Description and Classification of Flowering Plants; 11. General Botany; 12. Morphology of Seed Plants; 2. General Morphology of Algae; 3. General Morphology of Fungi; 5. Plant Histology; 4. Morphology of Mosses and Ferns; 6. Elementary Plant Physiology; 7. Drug and Food Products; 8. Trees and Shrubs.

Business Administration

ASSOCIATE PROFESSORS MOORE, RASTALL; ASSISTANT PROFESSOR BUTLER; MR. AVERILL, MR. FRAZER; 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. Coöperative 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, Purchase, and Shipping Methods; 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. Coöperation; 195. State Relation to Industry; 196. Business Psychology; 197. Business Ethics.

Chemistry

PROFESSOR KAHLENBERG; DR. KRAUSKOPF.

Courses: 1. Elementary Chemistry; 2. Qualitative Analysis.

Education

PROFESSORS ELLIOTT, O'SHEA; MR. WELLS.

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. WOOLLEY.

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 BASSETT, BEATTY; MISS BASCOM, DR. PITMAN, MRS. VAN DUSEN.

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 Addresses; 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 Shakspere; 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; 7. Introductory French Prose Composition; 10. General Survey of French Literature.

Geology and Mineralogy

PROFESSORS LEITH, WINCHELL; ASSISTANT PROFESSORS MARTIN, WHITBECK; MR. STEIDTMAN.

Courses: 1. Mineralogy; 2. Economic Geology; 3. Physical Geography; 4. Elementary Geology.

German

PROFESSOR HOHLFELD; DR. REINHARD; MR. WERCKSHAGEN.

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.

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; ASSOCIATE 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; DR. PITMAN.

Courses: 1. Elementary Latin; 2. Caesar; 3. Cicero; 4. Virgil: Aeneid; 5. Elementary Prose Composition; 6. Advanced Prose Composition; 7. Livy: Books I 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. WOOLLEY.

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. PARRY, 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, FISCHER; DR. KRAUSKOPF, MISS WAKEMAN.

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; MISS MACGILL.

Courses: 1. Elements of Economics; 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

PROFESSOR REINSCH; 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 HOOL, SMITH, KINNE.

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, WHITBECK; 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 coöperation 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); Moral Education in the Public Schools; The Primitive and Modern Conscience; May a Man do What he Wills with His Own.

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).

Mr. EDWARD J. WARD. The Public School as a Social Center (Illustrated); Playgrounds (Illustrated); The Philosophy of the Common Ground.

Mr. H. K. BASSETT. Composition and Literature in the Grades and High School (Two lectures).

Assistant Professor W. J. CHASE. The Teaching of History in the High School (Two lectures); History of the English Language.

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).

Professor C. R. Fish. The Civil War and Reconstruction (Six lectures); The American Frontier 1830; The Texas Question; The Occupation of the Far West; Military and Diplomatic Strategy of the Civil War.

Mr. A. B. Stout. Wisconsin Indian Mounds (Illustrated).

Associate Professor W. L. Westerman. Ancient Civilization of Egypt; The Babylonians and Hittites; Pericles and the City of Athens; Alexandria and the Hellenistic Age (All illustrated).

Assistant Professor R. H. Whitbeck. Geographical Influence in History (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.

Miss Caroline E. Macgill. Economic Status of the American Family (Six lectures); The Cost of Living; Home Life and Industry in Colonial Days; Women in Industry; The Economic Independence of Women; Marriage Customs in Many Lands.

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; Impressions of Inner China (Illustrated).

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 Work of Wall Street; Town and City Promotion; Railway Traffic Control; The New Business Education; Investments; The Fundamental Theory of Life Insurance.

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; English Politics; Our Relations with Canada.

Mr. FORD H. MACGREGOR. City Government by Commission; American Municipal Progress; What is the Matter with our Cities.

Mr. W. L. BAILEY. Colonial Governments (Six lectures); Town and County; Government and Business; Government and Politics; A Decade of Rural Progress.

Mr. A. B. HALL. Origin and Development of Government (Four lectures); An Analysis of Political Party Activities (Two lectures); Aspects of History and Politics (Two lectures); The Growth of Socialism; Slum Life and Democracy; Child Labor and Democracy; Conquests of Peace.

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. CUNLIFFE. Browning and Italy (Two or three lectures); The New Woman in the Old World.

Professor J. C. FREEMAN. English Life and Literature (Six lectures); Shakspere (Six lectures); The Great Epics of the

World (Six lectures); American Life and Letters (Six lectures); Who Wrote Shakspere; Shakspere, the Gentleman; English Sonnets and Sonnetteers; 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.

Dr. HOMER A. WATT. The London of Shakspere (Illustrated).

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 A. BEATTY. The Life of Shakspere and His Time; The Theatres of London; Shakspere's Country (All illustrated); Forerunners of Shakspere; Contemporaries of Shakspere.

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. Oratory in American History (Four lectures); The Structure, Composition, and Presentation of a Public Address (Three or six lectures); Washington and Lincoln; Historic Boston and Vicinity (Illustrated); Rudyard Kipling, with readings; Ideas and Ideals; National Holidays.

Associate Professor T. H. DICKINSON. Present Day Tendencies in the Drama (Five lectures); English Drama in the Nineteenth Century (Four lectures); The Friendship of Books.

Miss ELIZABETH GERTRUDE JOHNSON. Kipling; Mark Twain; Richard Harding Davis; Midsummer Night's Dream (All Lecture-Recitals).

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; Pre-

vention 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); Some Epidemics and Their Lessons; Microbes and Their Habits.

Assistant Professor GEORGE WAGNER. Zoölogy (Six lectures, illustrated).

Assistant Professor R. H. WHITBECK. The Essentials of Geography (Six or more lectures); Geographical Influence in Development of Industry (Illustrated).

Engineering

Associate Professor H. 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. 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.

Highway Construction

Professor W. O. HOTCHKISS. Road Making (One or more lectures).

Physical Training

Professor G. W. EHLER. Physical Education (One or more lectures); Athletics (One or more lectures); Playgrounds (Illustrated); Public Recreation (Illustrated.)

Assistant 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

Assistant 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; Alaska and Its Resources; (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, Consolidation of Rural Schools, The Immigration Problem,* several phases of the "good roads" problem, *Closed vs. Open Shop, The Commission Form of City Government,* and *Increase of the Navy.* 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 dis-

cuss *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. Therefore, 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.

Bureau of Civic and Social Centers

For the legitimate, free, and healthy expression of the common, civic, social, and recreative life of a community, there must be a natural, common-to-all place of meeting. In our pioneer and rural communities, from the settlement of Plymouth to the present day, there has always been the town hall or schoolhouse center for the community's use. The fruits of the town meeting in the development of American institutions are the pride of all true Americans.

For years there have been sporadic efforts to restore and extend this original practice in the country districts, and to promote the custom in city communities. The expression of this desire has come from so many sources that it has been deemed

advisable to establish a bureau of civic and social centers with an expert adviser in charge, whose counsel upon these matters could be had by every community in the state.

During the first year of service through this bureau, many local communities have gathered in their schoolhouses or other public buildings, and formed organizations for free, non-partisan, non-sectarian discussion of public questions for the promotion of civic intelligence.

This association upon common ground, has promoted mutual understanding, the removal of prejudice, the growth of civic friendliness, and a large neighborhood ambition which expresses itself in making provision for opportunities for wholesome recreation, and in movements for beautification, improved sanitation and town promotion. Such increased civic spirit obviously facilitates the enrichment of the common cultural and educational life in many ways, as well as furnishes a more convenient means whereby the various communities may take advantage of the many resources offered by the Extension Division of the University.

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 coöperated 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 proceedings of the Bakers' Institute, for example, have been printed each

year, and are mailed to any address on request. The Extension Division will arrange for, and conduct institutes of one or more days' duration as desired.

The Institute of Municipal and Social Service

From October to the end of March of the current academic year an Institute of Municipal and Social Service was conducted in Milwaukee under the direction of an expert and with the assistance of many specialists. This Institute became a center of study, information, and training in social reform, social welfare, and municipal efficiency. Through lectures, conferences, visits, and investigations, it afforded an excellent agency towards fitting men and women for more intelligent and effective municipal and social service. Some of the results of special investigations are being published by the Extension Division for general distribution throughout the state.

DEPARTMENT OF PHYSICAL EDUCATION

GEO. W. EHLER, Director, Professor of Physical Education.

Assistant Professors Mayhew, Director Women's Gymnasium, Meanwell, Director Men's Gymnasium, Elsom, Richards, Sweetland; Mr. Barry, Mr. Kirchgasser, Miss Learned, Mr. McChesney, Mr. Nespor, Mr. Vail, Mr. Wilson, Miss Wyman; Mr. Driver, Miss Griffin, Miss H'Doubler, Miss McKee; Mr. Dacy, Mr. Harnden, Mr. Hyatt, Mr. Johnson, Mr. Kolinsky, Mr. Mead, Mr. Smith.

JURISDICTION

The Department of Physical Education has jurisdiction over all athletic, aquatic and gymnastic activities.

AIMS

The aims of the department are as follows:

1. The development of organic power, the basis of vitality, the prerequisite to physical and mental efficiency;
2. To secure and maintain good posture, a harmonious muscular development, and a reasonable degree of bodily skill and grace;
3. To provide an incentive and an opportunity for every student to secure at least one hour's physical recreation daily as a balance to the sedentary demands of university life;
4. To conserve the social and moral values of games and sports and to secure to every student the fullest opportunity for their practice;
5. To develop the "habit of exercise;"
6. To train teachers of physical education and directors of play for service in educational institutions, clubs, playgrounds, municipal recreation systems, etc.

EQUIPMENT

The Men's Gymnasium is 200 feet in length by 100 feet in width. On the ground floor are the offices, locker rooms, bath rooms and swimming pool. On the second floor there is an unobstructed hall 165 by 98 feet, used for the purposes of gymnastic exercise and military drill.

The equipment includes the usual apparatus and developing machines and four basketball courts. The third floor contains six handball courts, two running tracks, rowing machines and baseball cage.

The Women's Gymnasium occupies the second and third floors of Lathrop Hall which was erected in 1910. The main gymnasium is two stories high, and has a floor space of 118 by 60 feet. There is a visitors' gallery, a stage and a running track. The concert room, 72 by 42 feet, is used as a gymnasium for smaller classes.

The Women's Gymnasium is fitted with modern and approved pieces of apparatus, such as ladders, horizontal 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. 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. The swimming pool, 60 by 26 feet, is located at one end of the basement, and is well lighted and ventilated. Adjacent rooms contain dressing rooms, showers and lockers and apparatus for drying the hair. Four bowling alleys are installed in the basement.

A 40-acre athletic field is provided for the use of students, and all intercollegiate and other games and meets are held there. The field is equipped with two large grandstands, a running track, tennis courts, baseball diamonds, football fields, and other necessary features. The University roads, drives and paths afford ideal courses for cross country running. The University boat-house is located next to the gymnasium on the shore of Lake Mendota. The present equipment includes ten shells and a forty horse-power launch.

For outdoor sports in winter there is a toboggan slide, 600

feet long and 100 feet high, running out on to Lake Mendota, and a skating course and hockey rinks. These facilities are lighted at night and are maintained in first class condition.

REQUIREMENTS

Physical Training is prescribed for all freshmen and sophomore students, including special students, throughout the college year, two periods per week for men and four for women.

Students are required to be able to swim a distance of fifty (50) yards, by the end of the Sophomore year.

Students may not be excused from the prescribed training during the first two years without substituting an equivalent satisfactory to the department, or making up the work before graduation.

Credits to the extent of four (4) for men and eight (8) for women must be secured in Physical Education by the satisfactory completion of the regular courses. These credits are determined on the basis of attendance and effort and the attainment of certain standards of organic development, motor proficiency and knowledge of the principles and practice of efficient living.

The prescribed courses are designed to secure a high degree of organic power, harmonious physical development and a reasonable degree of skill and grace.

Election of specialized sports and exercises (Course 2) may be made by students as soon as they have attained the minimum standard of vigor, development and skill. This will usually occur at the end of the first year. Freshmen who have attained the required standard at the time of entrance may elect their exercise under Course 2.

For the purposes of this department the college years is divided into three seasons, *Fall*—October and November, *Winter*—December, January, February, March, *Spring*—April, May and June. During the Fall and Spring all activities are conducted out of doors in as far as the weather will permit. Regular indoor exercise is confined to the winter months.

Men students will provide themselves with suitable clothing for indoor and outdoor activities. The regulation suit consists of white sleeveless shirt, running pants, supporter and rubber soled shoes. For elementary football and baseball, which are

prescribed for all men who have attained the requisite standard of vigor, students will require heavy shoes, stockings, short heavy pants and negligee shirt or jersey.

For women a uniform gymnasium suit is required and can be purchased in the Fall at the Gymnasium office. Price—$5.00.

The locker and laundry fee is $1.25 per semester.

MEDICAL AND PHYSICAL EXAMINATIONS

The organic condition, stage of physical development and degree of motor efficiency attained by each entering student is determined at the opening of the college year by the following series of examinations and tests:

(1) A complete medical examination given under the supervision and direction of the University Medical Adviser, Dr. Joseph S. Evans. The findings of this examination together with the recommendations of the Adviser are furnished the Department of Physical Education and appropriate modifications in prescriptions of physical exercise are made in accordance therewith.

(2) A thorough physical examination made by members of the staff of the Department of Physical Education at the same time as the medical examination. This examination includes the essential measurements of the body (a limited number), certain strength tests and a careful search for abnormal deviations of form, structure and function.

(3) A series of tests in typical activities to determine the individual's motor efficiency as shown by his agility, muscular control, physical judgment and posture.

An endeavor is made to determine the student's exact organic condition with a view to outlining for each a proper regimen of exercise, diet, rest and work. Students are classified on an organic scale and are permitted to engage only in such sports and games as their physical condition fits them for.

No student is permitted to participate in competitive games either of an intercollegiate, inter-department or inter-class grade unless he is physically fit for the same as determined by the examinations described.

All members of intercollegiate teams are subject to the supervision of the medical members of the staff and every precaution

is taken to prevent overtraining, exhaustion or unnecessary strain.

At the time of registration each freshman is assigned a date for his examinations. This appointment takes precedence over all other assignments or engagements. Students failing to report will be suspended from all university activities until examination is made.

All candidates for football or other teams must be examined and secure examiner's permit before reporting for practice with their squads.

TOURNAMENTS AND CONTESTS

The University is a member of the Intercollegiate Conference Athletic Association and maintains representative teams in all intercollegiate sports. No student may be a member of an intercollegiate team until he has been a year in the University, has no conditions in his various courses and has received a weighted average of 77 in the work of the semester previous to the time he desires to compete.

The Intercollegiate sports are under the government of the Athletic Council, a committee of five members of the faculty appointed by the President. The Director of the Department is the chairman of this committee.

All coaches and assistants are members of the University faculty and of the staff of the Department of Physical Education.

Inter-class and Inter-college tournaments and contests for men are conducted in all games and sports. Their conduct and management is in the hands of the Athletic Board composed of twelve students elected by the entire body of men students.

Similar tournaments and contests in games and sports suitable to women and confined to the women students of the University are conducted and managed by the Women's Athletic Association.

All tournaments and contests are subject to the supervision of the Department of Physical Education.

PROFESSIONAL TRAINING

In order to meet the demand for teachers of physical education, directors of playgrounds and instructors in educational athletics and play of university caliber and training, this de-

partment has instituted a comprehensive group of professional courses in the theory and practice of physical education. These with related and prerequired courses in the departments of medicine and education and the foundation courses in the various other departments of the College of Letters and Science offer full opportunity for complete preparation for professional service in public elementary, high and normal schools, preparatory schools and colleges, clubs, social welfare institutions, playgrounds, municipal recreation systems, etc.

Major—Students regularly entered in the College of Letters and Science may elect their major to the extent of forty credits in courses 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19, and take four years in course 20.

Minor—Students in the Course for the Training of Teachers electing the teaching of Physical Education as a minor subject must secure a minimum of ten credits in courses 5, 8, 9, 10, 11, 12, 13, 19—not more than four in 19, and give two years to course 20.

Students electing their minor in Physical Education under the 20 credit rule may not secure more than four credits in Course 19 and must give two years to Course 20.

PROFESSIONAL CERTIFICATE. Students desiring to receive the certificate for teachers of physical education must comply with the following conditions:—

1. Fulfill all entrance requirements of the College of Letters and Science.

2. Be of sound health with a large measure of organic vigor, have shown an aptitude for the attainment of a high degree of motor efficiency and give evidence of strong leadership at the time of making major election.

3. Fulfill all regular requirements for the A. B. degree.

4. Secure credits in prerequired and related sciences as follows:—Biology—10, Chemistry—18, Physiology—9, Anatomy—5, Hygiene—5, Psychology—3, Sociology—3, Education—6.

5. Secure a minimum of forty credits in Physical Education courses 5 to 19, including Thesis—four credits.

6. Devote 10 hours per week for four years to the practice of athletics, aquatics, gymnastics and military drill (2 periods per week for two years), including practice teaching two hours per week for three years.

7. Demonstrate in practice teaching ability to handle squads, groups, classes and teams, and to organize and direct games, tournaments and contests, etc.

Time of Course—Students are advised to plan to devote five years to this course, giving the entire Freshman year to the general subjects of the A. B. course, securing the degree at the end of the fourth year and the certificate at the end of the fifth year, specializing in the 5th year in the advanced Physical Education courses and related subjects. Freshmen should elect Biology 1 for their science.

SPECIAL TRAINING

Students desiring to specialize as coaches or instructors in certain sports, games or events may do so by taking the required practice courses in course 20 and the required special technique in course 19.

VOLUNTARY EXERCISE

All students are urged to secure at least one hour of recreative exercise each day and the facilities of the entire department are open for this purpose whenever not required for prescribed activities. Advice and direction may be secured by any student at any time. All advanced practice courses are open to any student fitted to take them.

A. REGULAR STUDENTS' COURSES

1. Developmental Exercises, comprising graded gymnastics, elementary athletics and aquatics, including the fundamentals and essentials of basketball, baseball, football, dancing, wrestling, swimming, rowing, skating, cross country running, vaulting, jumping, etc. Prescribed for all freshmen and such sophomores as have not attained the requisite degree of organic power, muscular development and motor efficiency. Two hours weekly until requisite standard is attained. *One or two credits.*
2. Advanced Exercises. Systematic courses in athletics—track and field events, cross country running, baseball, basketball, football (intercollegiate, rugby, soccer), tennis, field hockey, etc.; aquatics—swimming, rowing, water polo, div-

ing, life saving; gymnastics—advanced apparatus exercises, gymnastic, folk and esthetic dancing, tumbling; wrestling, fencing and boxing. The work of the various class and varsity teams is included in this course. Open to all students who have attained the required degree of organic power and bodily skill. Two or more times weekly according to forms elected (see special bulletin issued prior to opening of college Sept. 1911). *One to four credits.*

3. Special Corrective Exercises—designed to give personal instruction and individual training to students whose condition as determined by the medical and physical examination prevents their participation in the regular courses. Time and credit arranged. *One or two credits.*
4. Efficient Living. The laws of personal and general hygiene, the principles of rational work, rest, recreation and nutrition, the correlation of daily conduct and high grade efficiency. Given with Courses 1, 2 and 3. Prescribed for all Freshmen and Sophomores. Open to upperclassmen.

The various activities are arranged by seasons as follows:

Fall.	Winter.	Spring.
1. Baseball (modified).	1. Basketball.	1. Baseball.
3. Cross country running.	2. Boxing.	6 Field Hockey.
6. Field Hockey.	4. Dancing.	7. Football.
7. Football.	5. Fencing.	9. Handball.
9. Handball.	8. Gymnastics.	11. Rowing.
11. Rowing.	9. Handball.	14. Tennis.
14. Tennis.	10. Ice Hockey.*	15. Track and Field.
15. Track and Field.	11. Rowing.	
	12. Skating.*	
	13. Swimming.	
	15. Track and Field.	
	16. Tumbling.	
	17. Water Polo.	
	18. Wrestling.	

*Part season only and according to weather. May be elected only in connection with some other sport.

B. PROFESSIONAL COURSES

5. History of Physical Education. This course covers the past history of Physical Education, Comparative Physical Education and the Present Status of Physical Education. It deals with the efforts for physical education among the

different races during historic times, especially with those of the Greeks and Romans; with the modern movement, and the development of physical education in Sweden, Germany and England; and with the present status of this field of education in the United States and in the different European countries. *Two credits.*

6. Kinesiology. The Mechanics of Voluntary Motor Exercise. This course deals with applied anatomy and the mechanics of movement in relation to education. The movements of the body in general are studied. The joints and muscles of the shoulder girdle, spine, and pelvis are discussed in detail, and the objects and results of exercises are noted. Special attention is given to gymnastic movements. Lectures, demonstrations and discussions. Prerequisites—Course 20 and Anatomy 21. *Two credits.*
7. Physiology of Exercise. A study of the effects of exercise on the organism and functional processes, especially circulation and respiration, nutrition and elimination; the effects of exercises of varying strength. speed, skill, and endurance; a consideration of the problems of breathlessness, fatigue, soreness, and training. Prerequisite: Course 6 and Physiology 6. Lectures, laboratory work and reports. *Four to eight credits.*
8. The Principles of Physical Education. Physical Education as a conscious social and educational endeavor, using neuro-muscular activities and their physical, mental and social results as a means. The sphere of motor activity in the physical, mental and social life of peoples, and their relations to the influences of modern social conditions. The results and values of exercise among other factors influencing the growth and development of the child, receive particular attention, also their relation to different individual tendencies and different social conditions. The principles and methods involved in the various systems are analyzed. Prerequisite: Physiology 6 and Philosophy 1. *Three credits.*
9. Nature and Function of Play. A study of play from the standpoint of its influence as a social and educational force. The meaning of play in the life of the growing

child, place of play among the social-recreative customs of peoples, athletics as play, the social and educational possibilities of play, the factors controlling an effective development of the play impulse in the individual and in society, etc. Prerequisites: Philosophy 1, Education 11. *Two credits.*

10. Physical Education of Children. From the viewpoint of the growth and development of the child and of the factors controlling the same and of the place of motor activities among those factors are considered the values and limitations of school room gymnastics, the need of the larger activities of vigorous play, the problems of play and athletic organization, the use of recess periods, after school use of the playground and gymnasium and other practical problems of administration. Prerequisites: Courses 8 and 9. *Two credits.*
11. Physical Education of Adolescents. Characteristics, tendencies and needs of adolescents, physical education for adolescents with special emphasis on secondary school and college conditions together with consideration of the great non-student groups, classes of exercises to be used, conditions of individuals, methods of studying and dealing with such conditions, organization and management of competitive exercises, the social and moral leadership necessary. Prerequisites: Courses 8 and 9. *Two credits.*
12. Growth and Development. Characteristics of growth and development of organs and tissues, nascent periods, acceleration, retardation and maturity of bones, muscles, nerves, heart, lungs and other organs, relation to organic and neuro-muscular education. Lectures, laboratory work. Prerequisite: Anatomy 21. *Three credits.*
13. Physical Examinations. Methods of measuring and testing the body, examination of the special senses, vitality and efficiency tests. Anthropometric methods, their place and values, statistical forms, graphic charts, etc. Determination of normal and abnormal variations. Lectures, demonstrations, practical work. Prerequisite: Anatomy 21. *Three credits.*
14. Medical Examinations. (Clinical Medicine 1.) Physical Diagnosis of normal and pathological conditions, methods

of examination of heart, lungs, kidneys, etc. Lectures, demonstrations, laboratory work. Prerequisites: Anatomy 21, Physiology 6. *Two credits.*

15. Prescription of Exercise. (Gymnastic Therapeutics.) The adaptation of methods of exercise to the development of the individual, correction of abnormal variations, use of special gymnastic appliances, etc. Lectures, demonstrations and practical work. Prerequisites: Courses 6, 7, 12, 13 and 14. *Two credits.*

*16. First Aid to the Injured. Cause, nature and treatment of wounds, bruises, sprains, fractures, faints, shocks, etc., poisons, antidotes, stimulants; bandaging, dressings, antiseptics and disinfectants, etc. *One credit.*

17. Organization and administration. Spirit and aims, activities, discipline, etc. of the playground, gymnasium and athletic field. The planning and construction of the gymnasium, the athletic field, playground; gymnastic and athletic apparatus and equipment; the organization and administration of physical exercise in clubs, classes, groups and teams, in social welfare institutions, municipal recreation systems, educational institutions, etc. *Two credits.*

*18. General Technique. This course is associated with the practical procedure of the Developmental Exercises of Course 20. It is fundamental and preliminary to all the courses in technique. It aims to give a knowledge of the nomenclature used, the analysis of exercises necessary for intelligent leadership and a preliminary drill in ability as a demonstrator. Students taking it are required to lead sections in the regular classes in Developmental Exercises. Lectures, demonstrations and practice.

19. Special Technique. Study of the composition of the various forms of exercise, examination of their fundamental principles, determination of their hygienic, educational and recreative values; methods of practice and of training; adaptation to different ages, sexes and conditions; methods of presentation and instruction. Lectures, demonstrations and practice teaching under supervision. Prerequisite: Course 18. Personal skill acquired in practice in Course 20. *Credit arranged; one to eight credits.*

*20. Practice—Personal proficiency to be secured in following:

1. Developmental Exercises—Four hours per week for two years.

Calisthenics—Corrective Exercises.

Apparatus Exercises—Graded.

Elementary Athletics—Fundamentals and Essentials of Cross Country Running, Starting, Jumping and Vaulting, Baseball, Football, Basketball, Aquatics, Wrestling, etc., etc.

2. *Specialized Exercises—Four to six hours per week throughout first two years; ten hours per week 3rd and 4th years* including Practice Teaching.

Gymnastics, Track and Field and 3 or more Electives. Select from each group at least one major or two minors. Majors in Italics.

INDIVIDUAL EVENTS—Swimming, *Rowing*, Dancing, Tumbling, Skating, Tennis, Handball.

TEAM GAMES—*Basketball*, *Baseball* (Outdoor, Indoor), *Football* (College, Rugby and Soccer), Ice Hockey Field Hockey, Volley Ball, Water Polo, etc.

ANTAGONISTICS—Boxing, Wrestling, Fencing.

(Students will be required to develop some degree of expertness in at least three of the above in order to secure experience in the processes of training, developing team work, coaching, etc.)

Note—The following courses will not be offered in 1911–1912, 5, 7, 12 and 15.

Special bulletin issued in Sept., 1911 will give days, hours and instructors of all courses.

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* Not open for general credit.

MILITARY SCIENCE AND TACTICS

CAPTAIN RALPH MCCOY, 5TH U. S. INFANTRY, COMMANDANT.
BATTALION SERGEANT MAJOR, W. G. ATKINS, U. S. ARMY, RETIRED, ASSISTANT 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.

The work of the military department embraces practical instruction in infantry drill, target practice, and first aid to the injured, and a course in drill regulations and lectures on military subjects for cadet officers and the higher non-commissioned officers. One unit hour credit is allowed for each semester.

Students may be excused from drill at the discretion of the commandant on the following grounds only:

1. Students who, prior to entering the university, have received the equivalent of one year instruction in the University regiment, either in the national guard or in a recognized military school, will receive full credit for one year. Those holding an honorable discharge from the army or navy of the United States are exempt from drill.

2. Students from foreign countries, not intending to become citizens of the United States.

3. Students registered as adult specials, not intending to graduate. But should such students change at any time to a full course, they will be required to take the full two years of drill before graduation.

4. Members of the crews or intercollegiate athletic teams may be excused from drill by the Commandant upon recommendation of the Director of Physical Education. 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.

5. Students who find it necessary to secure outside employment to meet their university expenses, when such employment interferes with the drill hour and cannot be arranged otherwise. Those excused under this class will be required to furnish a certificate on the prescribed form, stating that to take the drill would practically compel them to leave the university.

6. 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.

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 four companies each, a band, trumpet corps, target detachment, and hospital corps. These organizations will be supplied with a full quota of cadet 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 National Guard of Wisconsin, subject to assignment to duty for five years after graduation.

ROSTER OF UNIVERSITY CORPS OF CADETS

Commandant

Captain Ralph McCoy, 5th U. S. Infantry.

Assistant Commandant

Battalion Sergeant Major, W. G. Atkins, U. S. Army, Retired.

Surgeon

Lieutenant-Colonel James C. Elsom, Medical Examiner.

Cadet Officers

REGIMENTAL, FIELD, AND STAFF

Colonel, H. D. Blake.
Lieutenant-Colonel, P. H. Martin.
Captain and Regimental Adjutant, H. D. White.
Captain and Regimental Quartermaster, J. L. B. Thomas.
Senior Color Sergeant, S. R. Easthope.
Junior Color Sergeant, S. O. Shoop.

BAND

Captain, C. A. Mann.
First Lieutenant, V. C. Bonesteel.
Second Lieutenant, F. E. Williams.
Drum Major, R. E. Echlin.

FIRST BATTALION

Major, C. W. Esau.
First Lieutenant and Adjutant, D. D. Foxwell.
Second Lieutenant and Quartermaster, F. E. Vitz.
Sergeant Major, J. M. Kehlor.
Quartermaster Sergeant, H. V. Harn.

Company A.

Captain, W. T. Brunow.
1st Lieutenant, J. E. Love.
2nd Lieutenant, E. Martineau.
1st Sergeant, E. M. Jeffrey.

Company B.

Captain, G. W. Esau.
1st Lieutenant, W. P. Wolff.
2nd Lieutenant, R. P. Hammond.
1st Sergeant, H. A. Cobaugh.

Company C.

Captain, L. H. Stewart.
1st Lieutenant, E. E. Browning.
2nd Lieutenant, M. E. Rose.
1st Sergeant, E. P. Galloway.

Company D.

Captain, H. L. Kadish.
1st Lieutenant, D. S. Holmes.
2nd Lieutenant, D. R. Mapel.
1st Sergeant, H. L. Chesick.

SECOND BATTALION

Major, K. M. Mann.
1st Lieutenant and Adjutant, C. C. Chambers.
2nd Lieutenant and Quartermaster, M. R. Scott.
Sergeant Major, M. C. Sosman.
Quartermaster Sergeant, C. P. Stivers.

Company E.

Captain, L. K. Wilson.
1st Lieutenant, L. J. Brady.
2nd Lieutenant, M. J. Evans.
1st Sergeant, H. M. Root.

Company F.

Captain, A. Richmond.
1st Lieutenant, N. A. English.
2nd Lieutenant, R. C. Tuttle.
1st Sergeant, R. B. Wilcox.

Company G.

Captain, R. R. Hibbard.
1st Lieutenant, M. M. Lawrence.
2nd Lieutenant, W. C. Epstein.
1st Sergeant, H. W. Steiner.

Company H.

Captain, V. R. Bacon.
1st Lieutenant, E. C. Noyes.
2nd Lieutenant, R. D. Hughes.
1st Sergeant, S. Michelstetter.

THIRD BATTALION

Major, C. J. Moritz.
1st Lieutenant and Adjutant, G. E. Bennett.
2nd Lieutenant and Quartermaster, G. W. Christie.
Sergeant Major, J. W. Millspaugh.
Quartermaster Sergeant, R. L. Goodland.

Company I.

Captain, L. L. Hebbard.
1st Lieutenant, C. R. Cleveland.
2nd Lieutenant, A. O. Brophy.
1st Sergeant, F. M. Rosenkrans.

Company K.

Captain, A. J. Barclay.
1st Lieutenant, E. G. Bailey.
2nd Lieutenant, H. M. Harker.
1st Sergeant, E. G. Teschan.

Company L.

Captain, H. V. Meissner.
1st Lieutenant, C. Wurdemann.
2nd Lieutenant, N. R. Johnson.
1st Sergeant, R. N. Armstrong.

Company M.

Captain, H. A. Baker.
1st Lieutenant, A. R. Taylor.
2nd Lieutenant, F. R. Wahl.
1st Sergeant, W. Tolhurst.

HOSPITAL CORPS

Lieutenant-Colonel, J. C. Elsom.
Captain, H. S. Abell.
1st Lieutenant, E. J. W. Walker.
1st Sergeant, C. Freund.

TARGET DETACHMENT

Captain, A. T. Hobart.
1st Lieutenant, L. A. Gutowski.
1st Sergeant, V. M. Peltier.

THE SUMMER SESSION

GEORGE C. SELLERY, Director

DURATION OF THE SESSION

The thirteenth Summer Session of the University of Wisconsin opens June 26, 1911. The session lasts six weeks and closes August 4, except in the Law School, where the session continues for ten weeks and ends September 1.

CLASSES OF COURSES

Courses, both academic and professional, are offered for graduates, and for undergraduates in arts, law, engineering, and agriculture, 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 requirement 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 24, and Monday, June 26, 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; ASSOCIATE PROFESSOR MILLER.

1. Physiological Anatomy. *M., W., F.*, 8. *One credit.* Mr. BARDEEN.
2. Mammalian Anatomy. *M., Tu., W., Th., F.*, 2:30 *to* 5:30. *Three credits.* Mr. MILLER.
3. Histology and Organology. *M., Tu., W., Th., F.*, 9 *to* 12. *Three credits.* Mr. MILLER.
4. Neurology. *M., Tu., W., Th., F.*, 9 *to* 12. *Credit according to work done.* Mr. MILLER.
5. Human Anatomy. *M., Tu., W., Th., F.*, 9 *to* 5:30. *Credit according to work done.* Mr. BARDEEN.
6. Topographical Anatomy. *M., Tu., W., Th., F.*, 9 *to* 5:30. *Credit according to work done.* Mr. BARDEEN.

BOTANY

PROFESSOR ALLEN; ASSISTANT PROFESSOR MARQUETTE; MR. GILBERT, MR. STEIL.

1. General Botany. *Lectures, M., W., F.*, 9. *Three credits.* Mr. ALLEN, Mr. GILBERT.

2. Morphology of Algae. *Lectures, M., W., F.,* 2:30. *Two or three credits.* Mr. MARQUETTE, Mr. STEIL.
3. Morphology of Seed Plants. *Lectures, Tu., Th.,* 10. *Two credits.* Mr. ALLEN, Mr. STEIL.
4. Description and Classification of Seed Plants. *Lectures, laboratory and field work, M., W., F.,* 3:30 *to* 5:30, *and Saturday excursions. One credit.* Mr. GILBERT.
5. Physiology of the Cell. *M., Tu., W., Th., F.,* 8 *to* 10. *Two credits.* Mr. MARQUETTE.
6. The Mechanism of Inheritance. *M., W., F.,* 12. *One credit.* Mr. ALLEN.
7. Botanical Methods and Materials. *M., W., F.,* 10, *and Saturday excursions. One credit.* Mr. ALLEN.

CHEMISTRY

PROFESSORS FISCHER, LENHER; DR. KRAUSKOPF, DR. MATHEWS; MR. ELLINGSON, MR. BARNEBEY.

1. General Chemistry. *Lectures, M., Tu., W., Th., F.,* 10. *Two or more credits.* Mr. KRAUSKOPF, Mr. ELLINGSON.
2. Qualitative Analysis. *Lectures, Tu., Th.,* 8. *Two or more credits.* Mr. ELLINGSON.
3. Quantitative Analysis. *Lectures, Tu., Th.,* 8. *Three or more credits.* Mr. LENHER, Mr. BARNEBEY.
4. Advanced Quantitative Analysis. *Lectures, Tu.,* 9. *Two or more credits.* Mr. LENHER.
5. Advanced Inorganic Chemistry. *M., W., F.,* 8. *One credit.* Mr. LENHER.
6. Organic Chemistry. *Lectures, M., Tu., W., Th., F.,* 9. *Two or more credits.* Mr. FISCHER, Mr. MATHEWS.
7. Organic Analysis. *Hours to be arranged. Two or more credits.* Mr. FISCHER.
8. Water and Gas Analysis. *Hours to be arranged. Two credits.* Mr. FISCHER, Mr. MATHEWS.
9. Physical Chemistry. *Lectures, M., Tu., W., Th., F.,* 8. *Two or more credits.* Mr. MATHEWS.

EDUCATION

Associate Professor Henmon, Superintendent ————————; Assistant Professor King (University of Iowa), Dr. Neumann (College of the City of New York); Mr. Simmers, Mr. Wells.

1. History of Modern Education. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. Wells.
2. Principles of Teaching. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. Wells.
3. Mental Development. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. Simmers.
4. Principles of Moral Education. *M., Tu., W., Th., F.*, 12. *Two credits.* Mr. Neumann.
5. Social Aspects of Education. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. King.
6. Principles of Education. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. King.
7. Advanced Educational Psychology. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. Henmon.
8. Supervision of Education. *Two credits.* Mr. ————————.
9. State School Systems. *Two credits.* Mr. ————————.

ENGLISH

Professor Cunliffe; Associate Professors Dickinson, Young; Assistant Professors Bassett, Woolley; Dr. Elliott.

1. Preparatory English. *M., Tu., W., Th., F.*, 8; *M., W., F.*, 9. Mr. Woolley.
2. Freshman English. *M., Tu., W., Th., F.*, 10; *M., W., F.*, 11. *Three credits.* Mr. Woolley.
3. Advanced Freshman English. *M., Tu., W., Th., F.*, 9; *M., W., F.*, 10. *Three credits.* Mr. Elliott.
4. Victorian Era. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. Elliott.

5. The Modern Novel. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. DICKINSON.
6. The Modern Drama. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. DICKINSON.
7. Shaksperean Comedy. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. YOUNG.
8. Anglo-Saxon. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. YOUNG.
9. Browning. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. CUNLIFFE.
10. English Literature Seminary. *M., W., F.*, 9 *to* 10:30. *Two credits.* Mr. CUNLIFFE.
11. The Teaching of English. *M., Tu., W., Th., F.*, 12. *Two credits.* Mr. BASSETT.

FESTIVALS

ASSISTANT PROFESSOR BASSETT, MR. DYKEMA.

1. The School Festival. *M., Tu., W., Th., F.*, 2:30.

GEOGRAPHY

ASSISTANT PROFESSOR WHITBECK; MR. GREGORY.

1. Physical Geography for High School Teachers. *M., Tu., W., Th., F.*, 11. *Two credits.*
2. Commercial Geography. *M., Tu., W., Th., F.*, 9. *Two credits.*
3. Field and Laboratory Course. *One or two credits.*

GERMAN

PROFESSORS HOHLFELD, VOSS; ASSISTANT PROFESSORS GOODNIGHT, KIND, PROKOSCH; DR. HAERTEL, DR. BRUNS.

1. Beginners' German. *M., Tu., W., Th., F.*, 10 *to* 12. *Four credits.* Mr. KIND.

1a. Second Semester German. *M., Tu., W., Th., F.*, 8 *to* 10. *Four credits.* Mr. HAERTEL.

2. Second Year German. *M., Tu., W., Th., F.*, 10 *to* 12. *Four credits.* Mr. BRUNS.

3. Conversation. *M., Tu., W., Th., F.*, 8. *One credit.* Mr. GOODNIGHT.

4. Composition and Grammar Review. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. VOSS.

5. Sophomore Reading. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. GOODNIGHT.

6. Rapid Reading. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. HAERTEL.

7. German Lyric Poetry. *M., Tu., W., Th., F.*, 12. *Two credits.* Mr. BRUNS.

8. Advanced Practice in Writing and Speaking German. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. PROKOSCH.

9. The Teaching of German. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. PROKOSCH.

10. Introductory Middle High German. *M., W., F.*, 11. *One credit.* Mr. PROKOSCH.

11. Goethe's Faust. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. HOHLFELD.

12. Old High German. *M., W., F.*, 10. *One credit.* Mr. VOSS.

13. Literary Relations of England and Germany. *M., W., F.*, 12. *One credit.* Mr. KIND.

14. Keller. *M., W., F.*, 11. *One credit.* Mr. GOODNIGHT.

15. Seminary in German Philology. *Tu., Th.*, 9 *to* 10:30. *One credit.* Mr. VOSS.

16. Seminary in German Literature. *Tu., Th.*, 11 *to* 1. *Credit according to work done.* Mr. HOHLFELD.

GREEK

PROFESSOR CHARLES FORSTER SMITH.

1. Elementary Greek. *M., Tu., W., Th., F.*, 12. *Two credits.*

2. Xenophon's *Anabasis* or Homer. *M., W., F.*, 11. *One credit.*

3. Homer's *Iliad* and *Odyssey* in Translation. *Tu., Th.*, 11 *and an additional hour. One credit.*

4. Greek Drama. *M., W., F.*, 10. *One credit.*

HISTORY

PROFESSORS FISH, SELLERY; ASSOCIATE PROFESSORS CHASE, THOMPSON (University of Chicago), WESTERMANN; DR. ROOT.

1. Medieval History, 395–1095. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. THOMPSON.
2. Modern Europe (1500–1715). *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. SELLERY.
3. The United States from the Revolution to 1830. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. ROOT.
4. The Roman Empire from Augustus to Diocletian. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. WESTERMANN.
5. A History of Commerce in the Later Middle Ages. *M., Tu., W., Th., F.*, 12. *Two credits.* Mr. THOMPSON.
6. Europe, 1789–1900. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. SELLERY.
7. British Colonial Administration, 1689–1765. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. ROOT.
8. Civil War and Reconstruction. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. FISH.
9. Seminary in Buchanan's Administration. *M., Tu., W., Th., F.*, 8. *Credit according to work done.* Mr. FISH.
10. The Teaching of History. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. CHASE.

LATIN

PROFESSORS SLAUGHTER, SHOWERMAN.

1. The Teaching of Latin. *M., W., F.*, 9. *One credit.* Mr. SLAUGHTER.
2. Reading Course. *M., W., F.*, 8. *One credit.* Mr. SLAUGHTER.
3. Prose Composition. *Tu., Th.*, 8, *with a third hour. One credit.* Mr. SLAUGHTER.
4. Roman Drama. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. SHOWERMAN.
5. Roman Lyric Poetry. *M., W., F.*, 9. *One credit.* Mr. SHOWERMAN.

6. Ancient Architecture. *M., W., F.*, 3:30. *One credit.* Mr. SHOWERMAN.
7. Life of Augustus. *Tu., Th.*, 9 *to* 11. *Credit according to work done.* Mr. SLAUGHTER.

LIBRARY TRAINING

MISS HAZELTINE AND ASSISTANTS.

1. Cataloguing and Use of Library Books. *M., Tu., W., Th., F.*, 9. *Two credits.*

MANUAL ARTS

PROFESSORS CRAWSHAW, PHILLIPS; ASSISTANT PROFESSORS MILLAR, ————; SUPERINTENDENT GODDARD; MISS HOPE; MR. DORRANS, MR. GABRIEL, MR. PAYTON.

1. Mechanical Drawing I. *M., Tu., W., Th., F.*, 2:30 *to* 5:30. *Three credits.* Mr. PHILLIPS.
2. Mechanical Drawing II. *M., Tu., W., Th., F.*, 2:30 *to* 5:30. *Three credits.* Mr. PHILLIPS.
3. Descriptive Geometry. *Recitations, M., Tu., W., Th., F.*, 11. *Three credits.* Mr. MILLAR.
4. Elementary Woodwork and Turning. *M., Tu., W., Th., F.*, 2:30 *to* 5:30. *Three credits.* Mr. CRAWSHAW, Mr. DORRANS.
5. Furniture and Cabinet Design and Construction. *M., Tu., W., Th., F.*, 2:30 *to* 5:30. *Three credits.* Mr. CRAWSHAW, Mr. DORRANS.
6. Pattern Making. *M., Tu., W., Th., F.*, 8 *to* 11. *Three credits.* Mr. DORRANS.
7. Foundry Work. *Hours to be arranged. One or two credits.* Mr. PAYTON.
8. Forge Work. *M., W., F.*, 8 *to* 10; 10 *to* 12. *One or two credits.* Mr. GABRIEL.
9. Machine Shop Work. *M., W., F.*, 8 *to* 10; 10 *to* 12. *One or two credits.* Mr. GODDARD.
10. Principles of Design. *Lectures, M., W.*, 8. *Two credits.* Miss HOPE.

11. Decorative Metal. *Hours to be arranged. Credit according to work done.* Mr. ————.
12. Teaching of Manual Arts. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. CRAWSHAW.

MATHEMATICS

PROFESSOR VAN VLECK; ASSISTANT PROFESSORS DOWLING, HART, WOLFF; DR. BURGESS, DR. DRESDEN.

1. Algebra. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. VAN VLECK.
2. Solid Geometry. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. HART.
3. Plane Trigonometry and Logarithms. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. DOWLING.
4. Analytic Geometry. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. HART.
5. Calculus. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. DOWLING.
6. Theory of Complex Numbers. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. DRESDEN.
7. Elementary Analysis. *M., Tu., W., Th., F., S.*, 8 *and* 11. *Five credits.* Mr. BURGESS.
8. Integral Calculus. *M., Tu., W., Th., F., S.*, 8 *and* 12. *Four credits.* Mr. WOLFF.
9. Differential Equations. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. DRESDEN.
10. Projective Geometry. *M., W., F.*, 9. *One credit.* Mr. VAN VLECK.
11. Differential Geometry. *M., W., F.*, 8. *One credit.* Mr. DOWLING.
12. Calculus of Variations. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. DRESDEN.
13. Theory of Integrals. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. VAN VLECK.
14. The Teaching of Mathematics. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. HART.

METEOROLOGY

Mr. Miller, Local Forecaster, U. S. Weather Bureau.

1. Elementary Meteorology. *M., Tu., W., Th., F.*, 2:30. *Two credits.*
2. Climates of the World. *Lectures, Tu., Th.*, 11. *One credit.*

MUSIC

Professor Coerne; Mr. Dykema.

1. Public School Music, Elementary. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. Dykema.
2. Public School Music, Advanced. *M., Tu., W., Th., F.*, 12. *Two credits.* Mr. Dykema.
3. Music Appreciation. *M., Tu., W., Th., F.*, 10. *One credit.* Mr. Coerne.

PHILOSOPHY

Professors McGilvary, Sharp; Associate Professor Henmon.

1. General Psychology. *Lectures, M., Tu., W., Th.*, 9. *Two credits.* Mr. Henmon.
2. Modern Philosophy. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. McGilvary.
3. Contemporary Philosophy. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. McGilvary.
4. Social and Political Ethics. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. Sharp.
5. History of Modern Ethics. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. Sharp.

PHYSICAL EDUCATION

PROFESSOR EHLER, DIRECTOR HETHERINGTON (Fels Endowment); ASSISTANT PROFESSOR MEANWELL; MR. NESPOR, MISS TRILLING, MR. WILSON, and ASSISTANTS.

1. The Principles of Physical Education. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. HETHERINGTON.
2. Physical Education in Elementary Schools. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. EHLER.
3. Physical Education in Secondary Schools. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. EHLER.
4. Nature and Function of Play. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. HETHERINGTON.
5. Superintendents' and Principals' Course. *M., Tu.*, 12. Mr. EHLER, Mr. HETHERINGTON.
6. Organization and Administration of Playgrounds. *W., Th., F.*, 12. *One credit.* Mr. EHLER, Mr. MEANWELL.
7. General Gymnastics. *M., Tu., W., Th., F.*, 9. *One credit.* Mr. MEANWELL.
8. School Gymnastics. *M., Tu., W., Th., F.*, 11. *One credit.* Miss TRILLING.
9. Plays and Games. *M., Tu., W., Th., F.*, 2:30. *One credit.* Mr. MEANWELL, Miss TRILLING.
10. Folk Dancing. *M., Tu., W., Th., F.*, 3:30. *One credit.* Miss TRILLING.
11. Athletics and Field Sports. *M., Tu., W., Th., F.*, 3:30. *One credit.* Mr. WILSON.
12. Swimming. Men's class, *Tu., Th., S.*, 4:30. Women's classes, *M., W., F.*, 4:30; *Tu., Th., S.*, 11. Mr. NESPOR.

PHYSICS

PROFESSORS MENDENHALL, SNOW; ASSISTANT PROFESSOR GAGE.

1. General Lectures. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. MENDENHALL.
2. General Laboratory Practice. *Credit according to work done.* Mr. GAGE.

3. Advanced Lectures on Heat or Light. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. MENDENHALL.
4. Advanced Laboratory Practice. *M., Tu., W., Th., F.*, 2 *to* 4. *Credit according to work done.*
5. Lectures for High School Teachers. *M., Tu., W., Th., F.*, 5. Mr. SNOW.

POLITICAL ECONOMY

PROFESSORS GILMAN, ROSS, SCOTT, URDAHL, MRS. SPENCER.

1. The Elements of Economic Science. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. URDAHL.
2. Financial History of the United States. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. SCOTT.
3. Trust Movements. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. URDAHL.
4. The Classical Economists. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr SCOTT.
5. Accounting. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. GILMAN.
6. Business Organization and Management. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. GILMAN.
7. Social Psychology. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. Ross.
8. Social Movements and Social Service. *M., Tu., W., Th., F.*, 9. *Two credits.* Mrs. SPENCER, Mr. Ross.
9. Seminary: The Family. *M., W., F.*, 8. *One credit.* Mr. Ross.

POLITICAL SCIENCE

PROFESSOR SCOTT (George Washington University); ASSOCIATE PROFESSOR LLOYD-JONES.

1. Government and Politics in the United States. *M., Tu., W., Th., F.*, 8. *Two credits.* Mr. LLOYD-JONES.
2. European Governments. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. LLOYD-JONES.

3. International Law. *M., Tu., W., Th., F.*, 10. *Two credits.* Mr. SCOTT.
4. The Development and Methods of International Arbitration. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. SCOTT.

PUBLIC SPEAKING

ASSOCIATE PROFESSOR LYMAN.

1. Extempore Speaking. *Tu., Th., S.*, 8. *One credit.*
2. Platform Speaking. *M., W., F.*, 9. *One credit.*
3. Interpretative Reading. *Tu., Th., S.*, 9. *One credit.*
4. Argumentation. *M., W., F.*, 8. *One credit.*

ROMANCE LANGUAGES

PROFESSOR H. A. SMITH; ASSISTANT PROFESSOR SCHLATTER; DR. COOL, MR. MICHELL, MR. DONDO.

1. Beginners' French. *Four credits, M., Tu., W., Th., F.*, 8 *to* 10, Mr. MICHELL; *M., Tu., W., Th., F.*, 10 *to* 12, Mr. SCHLATTER.
2. Second Semester French. *M., Tu., W., Th., F.*, 11. *Two credits.* Mr. COOL.
3. Advanced French. *M., Tu., W., Th., F.*, 9. *Two credits.* Mr. SMITH.
4. Grammar and Composition. *M., W., F.*, 12. *One credit.* Mr. MICHELL.
5. French Pronunciation. *Tu., Th.*, 9, *with a third hour. One credit.* Mr. DONDO.
6. Elementary Conversation. *M., Tu., W., Th., F.*, 8. *One credit.* Mr. DONDO.
7. Advanced Conversation. *M., W., F.*, 10. *One credit.* Mr. DONDO.
8. The Modern French Drama. *M., W., F.*, 8. *One credit.* Mr. SMITH.
9. Seventeenth Century Drama. *M., W., F.*, 11. *One credit.* Mr. MICHELL.

10. Victor Hugo. *M., W., F.*, 9. *One credit.* Mr. DONDO.
11. George Sand, Balzac, Daudet. *Tu., Th.*, 9, *with a third hour. One credit.* Mr. SCHLATTER.
12. Old French or Old Provençal. *M., W., F.*, 12. *One credit.* Mr. SCHLATTER.
13. Old French Literature. *M., W., F.*, 11. *One credit.* Mr. SMITH.
15. Elementary Italian. *M., W., F.*, 8. *One credit.* Mr. SCHLATTER.
17. Elementary Spanish. *M., Tu., W., Th., F.*, 8; *M., W., F.*, 9. *Three credits.* Mr. COOL.
18. Advanced Spanish. *Tu., Th.*, 8, *with a third hour to be arranged. One credit.* Mr. COOL.

ZOOLOGY

ASSISTANT PROFESSOR WAGNER.

1. General Zoology. *Lectures, M., W.*, 8. *Two credits.*
2. Entomology. *Lectures, Tu., Th.*, 8. *Two credits.*
3. Advanced Zoology and Research. *Credit according to work done.*
4. Zoological Methods. *Hours to be arranged. One credit.*

COLLEGE OF ENGINEERING

ELECTRICAL ENGINEERING

ASSISTANT PROFESSOR ————.

1. Testing Direct Current Dynamos. *One or two credits.*
2. Testing Alternating Current Machinery and Appliances. *One or two credits.*
3. Theses.
4. Special Work.

HYDRAULIC ENGINEERING

ASSISTANT PROFESSOR DAVIS.

1. Experimental Hydraulics. *Credit to be arranged.*
2. Advanced Experimental Hydraulics. *Credit to be arranged.*

MACHINE DESIGN

PROFESSOR MACK.

A. Elementary Design. *Without academic credit.*
1. Mechanism. *Credit to be arranged.*
2. Machine Elements. *Credit to be arranged.*

MECHANICAL DRAWING

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR.

1. Elements of Drawing. *Three credits.*
2. Elements of Drawing. *Three credits.*
3. Descriptive Geometry. *Three credits.*

APPLIED MECHANICS

ASSISTANT PROFESSOR WITHEY; MR. MILLER.

1. Mechanics of Materials I. *Two credits.*
2. Mechanics of Materials II. *Three credits.*
3. Dynamics. *Two credits.*
4. Materials Laboratory. *Credit to be arranged.*

SHOP WORK

SUPERINTENDENT GODDARD; MR. DABNEY, MR. DORRANS, MR. GABRIEL, MR. PAYTON, MR. SLADKY, MR. ZURIAN.

1. Elementary Pattern Making. *One credit.* Mr. DORRANS.
2. Bench Work in Iron. *One-half credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
3. Elementary Forge Work. *One-half credit.* Mr. ZURIAN, Mr. GABRIEL.
4. Lathe Work in Metals. *One credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.
5. Planing and Milling. *One credit.* Mr. GODDARD, Mr. DABNEY, Mr. SLADKY.

6. Tool Making. *Two credits.* Mr. Goddard, Mr. Dabney, Mr. Sladky.
7. General Shop Work. *Four credits.* Mr. Goddard, Mr. Dabney, Mr. Sladky.
8. Heat Treatment of Steel. *One credit.* Mr. Goddard, Mr. Gabriel.
9. Advanced Pattern Making and Foundry Practice. *One credit.* Mr. Dorrans, Mr. Payton.

STEAM AND GAS ENGINEERING

Associate Professor Thorkelson.

1. Steam Turbines. *One credit.*
2. Gas Engines and Gas Producers. *One credit.*
3. Compressed Air. *One credit.*
4. Heating and Ventilating Lectures. *One credit.*
5. Calibration of laboratory instruments and the determination of the efficiencies. *One credit.*
6. Continuation of course 5 covering more complex types of engines. *One credit.*
7. Refrigeration and Refrigerating Machinery. *One credit.*

SURVEYING

Associate Professor Smith; Mr. Owen, Mr. Parker, Mr. Beebe, Mr. Cutler.

1. Elementary Surveying. *Recitation, M., Tu., W., Th., F.,* 8. *Two credits.* Mr. Owen.
2. Elementary Surveying. *Recitation, M., Tu., W., Th., F.,* 9 *to* 11, *for the first three and a half weeks. Four credits.* Mr. Owen.
3. Advanced Surveying. *Recitation, M., Tu., W., Th., F.,* 9 *to* 11, *for the last two and a half weeks. Three credits.* Mr. Owen.
4. Topographic Drawing and Mapping. *Credit to be arranged.* Mr. Owen.

5. Trigonometric Survey. (Given at Devil's Lake.) Mr. SMITH, Mr. PARKER, Mr. CUTLER.
6. A special course for electrical and mechanical engineering students. *Three credits.* Mr. OWEN.
7. Mining Surveying.

COLLEGE OF AGRICULTURE

AGRICULTURAL BACTERIOLOGY

MR. WRIGHT.

1. Elementary Agricultural Bacteriology. *Lectures, Tu., Th.,* 2:30 *to* 3:30. *Two credits.*

AGRICULTURAL CHEMISTRY

MR. PETERSON.

1. General Agricultural Chemistry. *M., Tu., W., Th., F.,* 9. *Two credits.*
2. Household Chemistry. *M., Tu., W., Th., F.,* 2:30 *to* 4:30. *Two credits.*

AGRICULTURAL EDUCATION

ASSISTANT PROFESSOR HATCH.

1. Agricultural Education. *M., Tu., W., Th., F.,* 4:30. *Two credits.*

AGRICULTURAL ENGINEERING

ASSISTANT PROFESSOR OCOCK.

1. Rural Architecture. *Lectures, M., W.,* 9. *Two credits.*

AGRONOMY

PROFESSOR R. A. MOORE; ASSISTANT PROFESSOR STONE; MR. LEITH.

1. General Outline of Agronomy. *Lectures, M., W., F.,* 11. *Two credits.* MR. MOORE, MR. LEITH.
2. Weed Identification and Seed Inspection. *Lectures, Tu., Th.,* 11. *Two credits.* MR. STONE.

ANIMAL HUSBANDRY

ASSISTANT PROFESSOR FULLER.

1. Elementary Live Stock Judging. *M., Tu., W., Th., F.,* 8 *to* 10. *Two credits.*

DAIRY HUSBANDRY

PROFESSOR FARRINGTON; ASSISTANT PROFESSOR BENKENDORF.

1. Testing and Handling Milk and its Products. *Lectures, Tu., F.,* 10. *Two credits.* MR. FARRINGTON, MR. BENKENDORF.
2. Dairy Practice. *Hours to be arranged. One credit for each forty-eight hours of work.* MR. BENKENDORF.

FARM MANAGEMENT

PROFESSOR OTIS.

1. Traveling Field Course. *Credit according to work done.*

HOME ECONOMICS

MISS HOPE, MISS LOOMIS, MISS TURNER.

1. Foods. *Lectures, Tu., Th.,* 9. *Two credits.* MISS LOOMIS.
2. Economic Problems of Food Supply. *Lectures, Tu., Th.,* 8. *Two credits.* MISS LOOMIS.
3. Textiles. *Lectures, Tu., Th.,* 2:30. *Two credits.* MISS TURNER.
4. Theory of Design. *Lectures, M., W.,* 8. *Two credits.* MISS HOPE.
5. Applied 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. *M., W., F.,* 10; *Tu., Th.,* 2:30. *Two credits.*
2. Elementary Soils. *M., W., F.,* 8 *to* 10; *Tu., Th.,* 10 *to* 12. *Two credits.*

LAW SCHOOL

PROFESSORS GILMORE, HALL (University of Chicago), KEEDY (Northwestern University), RICHARDS, SMITH; MR. RUNDELL.

FIRST YEAR

Contracts. *Eight hours a week for ten weeks. Five and one-third credits.* Mr. SMITH.

Torts. *Four hours a week for ten weeks. Two and two-third credits.* Mr. GILMORE.

SECOND AND THIRD YEARS

Bankruptcy. *Eight hours a week for first five weeks. Two and two-third credits.* Mr. KEEDY.

Constitutional Law. *Eight hours a week for second five weeks. Two and two-third credits.* Mr. HALL.

Damages. *Eight hours a week for first five weeks. Two and two-third credits.* Mr. RICHARDS.

Public Officers. *Four hours a week for ten weeks. Two and two-third credits.* Mr. GILMORE.

Wills. *Eight hours a week for the second five weeks. Two and two-third credits.* Mr. RUNDELL.

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, which includes all members of the instructional staff of the University in

charge of graduate courses, acts as an adviser upon questions of general policy.

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 everywhere 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 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 re-appointment 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 fellow 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.

Teaching Fellowships

For the promotion of educational efficiency, the Regents of the University have established in addition to the University Fellowships above described six Teaching Fellowships, which are to be filled annually upon nomination made by the Committee for the Training of Teachers. The holders of these fellowships devote one-half year to special graduate study within the University and one-half year to apprenticeship teaching, under supervision, in a "co-operating high school." For the latter service a payment of $125 is made in addition to the stipend of $250 attached to the fellowship.

For further details concerning these teaching fellowships application may be made to the Director of the Course for the Training of Teachers.

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 Language 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 two 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 522.)

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 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. dgree 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 definiteness 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 his 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 eligibile 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 advance 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. 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 general characteristics they must become familiar, 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 Director of the Graduate School 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 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 give 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 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 1911–12, giving detailed information concerning the school, may be obtained upon application to the Registrar of the University.

DEGREES

CONFERRED ON COMMENCEMENT DAY, 1910

COLLEGE OF LETTERS AND SCIENCE

Bachelor of Arts

Eveline Patience Abbott
Margaret Hutton Abels
*Florence Amelia Adams
Jessie Allen
Mary Louisa Allen
Calla Adelaide Andrus
Angela Josephine Anthony
Monte Fiore Appell
Marion John Atwood
Floyd Douglas Bailey
Oscar W. Baird
Mary Regina Barry
Walter Scott Bartlett
Leslie Andrew Bechtel
Benjamin Sanford Beecher
Roger Collins Bigford
Marion Orpha Bissell
Milton Johnston Blair
Matilda Clara Bodden
Elizabeth Vera Borgman
Amy Goodrich Bosson
Ann Helen Bradford
Harry McPherson Brandel
Fredolia Eugenia Brandt
Eva Mae Brasure
Lillian Breitenstein
*John Dwight Brewer
Julia Louise Clarke Brookins
Elizabeth Brown
Ethel Lockwood Budd
Elsie Rea Bullard
Kenneth Farwell Burgess
Anna Isabel Butler
*Jane H. Butt
Catherine Berenice Byrne
Marie A. Carey
Fanny Walbridge Carter
Caroline Marie Cary
Agnes Challoner
Guok-Tsai Chao
Leta Lucile Chaplin
Blanche Lina Christensen
Harry John Christoffers
Vinnie Belle Clark
*Esther Gertrude Cochrane
Herbert Clinton Coleman
Belva Naomi Cooper
Elizabeth Frances Corbett
Doris Hartman Crumpton
Lulu Edna Dahl
Avrina Bernice Davis
Helen Emma Davis
Alice Pearl Dinan
Ethelyn Anna Doe
Zita Veronica Donahoe
Katherine Agnes Donovan
Francis Ryan Duffy
Margaret Durbin
Frances Wilson Durbrow
Clara Amelia Ellsworth
Emily Warren Elmore
Helen Marie Fitch
Julia Louise Flett
*Frieda Fligelman

* Degree conferred since Commencement, 1910.

*John Frederick Fowler
Courtney Dodge Freeman
Nellie Catherine Frost
Edith Fuhrman
Herbert Spencer Gasser
Bertha May Gesell
Robert Albert Gesell
Denton Loring Geyer
Genevieve English Gorst
Lola May Graves
William Henry Green
*Eunice Genevieve Greene
Grace Margaret Griffin
Clinton Dudley Griswold
Lyda Leah Gross
†Friedrich Arthur Hamann
David Scott Hanchett
Elizabeth Brewster Harkness
Hugh Allen Harper
Lorraine Hartman
Margaret H'Doubler
John Ronald Heddle
John Louis Hensey
Hugo Henry Hering
*Irving John Hewitt
*Hazel C. Hildebrand
Laura Frances Hill
Lillie Caroline Hilpertshauser
Carolyn Harrison Hoefer
Grace Elizabeth Hofstetter
Lisle Johnson Hollister
Earle Stafford Holman
Carl Hookstadt
Osborne Edward Hooley
*Mary Wright Hopkins
Alice Albert Hoskin
Ralph Melvin Hoyt
*Edna Mae Hughes
Helen Katherine Hunter
Ethel Alice Hurn
Helen Hutchison
Robert John Jensen
Agnes Learned Johnson
Myrtle Edith Jones
Sara Bennett Jones
Frank Edward Karges
Mabel Josephine Kasiska
Gertrude Claire Kennedy
Samuel Kerr, Jr.
Meta Catherine Kieckhefer
Alta Ester Kindschi
Jeanne Mabel Kirwan
Ada Viola Leach
Alexander John Le Grand
Florence Lentzner
Martha Ellen Lewis
Christina Catherine Lins
George Burton Luhmann
Gertrude Louise Lukes
Margaret Blanche Lyle
Vila Erna McComb
Philip Walter MacDonald
Mary Rose McKee
Florence Edna McRae
†Olive Dorothy Maher
Martina Marsh
*Edward Joseph Mathie
Selma Victoria Matson
Amy Katherine Meier
Clifford Cyrille Meloche
William Joseph Meuer
Helen Mighell
Paul Gerard Miller
*Anton Minsart
Frank Theodore Morgan
Paul Joseph Morris
Ralph Newton Morrison
Vivian Mowry
George John Mueller
Herman C. P. Mueller
Hope Downs Munson
Eva Iola Murley
Pauline Murphy
Carl Francis Naffz
Carolyn Loraine Nash
Harry Clifford Northrop
Helen Frances O'Laughlin
Kenneth Gerhard Olsen
Yet C. Owyang
Pearl Carloyn Padley
George Leo Peltier
Selig Perlman
Janet Pfeifer
Mabel Frances Pomeroy
Kathryn Elizabeth Prescott
Gladys Eva Priest

* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

Susanna Josephine Quale
Lewis James Quinn
Helen Mar Ranson
Una Lee Reardon
Mary Elizabeth Reid
Erna Caroline Reinking
Lillian Araminta Remsburg
Edith Louise Rettig
Pearl Ethel Richardson
*Barbara Ruby Ripley
Florence Roach
Florence Roehm
Cora Josephine Rohn
Edna Arlisle Roloff
Taylor Eutropius Ruby
Frances Ruedebusch
Gretchen Ruedebusch
Violet St. Sure
Jesse Charles Saemann
*Alexander Felix Samuels
Jessie Gertrude Schindler
Cora Virginia Schneider
Francis Albert Schnuchel
Mathilde Christine Schoenmann
Konrad Foeste Schreier
Margaret Mary Schuler
Beatrice Eugenia Seaver
Gertrude Sellery
Frank John Shannon
Edith May Shatto
Ethel Reba Shatto
Margaret Shelton
Irene Etta Shenkenberg
Anna Shepard
Clara Marie Sherwood
Lena May Shiels
*John Sharp Skinner
Beulah Evelyn Smith
Diana Henryetta Sperle
*Woodhull Irwin Spitler
Alice Adelle Sprecher
Elinor Stephens
Hazel Azubah Straight
Carl Bernhard Straube
Marjorie Gundry Strong
Ada Elizabeth Swenson
Thorborg Swenson
Maud Swett
Charles Homer Talbot
Clara Isabell Taylor
Ethel Rose Taylor
Mary Katherine Taylor
Clara Jennette Terry
Jessie Clare Terry
*James Stacy Thompson
Lucy Bell Thompson
Sarah Ellen Thrasher
Earle Edwin Tiffany
Mary Regina Tormey
Katherine True
Chu Tung Tsai
Florence Stella Two
Ethel Lavonne Walbridge
Margaret Julia Waters
*George Locke Watson
Leslie Bryant Weed
†Earl Harold Wells
Lucy Welsh
Harlan Meritt Whisman
Anna Frances Wjlliams
Frank Ernest Williams
Erma Louise Wohlenberg
George Paul Wolf
Grace Lavergne Wood
Mary Ruth Woodard
George Edmund Worthington
Mary Louise Wright
Raymond Theodore Zillmer
Herbert Frederick Zimmerman
Lillian Grace Zimmerman
Walter Webster Zuehlke

Course in Commerce

Harold Leroy Bickel
†Frederick George Brown
George Thomas Bulfin
James Riketson Coleman
Stanley Chandler Coward
John Huss Curtis
Cyril Earl Davey
John Fabian Egan
Harry Martin Fuley
Marvin Everett Gantz

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* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

Almeron James Hardy
Edward Frank Henke
Herbert Edward Jacobs
Hugh Clancy Jamieson
Moses Amos Jencks
Henry Walter John
Amos Jefferson King
Lloyd Lamb
Arthur Samuel Langmas
*Sumner Hurst Lloyd
Harold Edwin Logan
George Harold Mills
Charles Mott Nash
*Henry Kollock Pratt
*Earl Pryor
Alfred Prinz
*Earl William Quirk
Jefferson Allan Simpson
Benjamin Franklin Springer
John Edward Trelevan
Earl Sydney Weber
Frederick Joseph Weld
John Woodworth Wilce

Bachelor of Philosophy

Robert Warren Adams
William Oscar Blanchard
Ruth Adaline Bump
Georgiana Irene Clark
Harold Eugene Culver
William Henri Eller
Alice Julia Ellinwood
Hazel Elizabeth Farrington
Mrytle Anna Farrington
Marcella Foley
William David Fuller
Roseanna Gray
William Alexander Gray
Donald David Grindell
Alice Katherine Hanrahan
Bertha Diana Kleckner
Emma Lydia Kreutz
Lela Annette McClatchie
Nellie Dexter Morey
Otto Frederick Musschl
Frank Lewis Olson
Laura J. Phillips
*Agner Groves Storie
David Lester Swartz
*Richard Benjamin Thiel
Oliver Roman Weinandy

Bachelor of Science, Medical Science Course

Louis William Allard
Albert August Axley
Harry Culver
*Rush Clayton Godfrey
†Arthur Charles Kissling
Frank Charles William Konrad
John Robert Newman
Marius Smith Peterson
Maurice Leonard Richardson
Clyde Hadrian Tearnan
Raymond Arthur Tearnan

Bachelor of Science, Chemistry Course

*Alfred Nelson Budd
Abel Ralph Bugbee
Lothar Hofmann
John Xavier Neumann
Herman Roehling
Henry August Schuette

Bachelor of Science, Pharmacy Course

Walter Myron Atwood
G. Archibald Russell
Jasper Edgar Simons

* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

Graduate in Pharmacy

Walter Clement Burns
Walter Edmund Cleophas
Ray Otto Fischer
Harvey Oliver Gray
Jennings Howe Jordan
Elmer August Lorch
Isaac Nelson Lovejoy
Arthur Frank Netzel
†Lawrence Peter Peterson
Louis DeWitt Stephenson
Gilman Llewellyn Stordock

COLLEGE OF ENGINEERING

Bachelor of Science

CIVIL ENGINEERING COURSE

Charles Lynn Bartlett
Phineas Welles Beasley
Arthur Earl Bennett
Leonard Francis Boon
Henry Bucher
Walter Gaynor Caldwell
George Willard Chamberlain
Frank Cnare
Percy Hiram Daniels
Louis Samson Davis
Edmund Anthony Fretz
Alexander Falk Gilman
Hiram Eugene Gingrich
Elmer Lamont Hain
Sidney Phillips Hall
Albert Lewis Hambrecht
Lewis Merrick Hammond
William Henry Hinn
Frank Artemas Hitchcock
Frederick Clarence Horneffer
Robert Iakisch
Charles Edward Jones
William August Klinger
August Emil Kringel
John Frank Lidral
Arthur Louis Luedke
Oswald Lupinski
Oscar William Melin
Abraham Lee Merkin
Lora Walter Miller
Archibald Whitfield Nance
Norman T. Olson
John Alexander Pierce
George Octave Plamondon
Robert Earl Robertson
Wallace Alexander Robinson
John Neal Roherty
Frank Valentine Sherburne
*Kemper Slidell
Frank Carlton Thiessen
Edward Boyington Tourtellot
*Claud Linn Van Auken
*William Owen Van Loon
Karl Edward Wagner
John Howard Waite
Clarence Forbes Watson
Raymond Philip Weidenfeller
William John Wetzel
William Henry Witt
*Felix Stephen Zeidelhack

MECHANICAL ENGINEERING COURSE

*Carlton Harrison Allen
Clark Clinton Boardman
Ralph Edmund Doherty
Clioffrd Fuller
Edward Peck Gleason
George Abbott Glick
Paul Swan Godfrey
Edward Louis Kastler
Frederick Hewitt Linley
Hugh Earl Murray
Amos Cleveland Pearsall
Richard August Ruedebusch
Arthur Fred Schultz
Ivan Herbert Spoor

* Degree conferred since Commencement, 1910
† Degree conferred March 2, 1910.

Guy Harold Suhs
Reuben Nicholas Trane
Dean Miller Workman

ELECTRICAL ENGINEERING COURSE

Arno Louis Ballschmider
Charles James Belsky
Bernard Joseph Benjamin Berssenbruggee
George Barnes Blake
Harry Lockwood Budd
George G. Crowell
Edwin Ford Curtiss
Frederick William Dietrich
Leo Armand Fretz
*Robert Alexander Fucik
Arthur Norman Geyer
Leo Edgar Gibson
Herbert Harvey Gittschall
Alvin John Kohn
Wilmar Francis Lent
Henry Herbert Magdsick
Alvin Edward Meinicke
Herbert Joseph Newman
Charles Bennett Nuti
Andrew Newton Outzen
Arthur Albert Pergande
Elwood Arthur Richardson
Linwood Thomas Richardson
William Charles Frederick Rohde
Walter George Schneider
Paul Herman Siefert
*Alexander Theodore Sjoblom
Ellis Dayre Stillwell
Henry Anton Sumnicht
Frank Vivian Wedlock
John Thomas Welsh

GENERAL ENGINEERING COURSE

Ralph Rogers Birchard
Lewis Leon Chapman
*Gordon Sands Falk
Stephen Gilman
Nicholas James Kayser
Edward Hollis Keator
†Ira Frederick Pettibone
Walter William Petrie
Harry E. Pulver
Robert Lewis Rote
John Gribble Trewartha

CHEMICAL ENGINEERING COURSE

Walter Cooper Andrews
Benjamin Floyd Bennett
Arthur Benjamin Chadwick, Jr.
Raymond Clarence Downing
Walter Biersach Schulte
Oliver Wendell Storey

MINING ENGINEERING COURSE

Harold Lee Welsh

GRADUATES OF ADVANCED ENGINEERING COURSES

CIVIL ENGINEER

Frederic Christian Henke
George John Kruell
George Clarke Merrell
James Charles Pinney

ELECTRICAL ENGINEER

*Henry Hill Force

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*Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

COLLEGE OF AGRICULTURE

Bachelor of Science (Agriculture)

Gustav Henry Benkendorf
*Edwin Eugene Burke
Edward Sanford Charles
Burton Lamont Cramton
George Harold Dacy
*Theodore John Dunnewald
Vida Rachel French
Arthur Joseph Gafke
Jose Gaston
Lawrence Fredrick Graber
Orren Irving Hickcox
Arthur Henry Kuhlmann
Carlos Arnie Le Clair
Marshall Lewis
Kenneth Jesse Matheson
Donald Ross Mihills
*Oliver Martin Osborne
Burns Oscar Severson
Fred John Sievers
Oscar Sevilla Soriano
Albert Ludwig Thompson
Frank Waite Tillotson

Bachelor of Science (Home Economics Course)

Sarah Augusta Sutherland

Graduate in Agriculture

George Kilian Beyer
Edwin Sidell Billings
Eugene Bosshard
Marvin Edward Jahr
Walter Earl Mueller
John Robert Palfrey
Adolph C. Reineking
Luther Witt Swart

LAW SCHOOL

Bachelor of Laws

Joseph Leon Bednarek, B. A.
George Washington Blanchard, B. A.
Harry Willard Brown
*James Howard Browne
John Joseph Colignon, B. A.
Joseph Daniel Darrow
Archibald Tabor Dean
Fred Wetworth Dohmen, B. A.
Emmett Archybalde Donnelly
*Verne Roberts Edwards
John Patrick Ford
Winfred David Haseltine, B. A.
*Franklin Ernest Jenswold
*Albert Matthew Kelly
†William Dunton Kerr, B. A.
Albert James Lobb, B. A.
Leo Charles Luedke
†Archie McComb
*Albert G. Michelson
*John Bernard Miller
Charles Frank Millmann
†Maurice Morrissey
Walter Bernard Murat
*James Roach Murphy
*Milton Orchard
Rudolph Edward Puchner
Charles Frank Puls
Oscar Rademaker, B. A.
Stephen John Rigney
†Julius Otto Roehl, B. A.
Oliver Samuel Rundell
†Thomas Harry Sanderson
Charles Forster Smith, Jr., B. A.
Frederick Ansel Smith
Charles William Stark, Jr., B. A.
Carl Edward von Steinmetz
*Wildon Forest Whitney

* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

SCHOOL OF MUSIC

Graduate in Music

Gertrude Agnes Dahle
Mary Chisholm Ely
Jessie Rose Mead
Belinda Marie Sanders
Almina Mae Theobald
Ellen Sarah Thrasher

HIGHER DEGREES

Master of Arts

*Mae Belle Allstrand, B. A. (University of Iowa), in German.
Aaron Arkin, B. S. (University of Chicago), in Pharmacology.
Louis Fred Augspurger, B. A. (University of Wisconsin), in Inorganic Chemistry.
Wesley Frost Ayer, B. A. (Beloit College), in English.
Bernice Thornton Banning, B. A. (Brown University), in Greek.
Harry Kendall Bassett, B. S. (Columbia University), in English.
Max A. Becher, B. A. (University of Wisconsin), in Geology.
Grace Beatrice Bewick, Ph. B. (University of Wisconsin), in History.
Irwin Billman, B. L. (Ohio Northern University), in American History.
Raymond Thayer Birge, B. A. (University of Wisconsin), in Physics.
John Donald Black, B. A. (University of Wisconsin), in English.
Carolyn Etta Blackburn, B. A. University of Wisconsin), in Latin.
Paul Gottfrid Bostrom, B. A. (Ystad College), B. D. (Augustana College), in Hebrew.
*Ralph Howard Carr, M. S. (Wooster University), in Chemistry.
Myra Treat Cary, B. A. (University of Wisconsin), in Political Economy.
Lau-Chi Chang, B. A. (Queen's College, Hongkong), in Political Science.
Kungchao Chu, B. A. (Harvard University), in Political Science.
Elizabeth Conrad, B. A. (University of Wisconsin), in French.
Anna Alice Corstvet, B. A. (University of Wisconsin), in European History.
Leslie Leroy Davison, B. A. (University of Colorado), in Political Economy.
Julia Adrienne Doe, B. A. (Bryn Mawr College), in Greek.
Emil Oscar Ellingson, B. S. (St. Olaf's College), in Physical Chemistry.
Robert Walpole Ellis, B. S. (University of South Dakota), in Physiography.
*Albert Frederick Ottomar Germann, M. S. (Indiana University), in Physical Chemistry.
*Walter Oscar Gloyer, B. A. (University of Wisconsin), in Botany.
Edward Martin Greene, B. A. (Harvard University), in Romance Languages.
†Felicie Minna Haberstich, M. A. (Coales College), in French.
Lester Davisson Hammond, B. A. (Indiana University), in Chemistry.

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* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

*Caroline Gestina Holah, B. L. (University of Wisconsin), in Latin.
*Frank Finley Hooper, B. A. (University of Chattanooga), in Mathematics.
Edith Evans Hoyt, B. A. (University of Wisconsin), in English.
John Henry Jordan, Ph. B. (University of Wisconsin), in American History.
Willford Isbell King, B. A. (University of Nebraska), in Political Economy.
Alfred Edward Keonig, B. A. (Manchester College), in Physical Chemistry.
*George Koeppel, M. D. (Illinois Medical College), in German.
Corinne Arline Kraus, B. A. (Milwaukee-Downer College), in German.
William Kunerth, B. A. (University of Wisconsin), in Chemistry.
Arthur Hugo Lambeck, B. A. (University of Wisconsin), in Political Science.
Alice Marie Loomis, B. S. (Kansas Agricultural College), in Agricultural Chemistry.
Eldin Verne Lynn, B. A. (University of Washington), in Chemistry.
Wilbert Lorne MacDonald, B. A. (University College, Toronto), in English.
Charles McKenney, M. A. (Olivet College), in Philosophy.
Anna Magdalene Mashek, B. A. (University of Wisconsin), in English Literature.
*Esther Cook Mohr, B. A. (University of Illinois), in American History.
Elton James Moulton, B. S. (University of Chicago), in Mathematics.
*Carl Ferdinand Nelson, B. A. (University of Wisconsin), in Chemistry.
Harry Sidney Newcomer, B. A. (University of Wisconsin), in Mathematics.
Emily Fratt Owen, B. A. (Smith College), in Spanish.
*Herbert John Plagge, B. S. (Northwestern University), in Physics.
*Paul David Potter, B. A. (University of Wisconsin), in Inorganic Chemistry.
Roberta Estelle Pritchard, B. A. (Fargo College), in Sociology.
Emory Ratcliffe, B. A. (Earlham College), in American History.
†George Rankin Ray, B. A. (University of Wisconsin), in History.
Ward Low Ray, B. A. (University of Oregon), in Chemistry.
Orlan Bertrand Read, Ph. B. (Hillsdale College), in Chemistry.
Edgar Eugene Robinson, B. A. (University of Wisconsin), in American History.
William Alexander Robinson, B. A. (Bowdoin College), in American History.
*Thomas Gladstone Rodgers, B. A. (University of Tennessee), in Mathematics.
Julius Otto Roehl, B. A. (University of Wisconsin), in Political Science.
Florence C. Roehm, B. A. (University of Wisconsin), in Political Science.

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* Degree conferred since Commencement, 1910.
† Degree conferred March 2, 1910.

Johanna Rossberg-Leipnitz, B. A. (University of Wisconsin), in German.
Joseph Walter Rutter, B. A. (University of Wisconsin), in German.
Selma Langenhan Schubring, B. A. (University of Wisconsin), in English Literature.
Queen Lois Shepherd, B. A. (Northwestern University), in Philosophy.
Robert Griffin Sherwood, B. A. (Ripon College), in Physics.
Thomas Marshall Simpson, B. A. (Harvard University), in Mathematics.
*Mary Leslie Spence, B. A. (University of Wisconsin), in English Literature.
Forrester Carroll Stanley, B. S. (Simpson College), in Chemistry.
*Ida Bertha Steyer, in French.
*Mary Stimson, B. A. (Coates College), in Latin.
Leo Francis Tiefenthaler, B. A. (University of Wisconsin), in Political Science.
Shigeru Tomimoto, B. A. (Waseda University), in Political Economy.
*Archibald Wellington Taylor, B. A. (Doane College), in Political Economy.
Ye Tsung Tsur B. A. (Yale University), in Education.
*Harry Roswell Wahl, B. A. (University of Wisconsin), in Anatomy.
Anna Welch, B. S. (Northwestern University), in American History.
Allen Brown West, B. A. (Milton College), in Latin.
Nae Tsung Woo, B. S. (University of California), in Political Economy.
*Ying-yueh Yang, (Imperial Polytechnic), in Political Economy.
Earle Burdett Young, Ph. B. (Coe College), in Physics.
Otto Julius Zobel, B. A. (Ripon College), in Physics.

Master of Science

Andrew Allen Borland, B. S. (Pennsylvania State College), in Dairy Husbandry.
*Joseph C. Curtis, B. S. A., (University of Wisconsin), in Animal Husbandry.
Andrew Grover Du Mez, B. S. (University of Wisconsin), in Plant Chemistry.
Alice Catherine Evans, B. S. (Cornell University), in Bacteriology.
Paul Fusanobu Isobe, B. A. (Indiana University), in Applied Electrochemistry.
David Olson, B. A. (University of Michigan), in Geology.
Alvin Cecil Oosterhuis, B. S. (University of Wisconsin), in Animal Husbandry.
Morris Wilford Richards, B S. (University of Wisconsin), in Horticulture.
Gar A. Roush, B. A. (Indiana University), in Chemical Engineering.
Harry Steenbock, B. S. (University of Wisconsin), in Agricultural Chemistry.
Nellie Antoinette Wakeman, B. S. (University of Wisconsin), in Chemistry.
Philip Henry Wessels, B. S. (Michigan Agricultural College), in Agricultural Chemistry.

*Degree conferred since Commencement, 1910.

Master of Philosophy

*Enoch Burton Gowin, Ph. B. (University of Wisconsin), in Political Economy.

*John Francis Graber, Ph. B. (University of Wisconsin), in English Literature.

Paul Henry Neystrom, Ph. B. (University of Wisconsin), in Education.

*Benjamin Charles B. Tighe, Ph. B. (University of Wisconsin), in Political Science.

Civil Engineer

Floyd Elton Bates, B. S. (University of Wisconsin).
Thesis: Investigation of Secondary Stresses in Bridge Structures.

*John Walter Becker, B. S. (University of Wisconsin).
Thesis: Flow of water in bends.

John Cleaveland Beebe, B. S. (Dartmouth College).
Thesis: Experiments on the Measurement of Air by a Venturi Meter.

John Berg, B. S. (University of Wisconsin).
Thesis: The Adjustment of the Manhattan Bridge Cables.

Arthur Lowell Herrick, B. S. (Dartmouth College).
Thesis: Experiments on the Measurement of Air by a Venturi Meter.

William Nelson Jones, B. S. (University of Wisconsin).
Thesis: Cincinnati Water Works.

Henry Jenness Saunders, B. S. (University of Wisconsin).

Frank Charles Schroeder, B. S. (University of Wisconsin).
Thesis: Mechanical Features of Draw-spans Design of the Machinery for a Plate Girder Bascule Bridge.

George Roscoe Walter, B. S. (University of Wisconsin).
Thesis: The Construction of a Dam Across the Wisconsin River at Kilbourn, Wisconsin.

William Henry Wetzler, B. S. (University of Wisconsin).
Thesis: Sanitary Protection of a Mountain Reservoir.

Mechanical Engineer

Robert William Baily, B. S. (University of Wisconsin).
Thesis: A Special Machine for the Fabrications of Structural Steel, Its Design and Cost of Construction.

Charles Edward Carter, B. S. (University of Wisconsin).
Thesis: A Series of Tests on the Value for Gas Making Purposes of the Introduction of Coal Tar Into the Generator of a Water Gas Machine.

Avon Roberg Nottingham, B. S. (University of Wisconsin).

David Rockwell Sperry, B. S. (University of Wisconsin).
Thesis: A Few Reports Upon Factory Service Systems.

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* Degree conferred since Commencement, 1910.

Frederick Charles Ernst Wessel, B. S. (University of Wisconsin).
Thesis: A Series of Tests on the Value for Gas Making Purposes of the Introduction of Coal Tar Into the Generator of a Water Gas Machine.
Herbert Lucius Whittemore, B. S. (University of Wisconsin).
Thesis: The Strength of Oxyacetylene Welds in Steel.

Electrical Engineer

Marion Deane Cooper, B. S. (University of Wisconsin).
Thesis: Design of Illuminating Installations Using Luminous Tubes.
Henry George Kislingbury, B. S. (University of Wisconsin).
Thesis: The Specific Heat of Superheated Steam.
Arthur Edward Van Hagan, B. S. (University of Wisconsin).
Thesis: Tandem Trunking.

Doctor of Philosophy

Sydney Hobart Ball, B. A. (University of Wisconsin), in Geology, Petrology, and Chemistry.
Thesis: General Geology of Georgetown (Colorado), Quadrangle.
James Miller Breckenridge, M. S. (University of Wisconsin), in Applied Electrochemistry, Inorganic Chemistry, and Physical Chemistry.
Thesis: Calcium Alloys.
*Friedrich Bruns, M. S. (University of Wisconsin), German, German Philology, and Greek.
Thesis: Hebbel und Ludwig: ein Vergleich ihrer Ansichten über des dramas.
Thomas Woodside Bentley Crafer, M. A. (University of Wisconsin), in Sociology, Political Economy, and Political Science.
Thesis: The Administration of Public Poor Relief in Wisconsin and Minnesota—a Comparative Study.
*Charles Baldwin Gates, Ph. M. (University of Wisconsin), in Physical Chemistry, Analytical Chemistry, and Applied Electrochemistry.
Thesis: The Replacement and Solution of Metals in Non-Aqueous Liquids.
*Harold Ripley Hastings, M. A. (Harvard University), in Latin, Greek and Archaeology.
Thesis: On the Relations Between Inscriptions and Sculptured Representations Upon Attic Tombstones.
Francis Todd H'Doubler, M. A. (University of Wisconsin), in Mathematics, Applied Mathematics, and Statistics.
Thesis: On Certain Functional Equations.
Charles Warren Hill, M. A. (University of Wisconsin), in Chemistry, Physical Chemistry, and Applied Electrochemistry.
Thesis: The Separation of the Gadolinium Earths as Stearates.

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* Degree conferred since Commencement, 1910.

David Klein, M. A. (University of Illinois), in Physical Chemistry, Mathematics, Applied Electrochemistry.
Thesis: On the Interaction of Hydrogen Sulphide of Sulphur Dioxide.

*Frederick McAllister, M. A. (Beloit College), in Botany and Chemistry.
Thesis: The Cytology of Convallariaceae.

†James William Putnam, M. A. (Cornell University), in Political Economy, American History, and European History.
Thesis: The Illinois and Michigan Canal, a Study in Economic History.

*Bernadotte Everly Schmitt, B. A. (University of Oxford), in European History, International Law and History of Political Philosophy and History.
Thesis: British Policy and the Execution of the Treaty of Berlin,1878-1887.

Henry Herman Paul Severin, M. A. (University of Wisconsin), in Entomology, Zoology, and Botany.
Thesis: A Study on the Structure of the Egg of the Walking-Stick, Diapher omera femorata, Say and the Biological Significance of the Resemblance of the Phasmid Egg to Seeds.

Edward Steidtmann, M. A. (University of Wisconsin), in Geology, Mineralogy, and Chemistry.
Thesis: The origin of dolomite.

Earle Melvin Terry, M. A. (University of Wisconsin), in Physics, Applied Mathematics, and Electrical Engineering.
Thesis: The effect of temperature on the magnetic properties of electrolytic iron.

Melvin Johnson White, M. A. (University of Wisconsin), in American History, Political Science, European History.
Thesis: The secession movement in the United States, 1847 to 1852.

HONORARY DEGREES

Doctor of Laws

Johann-Heinrich, Graf von Bernstorff, Ambassador Extraordinary and Minister Plenipotentiary to the United States, Washington, D. C.

Doctor of Science

Franklin Hiram King, Agricultural Scientist, Madison, Wisconsin.

Doctor of Letters

Charles Homer Haskins, Dean of the Graduate School of Arts and Sciences, Harvard University, Cambridge, Massachusetts.

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* Degree conferred since Commencement, 1910.
† Degree conferred March, 1910 (as of the class of 1909).

HONORS IN SPECIAL STUDIES

College of Letters and Science

Angela Josephine Anthony, in German.
Thesis: Hauptman as a realist.

Elsie Rea Bullard, in English.
Thesis: A study of the style of Richard Jefferies.

Florence Lentzner, in Latin.
Thesis: Letter writing in antiquity as seen in Cicero's correspondence.

Clifford Cyrille Meloche, in Chemistry.
Thesis: The ferrocyanide method of zinc especially with reference to the influence of lead.

Frances Ruedebusch, in History.
Thesis: The relation of George III to his Parliaments, 1760–1784.

Gretchen Ruedebusch, in German.
Thesis: Theador Storm's treatment of nature.

Jessie Gertrude Schindler, in English.
Thesis: The social philosophy of Thomas Hardy as revealed in some of his novels.

Henry August Schuette, in Chemistry.
Thesis: On the nitrogen content of bacteria as determined by the Hausmann method.

Hazel Azubah Straight, in History.
Thesis: The economic policy of William Huskisson and its effect in the abolition of the colonial mercantile system.

Carl Bernhard Straube, in German.
Thesis: Die sozialen probleme in den romanen von Max Kretzer und Wilhelm von Polenz.

The Law School

Fred Wentworth Dohmen.
Thesis: Conversion of partnership real estate into personalty.

William Dunton Kerr.
Thesis: Classification of revenue and income items of public service corporations for rate-making purposes under state authority.

Julius Otto Roehl.
Thesis: Liability of the employer for the acts of the independent contractor.

Oliver Samuel Rundell.
Thesis: The gift by delivery of a chose in action.

Carl Frederick Gustav Zollmann.
Thesis: Persons of abnormal status as bankrupts.

SUMMARY OF GRADUATES

		1910
Number of first degrees granted, 1854–1910	8,222	513
Present Courses:		
Courses leading to the Degree of Bachelor of Arts, 1904–1910	1,580	274
(Included in the above is the Course in Commerce, 1904–1909, 144; 1910, 33.)		
Course for Normal School Graduates, Ph. B., 1898–1910	323	26
Chemistry Course, B. S., 1909–1910	8	6
Medical Science Course, B. S., 1909–1910	21	11
Pharmacy Course, B. S., 1895–1910	39	3
Pharmacy Course, Ph. G., 1884–1910	271	11
School of Music, M. G., 1898–1910	120	6
Course in Agriculture, B. S., 1878–1910	145	23
Course in Agriculture (Middle Course), Ag. G., 1910	8*	8*
Law Course, LL. B., 1869–1910	1,837	37
Chemical Engineering Course, B. S., 1903–1910	33	6
Civil Engineering Course, B. S., 1873–1910	426	50
Electrical Engineering Course, B. S., 1892–1910	403	31
General Engineering Course, B. S., 1901–1910	92	11
Mechanical Engineering Course, B. S., 1876–1910	292	17
Mining Engineering Course, B. S., 1910	1	1
Courses Discontinued:		
Ancient Classical Course, B. A., 1854–1903	470	
Modern Classical Course, B. L., 1876–1903	548	
English Course, B. L., 1887–1903	458	
Civic Historical Course, B. L., 1893–1903	383	
General Science Course, B. S., 1886–1903	722	

* Not included in the totals.

School of Commerce (B. L., 8; B. S., 1, 1902–1903)	9	
Normal Course, 1865–1868	25	
Metallurgical Engineering Course, B. M. E., 1876–1896	16	
Higher Degrees on Examination, 1875–1910	869	137
Master, 1879–1910	579	97
Engineer, 1879–1910	129	24
Doctor of Philosophy, 1892–1910	161	16

Summary of Degrees

Number of first degrees granted, 1854–1910		8,222
Bachelor of Arts, 1854–1910	2,050	
Bachelor of Philosophy, 1898–1910	323	
Bachelor of Letters, 1876–1903	1,397	
Bachelor of Science, 1873–1910	2,183	
Bachelor of Metallurgical Engineering, 1876–1896	16	
Bachelor of Laws, 1869–1910	1,837	
Graduate in Music, 1898–1910	120	
Graduate in Pharmacy, 1884–1910	271	
Graduate in Agriculture (Middle Course), 1910	8*	
Normal Course, 1865–1868	25	
Higher Degrees on Examination, 1875–1910		869
Master, 1879–1910	579	
Engineer, 1879–1910	129	
Doctor of Philosophy, 1892–1910	161	
Grand total of first and higher degrees granted, 1854–1910		9,091

* Not included in the totals.

STUDENTS

GRADUATES

FELLOWS AND SCHOLARS

Angell, Martin Fuller
M. A., University of Wisconsin, *Delavan*
Honorary Fellow in Physics.

Baker, Oliver Edwin
M. A., Columbia University, *Madison*
Scholar in Agriculture.

Bartholomew, Elbert T.
A. B., Kansas State Normal, *Stockton, Kans.*
Fellow in Botany.

Bird, Francis Henry
M. A., Dartmouth College, *Wellesley Hills, Mass.*
Fellow in Pol'tical Economy.

Carson, William Wallace
M. A., Trinity College, Spartanburg, S. C.
Fellow in American History.

Cotton, William Jacobs
B. A., Ripon College, *Ripon*
Ripon College Scholar.

Cousins, Clarence Edwin
B. A., Tufts College, *Salem, Mass.*
Fellow in Romance Languages.

Curtis, Roy Emerson
M. A., University of Wisconsin, *Madison*
Fellow in Political Science.

Davies, Avrina
B. A., University of Wisconsin, *Dixon, Ill.*
Teaching Fellow in German.

Duffus, William McGlashan
B. A., Leland Stanford Junior University, *Madison*
Scholar in Political Economy.

Fredericks, Leonard H.
B. S., Beloit College, *Beloit*
Beloit College Scholar.

Geyer, Denton Loring
B. A., University of Wisconsin, *Madison*
Scholar in Philosophy.

Goodrich, Grace Gertrude
M. A., Ripon College, *Ripon*
Fellow in Latin.

Greubel, Otto Washington
M. A., University of Wisconsin, *Milwaukee*
Henry Gund Scholar.

Gutsch, Milton Rietow
M. A., University of Wisconsin, *Sheboygan*
Fellow in History.

Harris, Thomas Luther
M. A., Ohio State University, *Waverly, Ill.*
Honorary Fellow in Political Economy.

Haskell, Alice — *Providence, R. I.*
M. A., Columbia University, — Fellow in English.
Hoagland, Henry Elmer — *Prairie City, Ill.*
M. A., University of Illinois, — Fellow in Sociology.
Johnson, Agnes Learned — *Madison*
B. A., University of Wisconsin, — Scholar in Romance Languages.
Johnson, Helen Moore — *Osceola, Mo*
B. A., University of Missouri, — Fellow in Greek.
King, Frederick Alonzo — *Portland, Me.*
B. A., Yale University, — Vogel Fellow.
Lawrence, James Nelson — *Attica, N. Y.*
M. S., Syracuse University, — Fellow in Chemical Engineering.
Lentzner, Florence Ida — *Milwaukee*
B. A., University of Wisconsin, — Teaching Fellow in Latin.
Lewis, Howard Thompson — *Madison*
B. A., Lawrence College, — Scholar in Political Economy.
Lochner, Louis Paul — *Madison*
B. A., University of Wisconsin, — Alumni Fellow in Journalism.
McCauley, George Vest — *Perryville, Mo.*
M. A., University of Wisconsin, — Fellow in Physics.
McCollister, Marcus Sanders — *White Hall, Ill.*
B. S., University of Illinois, — Scholar in Hydraulic Engineering.
Mashek, Anna Magdalene — *La Crosse*
M. A., University of Wisconsin, — Scholar in English.
Meloche, Clifford Cyrille — *Madison*
B. A., University of Wisconsin, — Scholar in Chemistry.
Morgan, Ezra Leunidus — *Bone Gap, Ill.*
B. A., McKendree College, — Scholar in Agriculture.
Newcomer, Harry Sidney — *Madison*
M. A., University of Wisconsin, — Fellow in Mathematics.
North, William Atkinson — *Houston, Tex.*
B. S., University of Illinois, — Fellow in Hydraulic Engineering.
Notz, William Frederick — *Watertown*
Ph. D., University of Wisconsin, — Honorary Fellow in Hebrew and H. Greek.
Phillips, George Christie — *Webster, S. D.*
B. S., South Dakota State College, — Scholar in Electrical Engineering.
Pomeroy, Mabel Frances — *Oconomowoc*
B. A., University of Wisconsin, — Teaching Fellow in Latin.
Price, Lawrence Marsden — *Madison*
M. A., Tufts College, — Fellow in German.
Reardon, Una Lee — *Rhinelander*
B. A., University of Wisconsin, — Teaching Fellow in History.
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B. S., University of Wisconsin,	*Madison.*
Walters, Mary Jennie	Soils.
B. A., State Teachers' College, Ia.,	*Cedar Falls, Ia.*
Wegel, Raymond Lester	Latin.
B. A., Ripon College,	*Fond du Lac.*
Weir, Robert Angus	Physics.
B. A., Ripon College,	*Portage.*
Wendel, Corinne Rosalys	Political Economy.
B. A., Adelphi College,	*Brooklyn, N. Y.*
Werckshagen, Paul Eberhard	English.
M. A., University of Illinois,	*Madison.*
Westcott, James Aaron	German.
B. A., Hillsdale College,	*Waupun.*
White, Frank	Phyiscs.
B. S., University of Wisconsin,	*Madison.*
White, Emma Ruth	Agricultural Engineering.
B. A., Wellesley College,	*Madison.*
Whitford, Alfred Edward	Political Economy.
B. A., University of Chicago,	*Milton.*
	Physics.

Williams, Anna Frances	*Madison.*
B. A., University of Wisconsin,	English.
Williams, Frank Ernest	*Madison.*
B. A., University of Wisconsin,	Geology.
Wing, Herbert, Jr.	*South Dartmouth, Mass.*
B. A., Harvard University,	History.
Wise, Furman Bryant	*Hyman, S. C.*
B. S., Clemson College,	Agronomy.
Witte, Edwin Emil	*Watertown.*
B. A., University of Wisconsin,	European History.
Wodsedalek, Jerry Edward	*Kewaunee.*
Ph. B., University of Wisconsin,	Zoology.
Wood, Lewis Hungerford	*Madison.*
B. S., University of Illinois,	Manual Arts.
Woodhouse, Edward James	*London Bridge, Va.*
B. L., University of Virginia,	History.
Yang, Ying-yueh	*Wusih, China.*
M. A., University of Wisconsin,	Political Economy.
Yocky, F. Milton	*Malvern, Ia.*
B. A., Simpson College,	Political Science.
Young, Charles Edmund	*Madison.*
M. A., University of Wisconsin,	French.
Zobel, Otto Julius	*Ripon.*
M. A., University of Wisconsin,	Physics.

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UNDERGRADUATES

COLLEGE OF LETTERS AND SCIENCE

SENIORS

Abendroth, Harry Gustav Albert	*Milwaukee.*
Albers, Laurinda, Anna t c	*Antigo.*
Allaben, Gerald Randolph m	*Rockford, Ill.*
Allyn, Josephine t c	*Madison.*
Andressohn, John Carl t c	*Milwaukee.*
Ayer, Mary Lucile t c	*Verona.*
Babcock, Hazel t c	*Kasota, Minn.*
Baenen, Harriet Carolyn t c	*Green Bay.*
Bahr, Mabel Lorraine t c	*Milwaukee.*
Barber, Samuel Lyman l	*Madison.*
Bartenbach, Marie Christiana t c	*Ablemans.*
Bass, Everetta Ethel t c	*Montello.*
Batchelor, Roger Putnam	*Milwaukee.*
Becker, Emma Wilhelmina t c	*Monroe.*
Bedwell, Charles William t c	*West De Pere.*
Blackburn, Paul	*Elgin, Ill.*
Blake, Elmer Bingham	*Milwaukee.*
Boettge, Cornelia Louise t c	*Berlin*
Borsack, Karl Kasper	*Fond du Lac.*
Boss, Sophia t c	*Oshkosh.*
Boyd, Stanley Mayo	*Madison.*
Boyd, Ward Franklin	*Marinette.*
Bradley, Otto Franc	*Madison.*
Bredette, Mabelle Claire t c	*Sinsinawa.*
Brennan, Ursula Ann t c	*Fort Dodge, Ia.*
Brereton, Gilbert Elliott m	*Madison.*
Brown, Bernice Stockton	*Delair, N. J.*
Brown, Irving Henry	*Madison.*
Brown, Timothy	*Madison.*
Brunow, Walter Theodore	*Milwaukee.*
Buchen, Walther Albert	*Theresa.*
Buck, Louise Langdon t c	*Plattsburg Barracks, N. Y.*
Buckley, Glenna Catherine t c	*Beloit.*
Burnson, Anga Marie t c	*De Forest.*
Buth, Otto Edward t c	*Hartford.*
Butt, William Edward l	*Woodburn, Ind.*
Byrne, Zelda t c	*Ireton, Ia.*
Carpenter, Florence Melanie t c	*Windsor.*

Carter, Bessie Ann t c	*Madison.*
Carter, Fred Gay t c	*Madison.*
Case, Lucy Ada t c	*West Allis*
Castelloe, Mark Bailey t c	*Prescott*
Chappell, Ruby Belle	*Eau Claire*
Childs, John Lawrence	*Eau Claire*
Clausen, Caroline Louise t c	*Clear Lake, Ia.*
Clemens, Albert Harrison	*Cuba*
Coddington, Charles Spencer	*Madison*
Coe, Laurence Smith l	*Barron*
Collentine, Margaret Loretta t c	*Argyle*
Connor, Helen Melissa	*Marshfield*
Conover, Mary Storer t c	*Hinsdale, Ill.*
Conyne, Norma t c	*Warren, Ill.*
Coon, Frances Catherine t c	*Rhinelander*
Crawford, Harold Nowell	*Milwaukee*
Crosby, Florence Armstrong	*Rhinelander*
Dahl, Marion t c	*Viroqua*
Dahle, Agnes Helene t c	*Mt. Horeb*
Dake, Lawrence Charles	*Sparta*
Damon, Marie Warren t c	*Milwaukee*
Davis, Elizabeth Mary t c	*Madison*
Davison, Margaret Frances t c	*Fox Lake*
Dawson, Charles William	*Lidgerwood, N. D.*
Dayton, Beatrice Marian	*Mason City, Ia.*
Dean, James Philip m	*Madison*
De Boos, Esther Ethel t c	*Madison*
Degeler, Alida t c	*Milwaukee*
Deming, Marian Hazel	*Hammond, Ind.*
Deniston, Luther William	*Madison*
Denslow, Raymond Albert t c	*Madison*
Dexter, Bessie Hoard wls	*Madison*
Didier, Estelle Madaline t c	*Rhinelander*
Doe, Arthur Brittan l	*Milwaukee*
Dorney, John Alexander	*Stevens Point*
Dunwiddie, Grace Sue t c	*Monroe*
Dyke, LeGrande Grandis t c	*Madison*
Eberle, George Jacquinn	*Sheboygan*
Eggener, Mathilda Elsie t c	*Marinette*
Eidmann, Herbert Walter	*Chicago, Ill.*
Ellis, William Henry t c	*Freeport, Ill.*
Emerson, Evelyn t c	*Chippewa Falls*
Erb, Esther Johanna t c	*Appleton*
Eschenburg, Anita May t c	*Chicago, Ill.*
Falk, Victor Sofus m	*Stoughton*
Farrar, Victor John	*Madison*
Farrell, Bess t c	*Sioux City, Ia.*
Ferrar, Kayutah	*Madison*
Fink, Hattie Josephine	*Paris, Tenn.*
Flanagan, David Joseph t c	*Welcome*

Fleek, Belle Louise t c	*Brodhead*
Flint, Alfred Thomas	*Madison*
Foley, Mae Ellen t c	*Manson, Ia.*
Fordyce, Kathryn Margaret t c	*Phillips*
Fox, Leonard Peter t c	*Fond du Lac*
Fox, Lucy Wells t c	*Janesville*
Frankenburger, Dorothy	*Madison*
Frey, Cynthia Probert t c	*Madison*
Frey, Forrest Henry m	*Hartford*
Froggatt, Lillian Mary t c	*Middleton*
Gates, James Roberts l	*Manchester, Ia.*
Gath, Josephine Myrtle t c	*Madison*
Gersbach, Herman Martin	*Madison*
Gillett, Orson Clarke	*Madison*
Gottschalk, Edwin Arthur t c	*Scandinavia*
Graham, Mae Lillian t c	*Madison*
Gulliford, Bessie Gertrude t c	*Oshkosh*
Habermann, Margaret Oria t c	*Lodi*
Habhegger, Margaret Barbara t c	*Watertown*
Haddow, Lovina Lucile	*River Falls*
Haessler, Carl Herman	*Milwaukee*
Halverson, George Peter t c	*Peterson, Minn.*
Hambrecht, Leonore t c	*Madison*
Hambrecht, Lulu Ruth t c	*Madison*
Hames, Anna Margaret t c	*Newburg*
Hannan, Loretto Frances t c	*Milwaukee*
Hansen, Andrew Elmer t c	*Norway, Mich.*
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, Fleurette Sophie t c	*Watertown*
Head, Margaret Louise	*Madison*
Heald, Robert Pinkerton	*Oak Park, Ill.*
Hebbard, Nell t c	*La Crosse*
Heidner, Albion Henry	*West Bend*
Heilman, Lura Fellows	*Evansville, Ind.*
Heilman, Roman August l	*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*
Heuer, Josephine t c	*Madison*
Hildebrand, Eva Mary t c	*Rhinelander*
Hills, Margaret Lois	*Marshfield*
Hoebel, Elsie Anna t c	*Madison*
Hohler, Gertrude Mary t c	*New London*
Holcombe, Florence Ethel t c	*Madison*
Holley, Malynda Curtice t c	*Antigo*
Holmes, Marion Helen	*Milwaukee*

Hood, Helen Amanda t c	*Fairchild*
Houser, Hazel t c	*Mondovi*
Hover, William Tracey	*Denver, Colo.*
Hurn, Herbert Dutton t c	*Oshkosh*
Hyde, William George m	*Racine*
Infante, Lewis Cirila c	*Huraras, Peru*
Jacobs, Hester Antoinette t c	*Oconomowoc*
Jaedecke, Lillian Augusta t c	*Watertown*
James, Ada Frances t c	*Sioux City, Ia.*
James, Mary Elizabeth t c	*Wales*
Johannes, Wilhelmine Henrietta t c	*Milwaukee*
Johnson, Edna Grace t c	*Sioux Falls, S. D.*
Johnson, Justin LeRoy l t c	*Wausau*
Johnson, Laurie Child t c	*Hudson*
Johnson, Lloyd William m	*Augusta*
Jones, Quincy Journey l	*Freeport, Ill.*
Kamantigue, Jacinto Manila	*Imus, Cavite, P. I.*
Kearney, Thomas Matthew, Jr. l	*Racine*
Keats, Marion Caro t c	*Milwaukee*
Kelly, Paul Frederick	*Clinton, Ia.*
Kirch, Annie Bell	*Madison*
Kitchell, Gertrude t c	*Topeka, Kans.*
Kleinschmit, Henry William m	*Oshkosh*
Klug, Clara Maria Elizabeth t c	*Arcadia*
Knapp, Myra Ellenetta	*Bloomington*
Konno, Rokuro Goto	*Iwate, Japan*
Korn, Bernhard Charles t c	*Milwaukee*
Landeck, Else Frieda t c	*Milwaukee*
Lea, Maud Luella t c	*Madison*
Lehmann, Sarah Katherine t c	*Woodland*
Lewis, Caroline Margaret t c	*Madison*
Lewis, Harmon	*Oak Park, Ill.*
Lins, Hilda Margaret t c	*Spring Green*
Longfield, Sara Regina t c	*Madison*
Lord, Frances Marie	*Plano, Ill.*
Lorenz, Jennie t c	*Sheboygan*
MacAdam, Ada Ormsby t c	*Madison*
McClure, Martha Swingley t c	*Mount Morris, Ill.*
McComb, Arlie Mae t c	*Stoughton*
McCrory, Genevieve Mary t c	*Fond du Lac*
McDermaid, Delyle Howard t c	*Rockford, Ill.*
McDonald, James John l	*Centuria*
McDougall, Charlotte t c	*Cedar Rapids, Ia.*
McGregor, Della wls	*St. Paul, Minn.*
McKee, Oliver Philip t c	*Thorp*
McKey, Douglas Francis	*Janesville*
McKinney, Perry Osgood t c	*Janesville*
McMahon, Frank Bartholomew m	*Milwaukee*
Mangan, Esther Caroline	*Bay City*
Manley, Irene Conway	*Beaver Dam*

Mann, Karl Mowry	*Milwaukee*
Martin, Marie Mathilde t c	*Green Bay*
Martin, Marion Elizabeth t c	*Hartford*
Martin, Mary Anne wls	*Madison*
Martin, Patrick Henry l t c	*Fond du Lac*
Martin, Roy t c	*Darlington*
Maxon, Harriet t c	*Milwaukee*
Melick, Alice Marguerite t c	*Dodgeville*
Meloche, Rhea Belle t c	*Madison*
Merk, Fred t c	*Milwaukee*
Mertz, Elfrieda t c	*Madison*
Metcalfe, May Ocea t c	*Benton*
Meyers, Erwin Aaron l	*Evansville*
Mielenz, Nora May t c	*Milwaukee*
Miller, Maude t c	*Madison*
Miller, Walter Baker	*Denver, Colo.*
Mitchell, Ralph Kenneth m	*Milwaukee*
Morgan, Lucy Lovisa wls	*Durand*
Moroney, Kathleen	*Dallas, Tex.*
Morris, Hannah t c	*Dodgeville*
Morris, Harold Hulett	*Madison*
Mosel, Ella Margrette t c	*Madison*
Murray, Mildred Mamie t c	*Clinton*
Nadeau, Oscar Eugene m	*Marinette*
Nelson, Alice Jane t c	*Oconomowoc*
Nelson, Casper Irving	*Madison*
Nelson, Ferne Desire t c	*Oconomowoc*
Ninabuck, William Louis	*Columbus*
Nogle, Frederick Grant	*Mondovi*
Noll, Oscar Jacob l	*Milwaukee*
Norris, Lona Margaret t c	*Rock Valley, Ia.*
Norris, Mary Grace	*Rock Valley, Ia.*
Nuzum, Frank Richard m	*Janesville*
Ochsner, Albert Henry	*Chicago, Ill.*
Odegard, Sager Louis	*Merrill*
Paine, Effie Clarissa t c	*Milwaukee*
Park, Majorie Gertrude t c	*Madison*
Parr, Thad Cassius	*Madison*
Partridge, Elva Edyth t c	*Madison*
Penniston, Laura Maida t c	*Argyle*
Perkins, Louise t c	*Sioux City, Ia.*
Peterson, Mary Sophie	*Kenosha*
Pettijohn, John J.	*Madison*
Pierpont, Mabel t c	*Aurora, Ill.*
Plank, Josephine Adelia	*Oconomowoc*
Porter, Orville Brandon t c	*Madison*
Potts, Jennie Elizabeth t c	*Waupaca*
Quigley, William Joseph m	*Antigo*
Raymond, Alice Helena	*Manitowoc*
Refsell, Oscar Norton t c	*Estherville, Ia.*

Rehfuss, Isidor Louis t c	*La Crosse*
Reichert, Rose Beatrice t c	*Madison*
Reinking, Lillian Antoinette t c	*Baraboo*
Richards, Arch Eldridge	*Geneva, Ill.*
Richards, Elizabeth Lyle t c	*Marmath, N. D.*
Richardson, William Duncan	*Milwaukee*
Ridgway, Grace Gladys mu t c	*Madison*
Rieder, Miriam Edna	*Madison*
Rieder, Rudolf Theodore	*Madison*
Rietow, Anna Kurt	*Sheboygan*
Rockwell, Ethel Theodora t c	*Viola*
Roehm, Norma Rosalie t c	*Ashland*
Roffers, Leone t c	*West De Pere*
Rogers, Dorothy t c	*Milwaukee*
Rogers, Martha Jane	*Dayton, O.*
Rosencranz, Gertrude Amy	*Evansville, Ind.*
Rossberg-Leipnitz, Elizabeth t c	*Milwaukee*
Roy, Basanta Koomar	*Calcutta, India*
Ruble, Jesse Jones l t c	*Platteville*
Rutherford, William Lincoln	*Madison*
Ryan, Teresa Marie t c	*Lodi*
Sagen, Carl William t c	*Centreville, So. Dak.*
Sander, Marie Rachel t c	*West Salem*
Sanders, Mamie Amelia t c	*Madison*
Schladweiler, Katherine t c	*Milwaukee*
Schmidt, Alfred Charles	*Milwaukee*
Schmidt, Irma Nathalie t c	*Wausau*
Schmirler, Theodora Geneva t c	*Boscobel*
Schoenleber, Gretchen B. t c	*Milwaukee*
Schram, Helen Margaret t c	*Madison*
Schranck, Henry Charles, Jr.	*Milwaukee*
Schuh, Matilda Emma t c	*Monroe*
Schulze, Emma Johanna t c	*Portage*
Schuster, Edith Emma t c	*Madison*
Schweppe, Elsa Nona t c	*Medford*
Scribner, Gladys Carrie t 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*
Shattuck, Frances Ermina	*Medford*
Sheafor, Jean Thomas	*Richland Center*
Shipley, George Abram	*Madison*
Sinnen, Anna Ida t c	*Racine*
Sinnen, Emily Ida t c	*Racine*
Slater, Alma May t c	*Escanaba, Mich.*
Smeaton, Luella Belle t c	*Milwaukee*
Smith, Alice Belle	*Wauwatosa*
Smith, Ella Mabel wls	*Oconto*
Smith, Gladys	*Wallace, Idaho*

Smith, Grace Marie t c	*Madison*
Smith, Harry Forsythe t c	*Jacksonport*
Smith, Mabel Marion t c	*Beaver Dam*
Soland, Johanna Grace t c	*Blair*
Sperling, Arthur August t c	*Sheboygan*
Spohn, William Henry l	*Janesville*
Stafford, William Ruben	*Oskaloosa, Ia.*
Stark, Lewis Arthur	*Sun Prairie*
Starr, William	*Eau Claire*
Steele, Martha Maria t c	*Cottage Grove*
Steen, Anna Corrine t c	*Madison*
Stenhouse, Eva t c	*Burlington*
Stephens, James Coldazier	*Baraboo*
Stetler, Pearlie Mae m	*Richland Center*
Stine, Ross Orville	*Bryan, Ohio*
Stitzer, Sibyl 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*
Taylor, Henry Sterling l t c	*Sioux City, Ia.*
Thayer, Oscar Benjamin	*Delafield*
Thayer, Thaxter Crugier t c	*Madison*
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	*Belleville*
Trautman, Bertha t c	*Decatur, Ill.*
Trowbridge, Isadore Maurine t c	*Hayward*
Tucker, Elizabeth t c	*Kewanee, Ill.*
Tuffley, Margaret Louise t c	*Boscobel*
Tufts, Marion Deane	*Sioux Falls, So. Dak.*
Twining, Phoebe Ann	*Monroe*
Tyler, Doris Lovice	*Waupun*
Tyrrell, Bessie Florila t c	*Madison*
Tyrell, Helen Chirstmas t c	*Milwaukee*
Underwood, Alice Browne	*Glencoe, Ill.*
Van Hove, Bertha t c	*Clay Center, Kans.*
Van Vleck, Winifred Anna t c	*Evansville*
Van Vliet, Florence Leotta t c	*Milwaukee*
Vaughan, Fay t c	*Bangor*
Viles, Edith Josephine	*Chippewa Falls*
Vollmer, George Arthur	*Alma*
Walsh, Irene Adelaide t c	*Washburn*
Warden, Charlotte Jane	*Ottumwa, Ia.*
Weaver, Paul John	*Madison*
Weber, Edna Hertha t c	*New Holstein*
Wehmhoff, Gertrude Janet t c	*Burlington*

Weld, Moselle Edna	*Moorhead, Minn.*
Welter, Leslie Longley	*Moorhead, Minn.*
White, Eva Parker t c	*River Falls*
Wiechers, Alma Magdalin t c	*Racine*
Wild, Harry Goetseels	*Milwaukee*
Wilde, Frederick Erdman Jesse t c	*Milwaukee*
Williams, Arthur Joseph m	*Waukesha*
Wilson, Florence May t c	*Kalispell, Mont.*
Winholt, Walter Fritz m	*Chicago, Ill.*
Winter, Coila Maria t c	*Madison*
Winter, Otto Louis	*River Falls*
Wittwer, Herman Louis	*Monticello*
Witwen, Edna Pearl t c	*Baraboo*
Woerner, Lisette Katherine	*Louisville, Ky.*
Wolf, Helen Margaret t c	*Madison*
Worthington, Cordelia Eleanor t c	*Madison*
Worthington, Fred Charles	*Milwaukee*
Wright, Marie Louise t c	*Fort Dodge, Ia.*
Wright, Rowe t c	*Milwaukee*
Yahn, Harold George	*Janesville*
Zellmann, Anna Barbara	*Milwaukee*
Zillmer, Aimee Mary t c	*Milwaukee*

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Course in Commerce

Arpin, Harold Augustus	*Grand Rapids*
Batz, Rupert Joseph	*Sun Prairie*
Cleary, George Edward	*Platteville*
Dohmen, Erwin Joseph	*Milwaukee*
Eierman, Arthur Charles l	*Milwaukee*
Glaseer, Martin Gustave	*Sheboygan*
Green, Robert Dickinson	*Chicago, Ill.*
Hatch, Robert Littlefield	*Madison*
Johns, Charles Lester	*Dodgeville*
Kleinpell, Arthur	*Cassville*
McMillen, Clifford LeRoy	*Fort Atkinson*
O'Malley, Robert Connor	*Madison*
Reyer, Will Cleveland t c	*Colby*
Rohn, Chester Ferdinand	*Milwaukee*
Schacht, Erwin Arthur	*Racine*
Schuetter, Robert Louis	*Appleton*
Schwarting, Alvin Walter	*Milwaukee*
Schwenker, Calvin Floyd	*La Crosse*
Sexton, Charles Richard	*Madison*
Smith, Kenneth Loveland	*City of Mexico, Mexico*
Stephens, Leo Joshua	*La Grange, Ind.*
Stolzenberg, Louis Herman	*Cleveland*
Wilson, Edgar Carpenter	*Wausau*
Zinke, William Herman	*Fond du Lac*

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Course for Normal School Graduates

ApRoberts, Elisabeth	*River Falls*
Baker, Alice	*Boardman*
Bodden, Amanda Marie t c	*Oshkosh*
Conlan, Grace Mary	*Milwaukee*
Corry, Estelle t c	*Marinette*
Doyle, James Harold	*Huron, So. Dak.*
Dunphy, Margaret Katharine t c	*Livermore, Ia.*
Johnson, Ruth Margaret t c	*Omro*
Johnston, Julia Winifred	*Chicago, Ill.*
Judd, Roy Clair	*Endeavor*
Linson, Daisy May	*Columbus, Ind.*
Murphy, Mary Ellen t c	*Superior*
O'Hora, Sarah Estelle t c	*Avoca*
Quackenbush, Elizabeth	*Madison*
Semmelmeyer, Madeline	*Chicago, Ill.*
Shepherd, Roxie Eva Barbara	*Platteville*
Steil, William Nicholas	*Madison*
Vail, Leora	*Benton*
Wadleigh, Matthew Fletcher	*Stevens Point*
Webster, Hattie Edith	*River Falls*
Wright, Katharine Desire	*Marquette, Mich.*

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Course in Chemistry

Bentzen, Frederick Whelpley	*Warrens*
Geidel, Carl Diedrich	*Madison*
Knight, Oliver Drake	*River Falls*
Schreier, John August	*Milwaukee*
Wiese, Otto	*Avoca*

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JUNIORS

Aberg, William John P.	*Shell Lake*
Adams, James Reva	*Madison*
Adler, Sigmund	*Madison*
Albers, Edgar Harvey	*Thiensville*
Allen, Marjorie	*Milwaukee*
Anderson, Alice Theresa	*Abbotsford*
Anderson, Alvin t c	*Windsor*
Anderson, Hans Lloyd	*Hartford*
Anderson, Marion Suzanne t c	*Milwaukee*
Anderson, Ross W.	*Shenandoah, Ia.*
Antes, Madeline Elizabeth t c	*Evansville*
Anthony, Marie Alexia t c	*Milwaukee*
Armbruster, Theresa Marie t c	*River Falls*
Arnsdorf, Henry Gustav	*Eau Claire*
Austin, Edwin Charles	*Wilmette, Ill.*

Axford, Richard Norman t c	*Castlewood, S. D.*
Bagley, Lorna Doone t c	*Madison*
Baird, Edgar Alan	*Clayton*
Ballard, Roger Kingsley	*Indianapolis, Ind.*
Barrett, Maude Truscott t c	*Galena, Ill.*
Batz, Margaret Carmen t c	*Sun Prairie*
Baumgartner, Marie Elizabeth t c	*Lancaster*
Bedford, Edgar William m	*Sheboygan*
Bettinger, Beulah Elizabeth t c	*South Milwaukee*
Bilkey, Henry Edward	*Dodgeville*
Birchard, Ruth t c	*Madison*
Blackburn, Ralph	*Elgin, Ill.*
Blanchard, Pearl Ethel t c	*Colby*
Block, Elmer Royal	*Champaign, Ill.*
Blood, Laura Lillian t c	*Kenosha*
Blust, Harry John	*Sheboygan Falls*
Blythe, Stuart Oakes	*Washington, D. C.*
Boott, Ella Haden t c	*Milton Junction*
Boulware, Judson Powell	*Eminence, Ky.*
Bowen, Robert Linde m	*Oshkosh*
Bradshaw, Ethel Belle t c	*Rockford, Ill.*
Breck, Katherine Maria t c	*Milwaukee*
Breen, Helen Maria t c	*Cedar Rapids, Iowa*
Breitkreuz, Elsa Helen t c	*Wausau*
Brereton, Ruth Virginia t c	*Madison*
Brown, Hazel Ford	*Luverne, Minn.*
Brown, Helen Mariette t c	*Chippewa Falls*
Browne, Fannie Arnetta	*Madison*
Browne, Mary Abigaile	*Madison*
Brundage, Phoebe Farnum t c	*Somonauk, Ill.*
Buhlig, Alma Emma t c	*Chicago, Ill.*
Bunta, Emil m	*Milwaukee*
Burke, Elsie Margaret	*Madison*
Burke, Nelle Ellen t c	*Monroe*
Buss, Flora Emma t c	*Milwaukee*
Carson, Mildred Harriet t c	*Madison*
Case, Gaylord Jones	*Oshkosh*
Cavanaugh, Leo David	*Madison*
Chamberlain, Marie t c	*Phillips*
Chang, Yu Lin	*Foochow, China*
Chave, Ella Bean t c	*Tomahawk*
Cleveland, Clarence Rugg	*Rockford, Ill.*
Cody, Irene Marsh	*Sturgeon Bay*
Coerper, Roland Frederick	*Hartford*
Colignon, Constant Moreaux m	*Sturgeon Bay*
Collins, Edmund Richard	*Racine*
Cook, Lillian Elizabeth w l s	*Park Falls*
Cooper, Harold t c	*Milwaukee*
Cotten, Ruth t c	*Eau Claire*
Crane, Winifred Lucy t c	*Kalispell, Mont.*

Crawford, Willard Goldsworthy	*Mineral Point*
Cunningham, George Roger	*Janesville*
Currie, Constance Mary	*Superior*
Dahl, Alice Idell t c	*Madison*
Daley, Frank Aloysius	*Madison*
Davis, Agnes Hopkins t c	*Madison*
Davis, Florence Hume	*Freeport, N. Y.*
Davis, Irwin Grant m	*Arcadia*
Davis, James E.	*Barneveld*
Deming, Dorothy Femm	*Salem, Ohio*
Deming, Wayne Edgar	*Marshfield*
Dillman, Elsie Emma	*Madison*
Dino, Nicholas, Jr.	*Madison*
Doerflinger, Lillie	*Dunkirk, N. Y.*
Dostal, Bernard Francis t c	*Milwaukee*
Dresbach, Glenn Ward	*Lanark, Ill.*
Durst, Leitha Alice t c	*Monroe*
Ebert, Royal Benjamin t c	*Baraboo*
Eckhardt, George Harold	*Viroqua*
Eckstein, John William	*Muscoda*
Edwards, Henry Patrick	*Dallas, Tex.*
Edwards, Merwin Guy	*Ashland*
Ellis, Cora Pet	*Platteville*
Ellsworth, Sarah Frances t c	*Madison*
Ely, Mary Chisholm mu	*Madison*
Emery, Hazel t c	*Madison*
Evans, Emma Adelaide t c	*Evansville*
Evans, Ellen Sara t c	*Stoughton*
Evans, Russell Argyle	*Alma*
Farnham, Willard Edward	*Wichita, Kans.*
Farquhar, Alice Milne wls	*Chicago, Ill.*
Feldschneider, Erwin William t c	*Watertown*
Ferrar, Kathleen	*Madison*
Finner, Fred Frank t c	*Dodge*
Fitzpatrick, Genevieve Catherine t c	*Ishpeming, Mich.*
Flower, Dorothy wls	*Madison*
Foerster, Henry Robert m	*Milwaukee*
Ford, Stella Eudora	*Madison*
Foster, Fayette Laverne	*Fall River*
Foulkes, Marie Nuzum t c	*Oregon*
Foxwell, Daniel Donato	*Racine*
Frawley, Honora Margaret t c	*Eau Claire*
Frear, Marguerite May	*Madison*
Frey, Noah Joseph	*Madison*
Froehlich, Arno August Carl t c	*Sheboygan*
Fuller, Frank Randall, Jr.	*Madison*
Garling, Else t c	*Mayville*
Geisse, Ruby Antoinette t c	*Madison*
George, Emily Cornelia t c	*Racine*
George, Leo Byron	*Madison*

George, Mable Hamilton t c	*Shullsburg*
Gillen, Edna Florian t c	*Racine*
Gilman, Helen Clare t c	*Mondovi*
Graff, Einar Hagemann	*Madison*
Graham, Mabel Blanche t c	*Red Wing, Minn.*
Grannis, Irving Van Vliet m	*Menomonie*
Gratiot, Mary Anne	*Shullsburg*
Gratz, Mabel Maud t c	*Madison*
Graves, Helen Dorothy t c	*River Forest, Ill.*
Groom, Samuel Burton	*Milwaukee*
Gross, Selma t c	*Merrimac*
Habermann, Beatrice Estella t c	*Lodi*
Habermann, Eugenia Blanche t c	*Lodi*
Haessler, Clara Louise t c	*Milwaukee*
Halbert, Blanche Lodema	*Augusta*
Hall, Mattie Edith t c	*Viroqua*
Hall, Raymond Gilbert	*Madison*
Hanan, Florence Louise t c	*Oregon*
Hanson, Otto Ludwig m	*Chippewa Falls*
Harris, Katherine Genevieve t c	*Chippewa Falls*
Hartley, Marion Belle	*Oshkosh*
Hartwig, Douglas Ferdinand m	*Watertown*
Haukohl, Robert Gustave	*Milwaukee*
Hayden, Gladys Langdon t c	*Milwaukee*
Hayes, Frank Dennis	*Janesville*
Headland, Oscar Bernhardt m	*Madison*
Hecht, Frank Abner, Jr.	*Madison*
Heilman, Raymond Julius	*Oconomowoc*
Heitkamp, George William t c	*Cuba*
Henderson, Georgiana Dorothy t c	*West Allis*
Hennessy, Helen Rockwood	*Sioux City, Ia.*
Hinn, Anna Marie t c	*Fennimore*
Ho, Kim-Tong	*Honolulu, Hawaii*
Hoesly, Frieda Agatha t c	*Monroe*
Hogan, Dana Joseph	*Fond du Lac*
Hollingsworth, Laura Anne t c	*Dubuque, Ia.*
Hook, Maude Persis t c	*South Milwaukee*
Hooper, Lorna t c	*Oshkosh*
Horne, Ella Margaret t c	*La Crosse*
Horner, Chester William	*El Paso, Ill.*
Howard, Edna	*Denver, Colo.*
Howlett, Irving Richard	*Oshkosh*
Hoyer, Theodore Robert	*Madison*
Hoyt, Amy Glorane t c	*Augusta*
Hubbard, Joseph Bradley	*Madison*
Hubbell, Affa t c	*Madison*
Huegel, Fred Julius	*Madison*
Hull, Phoebe Gertrude t c	*Baraboo*
Hunt, Myrtle Mae t c	*Madison*
Hutson, Thomas Ralph	*Madison*

Hyatt, Chauncey Adelbert	*Sheboygan*
Imhoff, Wallace Garretson	*Pittsburg, Pa.*
Jackman, Margaret Jane t c	*Madison*
Jacques, William Henry	*Neillsville*
Jenner, George Herbert Austin	*Madison*
Johnson, Agnes Beatrice t c	*Richland Center*
Johnson, Aline Victoria t c	*Geneseo, Ill.*
Johnson, Laura But'er t c	*Madison*
Johnson, Palmer Oliver t c	*Lakefield, Minn.*
Johnson, Russell Martin m	*Madison*
Jones, Flint H.	*Fond du Lac*
Jones, Margery Vining t c	*Delafield*
Jones, Merritt La Count m	*Wausau*
Jones, Montfort	*Cambria*
Josten, Harriett Margaret Hazel	*La Crosse*
Jungkunz, Ilma De Murska t c	*Freeport, Ill.*
Keithley, Amy	*Peoria, Ill.*
Kirch, Henrietta Ann t c	*Des Moines, Ia.*
Kirch, Iza Barbara	*Madison*
Kitchell, Bertha	*Topeka, Kans.*
Klaus, Florence Katherine t c	*Manchester, Ia.*
Kleinpell, Louise Carolyn t c	*Elkader, Ia.*
Klumb, Marion Elizabeth	*Milwaukee*
Kneeland, Martin Dwelle t c	*Northwood, Ia.*
Knox, Flora Roberts t c	*Milwaukee*
Knudson, Jeanette Louise t c	*Madison*
Koch, Oswald Theodore	*Osceola*
Kolinsky, Pete Charles	*Racine*
König, Selma Sophia t c	*Madison*
Kragh, Stella Marguerite t c	*Madison*
Kremer, Eugene Edward	*Fond du Lac*
Kunz, Fritz	*Freeport, Ill.*
Lake, Earl Garon	*Madison*
Lawton, Sophia Louise t c	*River Forest, Ill.*
Leach, Olive Marion t c	*Sioux Falls, S. D.*
Lenroot, Katharine Fredrica	*Superior*
Levitan, Abe Mortimer	*Madison*
Levitan, Esther	*Madison*
Lewis, John Parish	*Antigo*
Ling, Pyan	*Canton, China*
Little, William Douglas	*Geneva, Ill.*
Loeffler, Oscar Frederick	*Milwaukee*
Loew, Jessie Daisy Ida t c	*Colgate.*
Lucius, Blanche Agnes t c	*Chicago, Ill.*
Luethe, Walter Jacob	*Norwalk*
Lutz, Gertrude Harriet	*Michigan City, Ind.*
McClure, Eleanor Amelia	*New York City*
McConville, Marguerite t c	*Fargo, N. D.*
McCordic, Almer Sheridan	*Zion City, Ill.*
McGee, Brutus Andrew	*Madison*

McGrath, Charles Blair	*Eau Claire*
McKinney, Marian Emma t c	*Saginaw, Mich.*
McLaughlin, Mabel Catherine t c	*Milwaukee*
Mabis, Marie Katherine	*Des Moines, Ia.*
Maclin, Edward Silver	*Madison*
Mangan, Julia Marie	*Bay City*
Mann, Walter Louis	*Lake Benton, Minn.*
Marks, Marie Anna t c	*Madison*
Mauer, Florence Elizabeth t c	*Madison*
Meissner, Harry Victor	*Milwaukee*
Mercer, Joseph David	*Evanston, Ill.*
Miller, Glenn Elmer	*Guthrie Center, Ia.*
Miller, Grace Eugenia t c	*Juda*
Minch, Frances Eva t c	*Madison*
Minster, Charlotte Mae t c	*Milwaukee*
Mitchell, Morris Bockel	*Madison*
Moerke, Rosalind Emilie t c	*Madison*
Moore, Edith t c	*Merrillan*
Moore, Raymond Judson	*Madison*
Moore, Sidney John	*South Milwaukee*
Morley, Laura Hazel t c	*Baraboo*
Morrell, Gladys Leone t c	*Escanaba, Mich.*
Mott, Anna Signa t c	*Decorah, Ia.*
Mueller, Corinne Charlotte t c	*Milwaukee*
Murphy, Clarence Francis	*Elkader, Ia.*
Murphy, Margaret Frances t c	*Clinton, Ia.*
Murray, Frances Josephine t c	*Mattson*
Nash, Leo	*Grand Rapids*
Neitzel, Anna Louise t c	*Watertown*
Nelson, Leonard	*Madison*
Neprud, Carl Alwin	*La Crosse*
Nickerson, Lona Belle t c	*Madison*
Nickerson, Pearl Irene t c	*Madison*
Nickson, Harry Delbert m	*Platteville*
Nuzum, John Weston m	*Janesville*
Oettiker, Florence Stewart t c	*Platteville*
Oliver, Jay Charles	*Morrison, Ill.*
Onsrud, Minnie Christine t c	*Stoughton*
Packard, Edna t c	*Basco*
Parent, Mary t c	*Madison*
Parker, Reed Lynne	*South Bend, Ind.*
Pease, Spencer Adams	*Wauwatosa*
Perkins, Agnes Schindler	*Schreiberhau, Germany*
Perry, Clara Harmon t c	*Milwaukee*
Perry, Elizabeth Dorothy t c	*Davenport, Ia.*
Peterson, Hazel Victoria	*Rice Lake*
Phelps, Harold Frederick	*Madison*
Pierce, Maurice Campbell	*Madison*
Pierson, Merle t c	*Milwaukee*
Piper, Raymond Frank	*Madison*

Pollock, Charles Martin	*Fargo, N. D.*
Pollock, Lorine Martha	*Fargo, N. D.*
Pope, Minnie Henrietta t c	*Madison*
Porter, Anna t c	*East Troy*
Porter, Philip Howe	*Madison*
Potts, Marian Edith wls	*Appleton*
Pratt, Verona Fae	*Oak Park, Ill.*
Pullen, Jones Spencer	*Evansville*
Raetzmann, Hilda Marie t c	*Reedsburg*
Ramsdell, Bailey Edwin t c	*Wausau*
Rau, Edwin Frank t c	*Baraboo*
Rawson, Hazel Arvilla t c	*Portage*
Raymond, Mary Mercer	*Aurora, Ill.*
Reed, Nathan William	*Rosendale*
Reid, Althea Patton	*Luverne, Minn.*
Reilly, Elizabeth Marguerite t c	*Watertown*
Richards, Robert Baker	*Racine*
Richardson, Emma Hanks	*Janesville*
Richmond, Ada Maud t c	*La Crosse*
Richmond, Adam	*South Madison*
Rietz, Walter Hermann m	*Manitowoc*
Rigney, Stephen John	*Madison*
Ringling, Alice Josephine t c	*Madison*
Rissmann, Henriette Louise t c	*Bartlesville, Okla.*
Roberts, George Friday	*Fox Lake*
Roberts, Hazel Isabelle t c	*Milwaukee*
Robinson, Miriam Josephine mu	*Madison*
Rosenkrans, Elizabeth Ruth	*Madison*
Ross, Anne Henriette Elizabeth t c	*Milwaukee*
Rossbach, Clement Astor	*Milwaukee*
Rowley, Alden Bruce	*Madison*
Runzler, Arthur Charles	*Milwaukee*
Salter, Jennie May	*Unity*
Sayle, Florence Mildred	*Milwaukee*
Schauermann, Carl	*Milwaukee*
Schernecker, Eleanor Frances t c	*Sun Prairie*
Schmidt, Otto Henry	*Bloomer*
Schnebly, Ardis t c	*Chicago, Ill.*
Schroeder, Ernest Leonard m	*Clintonville*
Schuldt, Clarence M.	*Platteville*
Schultz, Augusta Frederica	*Westfield, N. Y.*
Schwartz, Nellie Elizabeth t c	*East Troy*
Scofield, Helen Cole t c	*La Crosse*
Scully, Frank Joseph	*Bottineau, N. D.*
Sell, Lucile Iva t c	*Reeseville*
Sell, Marguerite	*Springfield, Ill.*
Sexton, Marie Jeanette t c	*Marshfield*
Shapiro, Lillie t c	*Medford*
Shea, Catherine Mary t c	*Ashland*
Shehan, Dorothea Frances	*Superior*

Sherwood, Henry Lee	*Addison, N. Y.*
Shoop, Bonnie Louise t c	*Streator, Ill.*
Simpson, Olive Mary	*Shullsburg*
Skinner, Margaret Méron t c	*Madison*
Smith, Grace Irene t c	*Stoughton*
Snell, Florence Wells t c	*Madison*
Snyder, Clarendon Sweet t c	*Monroe Center, Ill.*
Somers, Fred Clifford	*Merrill*
Soutar, Richard Gray, Jr.	*Lake Geneva*
Starks, Irene Valanche t c	*Madison*
Stevens, Elbert Crandall t c	*Oak Park, Ill.*
Stevens, Mabelle Emma t c	*Janesville*
Story, Harold Willis	*Milwaukee*
Strong, Marion Ruth t c	*Lake Mills*
Stryker, Mary Seymour	*Joliet, Ill.*
Sullivan, William Kirk	*Oak Park, Ill.*
Sutherland, Gladys t c	*Madison*
Suttle, Lois t c	*Viroqua*
Swerig, Mabel Beatrice t c	*Madison*
Swetting, Florence t c	*Berlin*
Talbot, Minnie Julia t c	*Berlin*
Taylor, Archibald Roger	*Barron*
Thomson, Harold Page	*Cavalier, N. D.*
Todd, Louise Frances	*Dixon, Ill.*
Todd, Ralph Lallaway	*Aurora, Ill.*
Toole, Eben Henry	*Baraboo*
Townsend, De Wayne m	*Oconomowoc*
Truesdell, Helen	*River Falls*
Tschudy, Marianne Helene t c	*Monroe*
Tsu, Wen Shion	*Soochow, China*
Vaas, Marie Herfurth t c	*Madison*
Van Blarcom, Maude Estelle t c	*Fond du Lac*
Vitz, Frank Edward t c	*Plymouth*
Wahl, Natalie Rice	*Madison*
Waite, Jay Davies t c	*Prairie du Sac*
Wakefield, Lois t c	*Milwaukee*
Wambold, Grace Isabelle t c	*Milwaukee*
Washington, Lawrence	*Chicago, Ill.*
Weigen, Anders Johann m	*Sun Prairie*
Wernicke, Carl Frederick Gustav	*Fond du Lac*
Westphal, William Carl t c	*Mayville*
Whelan, Mary Elizabeth t c	*Mondovi*
Whitaker, May Bell t c	*Kenosha*
Wieboldt, Elmer Fredrick	*Chicago, Ill.*
Williamson, Robert Crosier t c	*Beloit*
Winslow, Edith Agnes t c	*Madison*
Wipperman, Elfrieda Hertha	*Shawano*
Wood, Harrison Uriah	*Brandon*
Wuesthoff, William Walter	*Milwaukee*

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Course in Commerce

Babler, William Emil	*Monticello*
Bailey, George Davis	*Madison*
Barth, Eugene Albert	*Port Washington*
Bell, Rae Floyd	*Madison*
Bennett, George Edward	*Lake Geneva*
Biersach, Hugo	*Milwaukee*
Blodgett, Isabel Catherine t c	*Milwaukee*
Boguslawsky, Marc	*Milwaukee*
Bonesteel, Verne Clinton	*Padus*
Braasch, William Karl	*Sheboygan*
Bunin, Nahum Ban	*Stevens Point*
Carpenter, Floyd Goodrich	*Madison*
Chandler, Horace Gilmore	*Ottumwa, Ia.*
Christians, George Fredrick	*Johnson Creek*
Clark, Comillo Adams	*Menomonie*
Crissey, Roy John	*Janesville*
Day, LeRoy Irving	*Lake Geneva*
Diekelmann, Reinhold Julius	*Horicon*
Drewes, Paul Peter	*Fond du Lac*
Frey, Frank Armin	*Milwaukee*
Greenwood, Albert Ernest	*Johnson Creek*
Grell, Walter Henry	*Johnson Creek*
Herron, Elmer Clay	*Platteville*
Hobart, Arthur Thomas	*Batavia, Ill.*
Hoffmann, Carl Richard	*Waupaca*
Howard, Claude Earl	*Kenosha*
Iglehart, Austin W. Smith	*Evansville, Ind.*
Johnson, Alvin Oscar	*Woodville*
Johnson, Carl John	*Madison, S. D.*
Johnson, Margaret t c	*Kokomo, Ind.*
Joslin, Richard Raymond	*Mauston*
Kauffman, Jacob Lorelle	*Madison*
Kiekhoefer, Benjamin Alvin	*Milwaukee*
Kinsman, Thomas Le Roy	*Platteville*
Knauf, Arthur Raymond	*Chilton*
Knorr, Lynn Elmer	*Granton*
Knowlton, Harry Neil	*Madison*
Kuechle, Benno Ernest	*Sheboygan*
Lilly, Lewis	*Madison*
Mapel, Dexter Roundy	*Milwaukee*
Morgan, Thomas Henry	*Madison*
Neprud, Selmer	*Westby*
Norsman, Edgar	*Madison*
Oetking, Frank George	*Sheboygan*
Overholser, Le Roy H.	*Madison*
Paulsen, August Herman	*Chilton*
Pullen, Paul Pike	*Evansville*

Reyer, Edward Gerald	*Colby*
Ruedebusch, Hans Henry	*Mayville*
Sanders, Reginald Edward	*Roberts, Mont.*
Schroeder, Walter Henry	*Manitowoc*
Skinner, Roger Allen	*Brodhead*
Stoppenbach, Frank Emil	*Jefferson*
Torbet, Albert William	*Harbor Springs, Mich.*
Tye, Frank Edward	*West Chicago, Ill.*
Whyte, Malcom Kenneth	*Watertown*
Wilmanns, Arthur John	*Milwaukee*

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Course for Normal School Graduates

Batty, George Miles	*Poynette*
Berg, Marie Bertha Kristine	*Ashland*
Blood, Emma Belle t c	*Oshkosh*
Feuerhak, Martin George	*La Crosse*
Finner, Paul Frederick	*Dodge*
Frye, Margaret	*Highland*
Gibbon, Owen Benjamin	*Rewey*
Haass, Lily Katherine t c	*Pewaukee*
Hainer, Vivian Grey	*Eau Claire*
Harvey, Vinnie	*Platteville*
Hedges, Clair Frank	*Bradford, N. Y.*
Hopkins, Ada	*Madison*
Hudson, Nellie Grace t c	*Boscobel*
Jackson, Elizabeth Brigham t c	*Madison*
King, Annie Elizabeth t c	*De Kalb, Ill.*
Knox, Floyd Horatio	*Milwaukee*
Krienke, Edmund Otto t c	*Stevens Point*
Leister, Henry Clinton	*Menomonee Falls*
Lloyd, Eleanor	*Cambria*
Lundberg, Elva Axelena t c	*De Kalb, Ill.*
McLain, Ernest Seth	*Industry, Ill.*
Melville, Andrew Hutton t c	*Madison*
Phelps, Ella	*Milwaukee*
Plant, Ethel May	*Prentice*
Pratt, Alice Mary t c	*Beaver Dam*
Roberts, Mabel	*Belleville*
Ross, Mildred Sara t c	*Superior*
Schatz, Walter Phillip	*Wayside*
Slagg, William Edgar	*Albion*
Sparks, Loron Darius	*Stevens Point*
Torgerson, Oscar t c	*Ontario*
Uren, Alan t c	*Jonesdale*
Wallin, Zenas Beach	*Eastman*

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Course in Chemistry

Ballance, Nevius Van Dyke	*Madison*
Blair, Walter Ellsworth	*Winona, Minn.*
Cathcart, Charles William	*Madison*
Chaplin, Edgar Lee	*Plymouth*
Crosby, Harold Sutor	*Rhinelander*
Dewey, Leon Henry	*Marshall*
Dickinson, Ray Levi	*La Crosse*
Dvórak, Albert Charles	*Kewaunee*
Hollmeyer, Harry Louis	*Newport, Ky.*
Hoverson, Ethel Madeline	*Milwaukee*
Magill, Donald Groves	*Guadalajara, Mex.*
Miller, Henry George	*Cambria*
Nelson, Victor Emanuel	*Eau Claire*
Pflaum, Walter Otto	*Evansville*
Riley, Donald Harrison Barrett	*Evanston, Ill.*
Roehling, Otto Carl	*Milwaukee*
Seeman, Frank John	*Madison*
Shunk, Fleetwood Eduard	*Menomonee Falls*
Sliwinski, Albert Adolph	*Oconomowoc*
Willman, John James	*Rockford, Ill.*
Witherell, Archie Lee	*Janesville*
Wolfert, Clarke Kryn	*Sheboygan*
Wollin, Andrew Albert	*Oconomowoc*

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SOPHOMORES

Abaly, Winnifred	*Madison*
Abel, Robert	*Baltimore, Md.*
Allison, Albert Fay	*Madison*
Alton, Robert Leslie	*Winnetka, Ill.*
Anderson, Fred	*Dresser Junction*
Anderson, Joseph	*Hartford*
Anderson, Margaret	*Eau Claire*
Anderson, Olga Theresa	*Wilmot, S. D.*
Anderson, Susie May	*Madison*
Andrews, William Henry	*Green Bay*
Arnold, Leah	*Sturgeon Bay*
Aten, Ruth Bernice	*Madison*
Atwood, Grace Ione	*Brodhead*
Aylward, Thomas James	*Green Bay*
Baldauf, Anthony Edward	*Eden*
Bandelin, Meta Christine	*Milwaukee*
Barker, Harold Henry	*Sparta*
Barr, Laurence Marshall	*Chicago, Ill.*
Barsaloux, Elizabeth Roudna	*Mason City, Ia.*
Baskerville, Grace Dilla	*Madison*
Bauman, Walter John	*Monroe*

Baxter, Albert Rodney	*Brodhead*
Beach, Paul Mell	*Racine*
Beath, Stanley Sterling	*Verona*
Bechtel, Anita Else	*Madison*
Becker, Herbert William	*Chicago, Ill.*
Berg, Paul Burnham	*Redfield, S. D.*
Betz, Neven Ottillia	*Fairmont, Minn.*
Birely Esther Mae	*Billings, Mont.*
Blanding, Virgil Lowrie	*Moline, Ill.*
Blodgett, Marion North	*Janesville*
Boardman, Robert Paige	*Oshkosh*
Bonar, Jessie	*Streator, Ill.*
Bonino, Mary Ceceilia	*Hurley*
Bourbeau, Elmore Alfred	*Brooklyn*
Boutin, Francis Charles	*Bayfield*
Bowman, Aleda May	*Sterling, Ill.*
Boyer, Mary Elma	*Fort Dodge, Ia.*
Boyle, Margaret	*Butte, Mont.*
Boynton, Mary Woodward	*Portage*
Bredesen, Inga Martha	*Deerfield*
Bright, George Noyes	*Minneapolis, Minn.*
Brittell, Bessie Vera	*Milwaukee*
Brown, Damon Alonzo	*Spring Green*
Brown, Harlow Blair	*Madison*
Brown, Harry Gilbert	*Madison*
Buech, William Frederick	*Milwaukee*
Buehler, Emil	*Alma*
Buell, Pauline Merry	*Madison*
Bundy, Harry Eugene	*Milwaukee*
Bundy, Nell Reubena	*Eau Claire*
Burke, LeRoy Thomas	*Madison*
Bushfield, Anne May	*Miller, S. D.*
Bussell, Nellie Eileen	*Grand Rapids, Mich.*
Butler, Eleanor Danaher	*Madison*
Byrne, Margaret Jane	*Madison*
Caffyn, Walter Wolf	*Rochester, Ind.*
Cantwell, Grace Servatia	*Madison*
Carey, William Herbert	*Newtonville, Mass.*
Cartier, Morgan Edward	*Ludington, Mich.*
Cary, Harold Per Lee	*Madison*
Casey, Cyrus Ambrose	*Watertown*
Chambers, Charles Carroll	*Madison*
Chapman, Hazel Hortense	*Oshkosh*
Charlton, Charlotte Ruth	*Janesville*
Chesick, Henry Louis	*South Milwaukee*
Chevalier, John Walter	*Clintonville*
Christie, George West	*Milwaukee*
Chu, Chio Ching	*Wusih, China*
Chu, Chin	*Wusih, China*
Chynoweth, Phillips	*Madison*

Clarke, Bruce Walrath	*Augusta*
Clausen, Florence Rosalie	*Washburn*
Clawater, Earl William	*Viroqua*
Clayton, Gertrude Samantha	*Monroe*
Cleveland, Ewart	*Madison*
Coapman, Lillian Emily	*Kilbourn*
Cochems, Stanley Carl	*Sturgeon Bay*
Collins, Irene Margaret	*Madison*
Collins, Ruth Elizabeth	*Davenport, Ia.*
Colton, Mabel Adella	*Sheboygan*
Commons, John Alvin	*Madison*
Connor, Donald Witten	*Marshfield*
Conyne, Marguerite	*Warren, Ill.*
Corley, John Scripps	*Des Moines, Ia.*
Corry, Bernadotte	*Marinette*
Cox, Fannie Edith	*Logansport, Ind.*
Crane, Mildred Collver	*Madison*
Crawford, John Jennings	*Hazel Green*
Crile, Dennis Rider Wood	*Chicago, Ill.*
Croll, Eulalia Hattie	*Manitowoc*
Crowley, Jennie Gertrude	*Madison*
Curschmann, Elsa Maria	*Milwaukee*
Curtiss, Emory Blake	*Davenport, Ia.*
Dallwig, Lydia Irma	*Milwaukee*
Danielson, Hilda Josephine	*Madison*
Davies, John Pugh	*Racine*
Davis, Homer Allan	*La Crosse*
Davis, Norma Jessie	*Evanston, Ill.*
Deming, Helen W.	*Marshfield*
Dickerson, Agnes Woodworth	*Helena, Mont.*
Donovan, Adelaide Veronica	*Madison*
Dreutzer, Genevieve	*Sturgeon Bay*
Duffy, Lina Naomi	*Fond du Lac*
Duncan, Robert Frederick	*Eau Claire*
Dutton, Frederick Gary	*Green Bay*
Dyar, Edna Gerrish	*Madison*
Eagen, Joseph Bernard	*Avoca*
Eberle, Margaret Olivia	*Watertown*
Edwards, Nina Margaret	*Oshkosh*
Eldred, Frank Claude	*Omro*
Ellefson, George Nicholas	*Racine*
Ellman, Frances Catherine	*Madison*
Ely, Dorothy Belle	*Madison*
Erickson, Clarence	*Stoughton*
Etter, Arthur Edward	*Monroe*
Fagerland, Johan Lewis	*Stoughton*
Farley, Mary Margaret	*Madison*
Farnum, Clement Bennett	*Madison*
Fauerbach, Angelica Anne	*Madison*
Faville, Harriet Elizabeth	*Lake Mills*

Ferguson, Lucretia Hinkley	*Buffalo, N. Y.*
Feuling, Ellen Marie	*Madison*
Finney, Nellie Edilla	*Waupun*
Fish, Harriette Hilton	*Milwaukee*
Fliegelman, Belle	*Helena, Mont.*
Ford, Mary Estelle	*Madison*
Foster, Glen Reid	*Clarinda, Ia.*
Fowler, Allan Walter	*Superior*
Franzen, Ella Catherine	*St. Paul, Minn.*
Freund, Carl	*Belvidere, Ill.*
Fuller, Millicent Felice	*Mondovi*
Gale, Ada	*Oregon, Ill.*
Gates, Neva Florence	*Fort Dodge, Ia.*
Geisler, Clara Ellen	*Milwaukee*
Gesell, Carl Franklin	*Tomahawk*
Gilbert, Charles Sherwood	*Burlington, Ia.*
Gill, Gladys Grimshaw	*Mauston*
Gilman, Laura Leonard	*Madison*
Gohdes, Henry Louis	*Wausau*
Gordon, Stanley George	*La Crosse*
Graef, Henry William	*Plymouth*
Greenough, Francis Xavier	*Madison*
Griffith, George Perry	*Chicago, Ill.*
Grimm, Gladys	*Clear Lake, Ia.*
Groff, Eleanore Maria	*Winona, Minn.*
Grotophorst, Carl	*Plain*
Gunderson, Nordahl Osmund	*Stoughton*
Haase, William Frederick	*Marinette*
Habighorst, Leona Marie	*Rice Lake*
Haessler, Herbert Ferdinand	*Milwaukee*
Halbower, Elizabeth Bernice	*Miller, S. D.*
Haley, Camilla Myrtle	*Madison*
Hall, Fred Menzo	*Enid, Okla.*
Hanchett, Russell Churchill	*Madison*
Hanchette, James Harold	*Sioux City, Ia.*
Harker, Melva Delia	*Dodgeville*
Harlin, Wilbur Albert	*South Bend, Ind.*
Harn, Hugh Val	*Mason City, Ia.*
Hartzheim, Lawrence John	*Juneau*
Haven, Albion Rollin	*Stoughton*
Hayes, Agnes Mary	*La Crosse*
Hendrickson, Manville Fritjoff	*Portland, Ore.*
Hetherington, Bonnie	*Madison*
Hettinger, Grace Winifred	*Westfield*
Heyl, Lulu Johanna	*Madison*
Hill, Beulah Elaine	*Hamburg, Ia.*
Hill, Edna Marion	*Madison*
Hinckley, Marguerite Josetta	*Abbotsford*
Hinman, George Wheeler, Jr.	*Winnetka, Ill.*
Holcombe, Helen Lucile	*Milwaukee*

Holman, Evalyn Constance	*Deerfield*
Hopkins, Mary Marguerite	*Madison*
Hornaday, Walter Charles	*Austin, Tex.*
Hotchkiss, Mary Camilla	*Fox Lake*
Hougen, Isabelle Bertine	*Wilmot, S. D.*
Hunt, Harriet Larned	*Fargo, N. D.*
Irvine, Perry Dalber	*Lidgerwood, N. Dak.*
Jackson, Clarence Eccles	*Grand Rapids*
Jacobsen, Inger Amala	*Chicago, Ill.*
James, Sadie	*Wales*
Janisch, Harold Peter	*Waterloo*
Jeffery, Stella Marie	*Monroe*
Jennings, Rhea Mabel	*Necedah*
Jevne, Kadelia Gilbertson mu	*Meridian*
Johnson, Aimee Louise	*Moline, Ill.*
Johnson, Charles Emil Hobart	*Madison*
Johnson, Helen Amanda	*Brodhead*
Johnson, Herbert Theodore	*Crown Point, Ind.*
Johnson, Mary Jane	*Kokomo, Ind.*
Jones, Harry Erwin	*West Salem*
Jones, Isabel Elizabeth	*Madison*
Josiassen, John Simon	*Madison*
Juergens, Hubert Frederick	*Hamburg, N. Y.*
Kabat, Mary Wright	*Reedsville*
Keith, Mabel	*Chicago, Ill.*
Kennicott, Kenneth Boyden	*Luverne, Minn.*
Kessler, Alvin Herman	*Madison*
Kieckhefer, Anna Elizabeth	*Milwaukee*
Kilmer, Eva Marie	*Portage*
Kincaid, Jennie Deane	*Mattoon, Ill.*
King, Esther Josephine	*Waterloo*
Kliefoth, Alfred William	*Madison*
Koch, Vincent William	*Janesville*
Koehsel, Minnie Clara	*Madison*
Kohl, Edwin Phillip	*Marshfield*
Kohler, Bert M.	*Chicago, Ill.*
Kolls, Alfred Conrad	*La Crosse*
Kozda, Adolph Henry	*Manitowoc*
Kuhnen, Arthur Nicholas	*Chicago, Ill.*
Lacey, William Randolph	*Madison*
Lacher, Gilbert Lincoln	*Waukesha*
La Combe, Ina Gertrude	*Green Bay*
Lampert, Harold Milton	*Madison*
Landsberg, Gilbert Lawrence	*Paris, France.*
Lange, Gladys Wilhelmina	*Eau Claire*
Lapham, Olene	*Lake Beulah*
Larkin, Laura Evelyn	*Oconomowoc*
Larson, Veda Belva	*Deerfield*
Leary, Mary Ella	*Madison*
Leavens, Marie Therese	*Milwaukee*

Legler, Rose Magdalen	*Valley Falls, Kans.*
Lewis, Marian	*Milwaukee*
Lewis, Ritchie David	*Sun Prairie*
Lewis, Theodore Gorman	*McFarland*
Li, Soong-dau	*Shanghai, China*
Link, Frances Mary	*Madison*
Linwell, Delia Cenna	*Northwood, N. D.*
Lloyd-Jones, Ralph	*Hillside*
Loetscher, Arnold Edward	*Dubuque, Ia.*
Loos, Lydia Emeline	*Elkhart Lake*
Lott, Alice Mary	*Elmwood, Ill.*
Lucke, Wylda Jay	*Madison*
Lukes, Helen Margaret	*Sioux City, Ia.*
Lund, Mildred Joyce	*Madison*
McCann, Vernie Lucile	*La Crosse*
McGruer, Earl	*Langdon, N. D.*
McKay, John Gordon	*Eau Claire*
McKinney, Maurice Doane	*Janesville*
McMillen, Florence Cynthia	*Fort Atkinson*
McQuown, Norvin	*Madison*
Mahoney, Bessie	*Juneau*
Mahre, Michael Alfred	*Macklin, Sask., Can.*
Mailer, Katharine Margaret	*De Pere*
Malone, Ralph Douglas	*Beaver Dam*
Mansfield, Ethel Amelia	*Milwaukee*
Marek, Frank Benjamin	*Cadotte*
Martin, Kenneth Dion	*Baraboo*
Martin, Marguerite Emma	*Madison*
Martin, Thomas Andrew	*Madison*
Martindale, George Cumberland	*Detroit, Mich.*
Mathys, Erna Henrietta	*Arcadia*
Matts, Mary Ventura	*Verona*
Menne, Frank Raymond	*Eden*
Menzies, Jessie	*Janesville*
Mereness, Elsie May	*Walworth*
Meyer, Mabel Matilda	*Kirkland, Ill.*
Meyer, Morris	*Milwaukee*
Milhaupt, Vera Amalia	*New Holstein*
Miller, Nina Barnes	*Minneapolis, Minn.*
Mitchell, Ellen	*Hillsboro*
Mitchell, Vera	*Hillsboro*
Mittelman, Edward Becker	*Milwaukee*
Moe, Harry Bugge	*McFarland*
Moore, Edith Weiser	*Aurora, Ill.*
Morley, Inez Elizabeth	*Madison*
Morissey, Katherine	*Elkhorn*
Morsbach, Robert Ernest	*Durand*
Muller, Therese Catherine	*Sauk City*
Mullon, Barbara	*Madison*
Mullon, Marjory	*Madison*

Murphy, Peter James	*Madison*
Murphy, Walter Henry	*Elkhorn*
Nevin, Richard Clarence	*Racine*
Newman, Eleanor Adelia	*Milwaukee*
Newman, Elizabeth Laura	*Madison*
Newman, Robert Raymond	*Chicago, Ill.*
Nicolls, Mary Mohr	*Wausau*
Niles, Sarah Isabel	*La Porte, Ind.*
Oates, Arthur Raymond	*Darlington*
Obata, Shigayoshi	*Osaka, Japan*
O'Callaghan, Eleanor Marguerite	*Norway, Mich.*
Oistad, Elmer Nels	*Bayfield*
Olds, Minnie Malinda	*Albany, Ill.*
Olin, Burton Wilson	*Racine*
O'Malley, Agnes Elizabeth	*Madison*
Osborn, Esther Sarah	*Ashland*
Ostrander, George Emmet	*Columbus*
Parmentier, Douglas Merrill	*Green Bay*
Payne, Archer Evans	*Red Oak, Ia.*
Peabody, Arthur Cochrane	*Madison*
Pearce, Jane	*Dodgeville*
Pease, Edna Crystal	*Madison*
Pease, Mary Ennever	*Wauwatosa*
Pence, Nellie Ada	*Madison*
Perky, Laura Esther	*Boise, Idaho*
Petersen, Arnold Richard	*Hudson*
Peterson, Helen Theresa	*Soldiers' Grove*
Petterson, Carl Matthew	*Ephraim*
Pfuderer, Helen Virginia	*Chicago, Ill.*
Pickering, Harold Gregg	*Superior*
Platten, Irene	*Green Bay*
Plumb, Mary Alma	*Fairview, Kans.*
Pollock, Edith Blanche	*Polo, Ill.*
Pond, Ethel Pooley	*Madison*
Post, Jessie	*Madison*
Prees, Reginald Lloyd	*Cambria*
Pressentin, Olga Charlotte	*Madison*
Price, Earl Marvin	*Racine*
Proctor, Roy Harrison	*Madison*
Rannenberg, George Christian	*Chicago, Ill.*
Ravn, Erling Oscar	*Merrill*
Reber, Hugh Jackson	*Madison*
Reed, Charles La Forest	*Oshkosh*
Reek, Alice Kaye	*Walworth*
Rees, Charles C.	*Rochester, Ind.*
Regan, John Hanrahan	*Chippewa Falls*
Reid, Maude Dunlap	*Oconomowoc*
Reif, Eugene	*Prairie du Sac*
Reis, Alvin Carl	*Evansville, Ind.*
Reiser, Robert Mathew	*Madison*

Reiss, Otto Martin	*Sheboygan*
Reuss, Beth Anna	*Sun Prairie*
Reynolds, Dannie Edward	*Cottage Grove*
Rhyner, Oscar	*Oshkosh*
Rice, Ruth Catherine	*Madison*
Rickert, Margaret Bernadine	*Milwaukee*
Riebel, Vera Antoinette	*Chicago, Ill.*
Riley, Thomas Edward	*Altoona, Wis.*
Ring, Avis	*Neillsville*
Robbins, George Hiram	*Milwaukee*
Roloff, Norma	*Madison*
Rose, Milton Edward	*Dubuque, Ia.*
Ross, Evelyn Townsend	*Madison*
Roter, Charles R.	*Parsons, Kans.*
Rudolph, Alice Dorothy	*Canton, S. D.*
Ruka, Emil Albert	*Boscobel*
Ryan, Eunice Veronica	*Lodi*
Ryan, Frederick Hall	*Chippewa Falls*
Ryan, Mary Agnes	*Sun Prairie*
Samp, Edward Joseph	*Cecil*
Savage, John Henry, Jr.	*Prairie du Chien*
Schaeffer, Paul Biglow	*Juda*
Schmid, Calvin Albert	*Cleveland*
Schmidt, Erwin Rudolph	*Arcadia*
Sechler, Josephine Sargent	*Sechlerville*
Seward, Leila Huntington	*Binghampton, N. Y.*
Sexauer, Minnie Catherine	*Belvidere, Ill.*
Shea, Cornelius Phillip	*Sparta*
Shoop, Sidney Allen	*Streator, Ill.*
Sieb, Vera Laurine	*Valparaiso, Ind.*
Siegel, Isaac	*Superior*
Sivyer, Allen Walters	*Milwaukee*
Skavlem, Rebecca Janet	*Stoughton*
Skinner, Richard Manson, Jr.	*Princeton, Ill.*
Slade, Henrietta Sprague	*Hinsdale, Ill.*
Slichter, Sumner Huber	*Madison*
Smith, Harold Elmer	*Milwaukee*
Smith, Warren Frank	*Platte, S. D.*
Sosman, Merrill Clary	*Chillicothe, O.*
Spencer, Marian Louise	*River Forest, Ill.*
Springer, Lew Wallace	*East Las Vegas, N. M.*
Stark, Lila	*Bayfield*
Stason, Edwin Blythe	*Sioux City, Ia.*
Stavrum, Sigvald Asbjorn	*La Crosse*
Steele, Gladys Katherine	*Dixon, Ill.*
Steensland, Lohra	*Madison*
Stein, Clarence Paul	*Milwaukee*
Steketee, Marjorie Cornelia	*Grand Rapids, Mich.*
Stewart, John	*Aurora, Ill.*

Stone, Benjamin De Milt	*Wausau*
Stowell, Leta Grace	*Madison*
Sullivan, Katherine Vilas	*Madison*
Swarthout, Edyth Clare	*La Crosse*
Swartz, Harvey Albert	*Oshkosh*
Syverson, Bion Claude	*Westby*
Taylor, Olivia Jane	*Necedah*
Taylor, William Amory	*Portage*
Thielke, Almond John	*Mayville*
Thompson, Myrtle Eleanor	*Madison*
Thurston, Harold Kasson	*Sparta*
Tolleson, Ailce Marie	*Madison*
Tomlinson, Charles Weldon	*North Chicago, Ill.*
Toomey, Ralph	*Spearfish, S. D.*
Tremaine, Ethel Sarah	*Dept. of Luzon, Manila, P. I.*
Trewyn, Frances Iola	*Palmyra*
Tristram, Robert Dix	*Norwalk, Conn.*
Turner, Glenn Patterson	*Madison*
Twitchell, Edward Chauncey	*Madison*
Uhen, Rudolph	*Burlington*
Urner, Catherine Murphy	*Osage City, Kans.*
Van Slyke, Maie Eleanor	*Madison*
Vaughn, Marjorie Olive	*Delavan*
Vergeront, Glen Wallace	*Madison*
Vergeront, Grace	*Madison*
Vorse, Dorothy	*Des Moines, Ia.*
Wahl, Frederick Rice	*Madison*
Walker, Frances Annis	*Madison*
Waller, Theodore Adolph	*Spring Valley*
Warner, Ella Matilda	*Warrens*
Wattawa, John	*Madison*
Wells, Chester Charles	*Madison*
Werlich, Richard Eugene	*Weston*
Werner, Allan Charles	*La Crosse*
Wertz, Frances Louise	*Forreston, Ill.*
Wheeler, Frances Marie	*East Bloomfield, N. Y.*
Whelan, Paul	*Mondovi*
White, Raymond Baird	*Kansas City, Mo.*
Williams, Caryl Rockwood	*Viroqua*
Williams, Gladys Ruth	*Milwaukee*
Winslow, John Seymour	*Madison*
Wipperman, Valeska Meta	*Shawano*
Withington, Eleanor	*Baraboo*
Woodworth, Margaret Deane	*Sioux Falls, S. D.*
Youngman, Frank Nourse	*Red Granite*
Zee, Ts zun Zoen	*Shanghai, China*
Zollner, Louis Albert	*Indianapolis, Ind.*

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Course in Commerce

Akin, Earle Davis	*Madison*
Allen, Royal Charles	*Portage*
Allyn, Stanley Charles	*Madison*
Barney, Willis Wilder	*Milwaukee*
Bergh, Stephen Tolman	*Madison*
Borgeson, Elmer Martin	*Oconomowoc*
Buggie, Horace Hobart	*Cleveland, O.*
Burhoe, Brainerd Desaix	*Chicago, Ill.*
Burhop, William Henry	*Sheboygan Falls*
Burrow, Herbert Theodore	*Beaver Dam*
Castle, Lewis Gould	*Milwaukee*
Condit, Ralph George	*Rock Elm*
Copeland, Charles Edward	*Jefferson*
Dahm, Everett Francis	*McGregor, Ia.*
Daly, Percifer Charles	*Grand Rapids*
Desing, Arthur Charles	*Elkhorn*
Detienne, Harold David	*Green Bay*
Dietze, Carl Edgar	*Mayville*
Dohr, James Lewis	*Madison*
Doyle, Raphael Morgan	*Mitchell, S. D.*
Draves, Albert William	*Milwaukee*
Durkee, Frederick Daniel	*Oshkosh*
Easthope, Stanley Roy	*Chicago, Ill.*
Ekern, Paul Chester	*Superior*
Ellis, Guy Thomson	*Monroe*
Findeisen, Alvin Louis	*Green Bay*
Frary, Paul Vere	*Chicago, Ill.*
Fukuta, Toshiharu	*Gifushi, Japan*
Galbraith, Victor Arral	*Janesville*
Greenwood, Arthur Stanley	*Lake Mills*
Gronzo, Robert Fred	*Elkhorn*
Groves, Asa Biehl	*Madison*
Hammond, Ralph Perry	*Wauwatosa*
Harris, James Loring	*Elkhorn*
Hilts, Harry Nelson	*Augusta*
Hoskins, Mark Hadley	*Bloomington*
Jones, Donald Lahann	*Burlington*
Kahn, Robert Frank	*Milwaukee*
Kirk, Stanley Butcher	*Kenosha*
Kirk, William Edward	*Madison*
Knauss, Otto Adolph	*Evansville, Ind.*
Kuechenmeister, Hugo	*West Bend*
Lamb, Francis Stewart	*Madison*
Lang, Hal Herman	*Sioux City, Ia.*
Larsen, Archibald John	*La Crosse*
Look, Walter	*Sheboygan*
McBeath, Faye	*Milwaukee*

Medberry, Chauncey Joseph, Jr.	*Fond du Lac*
Moore, Hinman Rayworth	*Joliet, Ill.*
Moore, John Dobner	*La Crosse*
Novak, Frank John	*La Crosse*
Nye, James Gordon	*Madison*
Pease, Edward Mitchell	*Washington, Pa.*
Piper, Leon Charles	*Darien*
Porter, Doric Chipman	*Fontana*
Pritzlaff, John Charles	*Milwaukee*
Reynolds, Preston Alfred	*Madison*
Roberts, William C.	*Shullsburg*
Robinson, Samuel Bennette	*Westfield*
Schatttschneider, Elmer Eric	*De Forest*
Schuster, Daniel Devendorf	*Milwaukee*
Shaffer, Ralph Jay	*Madison*
Sheridan, John Ensign	*Janesville*
Simmons, Lynn Archibald	*Corliss*
Slagsvol, Oscar Trygve	*Eau Claire*
Smith, Leo Charles	*Fort Atkinson*
Speer, Zeno Milton	*Milwaukee*
Steen, Arthur Lewis	*Madison*
Tandberg, Alvin	*Chippewa Falls*
Underwood, Robert Judson	*Fergus Falls, Minn.*
Von Schleinitz Rene	*Milwaukee*
Watts, Howard Manley	*Milwaukee*
Wedlock, Elmer Leroy	*Mineral Point*
Weil, Earl Dave	*Chicago, Ill.*
Wolfe, Arthur Charles	*Streator, Ill.*
Wolford, Harold Ernest	*Danville, Ill.*
Wood, Arthur Bowan	*Fonda, Ia.*
Woodard, Selywn Clarke	*Madison*
Zinke, Arno Louis	*Fond du Lac*

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Course in Chemistry

Barmeier, Floyd Everett	*Warrens*
Bohnson, Van Lorens	*Clinton, Ia.*
Cooke, Raymond Denny	*Eau Claire*
Dana, Bedros	*Boston, Mass.*
Denis, Alphonse Derbigny, Jr.	*Madison*
Duggan, Arthur Jacob	*Bradford, Pa.*
Dyar, Ruth Iva	*Madison*
Echlin, Royl Edmund	*Odanah*
Freiburger, William Howard	*Armor, N. Y.*
Hadfield, William Adrian	*Madison*
Johnston, Angus James	*Oconto*
Jones, Maldwyn Lloyd	*Racine*
McGrath, Raymond Dyer	*Keokuk, Ia.*
Middlekauff Alwood Jacob	*Eau Claire*

Moeschler, Carl Theodore	*Stevens Point*
Roach, James Thomas	*Waterloo*
Spero, Samuel	*Milwaukee*

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FRESHMEN

Adler, John Henry	*Milwaukee*
Alexander, Arthur Hadden	*Wellesley, Mass.*
Ames, Mabel Eleanor	*Minocqua*
Anderson, Charles Thomas	*Washington, Ia.*
Ando, George Ikutari	*Munising, Mich.*
Anderson, Ethel Mary	*Kagawaken, Japan*
Appel, Edward Bellamy	*Huron, S. D.*
Armstrong, Margaret	*Phoenix, Ariz.*
Arnold, Bertha Louise	*Eau Claire*
Arps, Helmuth Fred	*New Holstein*
Astle, Emily Louise	*Momence, Ill.*
Austin, Carl Noyes	*Elkhorn*
Austin, Esther Lavinia	*Eagle River*
Austin, Julia Heaton	*Cleveland, O.*
Auten, Vera	*Eugene, Ore.*
Babcock, Leonard Augustus	*Mt. Horeb*
Babcock, Lucile	*Mason City, Ia.*
Bacharach, Sidney	*Dixon, Ill.*
Bachhuber, Leo John	*Mayville*
Baker, Arthur Earl	*Peoria, Ill.*
Ball, Henrietta Sophia	*La Fayette, Ind.*
Barickman, Robert Irving	*Sreator, Ill.*
Baskerville, Stella Edith	*Madison*
Bassett, Norman Douglas	*Los Angeles, Cal.*
Baum, Ednah Louise	*Morris, Ill.*
Baum, George Kohler	*Kansas City, Mo.*
Bauman, Lily Katharine	*Mendota, Ill.*
Bauschek, John	*Milwaukee*
Bemis, Dorothy	*Oshkosh*
Bemis, Walter Sargent	*New Brighton, N. Y.*
Berger, Lucile Rosalind	*Lander, Wyo.*
Best, Grace Loucks	*Freeport, Ill.*
Billings, Eugene Douglass	*Cobb*
Blatz, Valentine, Jr.	*Milwaukee*
Blim, Charles Hewes	*Crete, Ill.*
Blim, Warren Caldwell	*Crete, Ill.*
Bliss, Hugh Porter	*Madison*
Blodgett, Clara Marie	*Janesville*
Bloomfield, Grover Cleveland	*Chicago, Ill.*
Boelsing, Emilie Anna	*Madison*
Boettcher, Eric August	*Milwaukee*
Bollerud, William	*Hollandale*
Boone, Harold Ward	*Shawano*
Boorman, William Ryland	*Grand Rapids*

Boorse, Arthur Lee	*Milwaukee*
Boorse, Jessica May	*Milwaukee*
Boutwell, Roswell Knight	*Beloit*
Bowen, Myron William	*Richland Center*
Boyd, Charles Elmore	*Marinette*
Bradt, Harlan Hurlbut	*Detroit, Mich.*
Bragg, Kendel Benjamin	*Evanston, Ill.*
Brandt, Tillie Clara	*Milwaukee*
Brant, Charles William	*Madison*
Brayton, Arthur Holmes	*Lyons, Ia.*
Briggs, Allan	*St. Paul, Minn.*
Briggs, Martin Calkins	*St. Paul, Minn.*
Brindley, Benjamin Reed	*La Crosse*
Brossard, Matthew Beunste	*Columbus*
Brown, Hazel Irene	*Madison*
Brown, Mary Storer	*Madison*
Brown, Roscoe Stewart	*Winona, Minn.*
Brundage, Dean Kennedy	*Grand Rapids*
Brunkhorst, Robert Omro	*Milwaukee*
Buckman, Margaret Elsie	*Milwaukee*
Buehler, Edmund	*Alma*
Buehler, John Edwin	*Le Mars, Ia.*
Buell, Mary Van Rensselaer	*Madison*
Burkhardt, Wilbur Neil	*Des Moines, Ia.*
Burnham, Horace Lowell	*Richland Center*
Burrell, John Angus	*Chouteau, Mont.*
Bybuth, Matilda	*Eau Claire*
Calhoun, Crede Haskins	*Columbia City, Ind.*
Cameron, Mary Regina	*Chippewa Falls*
Carpenter, David Dwight	*Chicago, Ill.*
Carr, Walter James	*Milwaukee*
Carus, Gustave Krueger	*La Salle, Ill.*
Case, Harry Judson	*Racine*
Cash, Mary Josephine	*Superior*
Chamberlain, Lutie Anna	*Madison*
Chapin, Margaret Amelia	*Fort Dodge, Ia.*
Cibelius, Charles Anthony	*Racine*
Cohn, Abraham	*Madison*
Colbert, Carter Neville	*Racine*
Congdon, Ferne Lina	*Delavan*
Conover, Frederic Le Roy	*Madison*
Cooper, Inez Beardsley	*Madison*
Craker, Gladys Vivian	*Reedsburg*
Cronin, Katherine Lucile	*Oconomowoc*
Daetsch, Lilian	*Milwaukee*
Daley, Mary Irene	*Menominee, Mich.*
Dallwig, Leon Eugene	*Milwaukee*
David, Jessie Lucile	*Montfort*
Davidson, Grace Lorena	*Madison*

Davies, Marian Lorraine	*Dixon, Ill.*
Davis, Marjory Anna	*Madison*
Dean, Philip Joseph John	*Madison*
Deming, Cora Lucille	*Madison*
Deutsch, Leah Marie Genevieve	*Wausau*
Dickinson, John Moore	*Wabeno*
Dillon, George Edward	*Red Oak, Ia.*
Dittmer, Winfred Cyril	*Seymour*
Dodge, Chester Lyman	*Windsor*
Doege, Karl Herman	*Marshfield*
Dorman, Florence	*Freeport, Ill.*
Dorr, Philip Henry	*Milwaukee*
Doughty, James William	*Elroy*
Douglas, Helen Marr	*Warren, Ill.*
Douglass, James Lee	*Fairchild*
Dudley, Dorothy	*Fond du Lac*
Duke, Marion Margaret	*Madison*
Duquaine, Edward Maximillian	*Green Bay*
Eaton, Mary Sears	*Calumet, Mich.*
Eder, Nathan	*Milwaukee*
Edwards, Anne Elizabeth	*Madison*
Edwards, William Bushnell	*Chicago, Ill.*
Egan, Kenwood	*Manitowoc*
Eggert, Alma Lillian	*Grand Rapids*
Eichenberger, Helen Mary	*Tadamour, O.*
Elkinton, Cecilia	*Winneconne*
Ellis, Ruth	*Ashland*
Erdman, Walter George	*Oshkosh*
Erickson, Burt Leslie	*Marinette*
Evans, Helen Alberta	*Racine*
Faherty, Willis Raymond	*Cuba*
Finke, Almor Henry	*Mt. Horeb*
FitzGibbon, Alice Elizabeth	*Waunakee*
Fleck, Elsie Louise	*West De Pere*
Fleck, William Robert	*Milwaukee*
Flint, Rebecca Punchard	*Madison*
Foley, Eva Winifred	*Baraboo*
Fort, Pauline	*Kansas City, Mo.*
Foster, Bruce Gilbert	*Chicago, Ill.*
Fox, Carolyn	*Madison*
Foxwell, Alice Adele	*Racine*
France, George Bourne	*Des Moines, Ia.*
Frankel, Edward Joe	*Eagle River*
Franz, Carl Loser	*Aurora, Ill.*
Franzen, Walter Otto	*St. Paul, Minn.*
Frautschi, Elizabeth Edna	*Madison*
Frederickson, Edwin Andrew	*South Bend, Ind.*
Frederickson, Jean Fyfe	*Madison*
Free, Nelle	*Anderson, Ind.*

French, Roy La Verne	*Beloit*
Fries, Gyneth Theo	*Richland Center*
Fritsche, Elsa	*New Ulm, Minn.*
Fuller, George Minot	*Exeter, N. H.*
Garst, Goodwin	*Coon Rapids, Ia.*
Gasser, Almond Proctor	*Arcadia*
Gaustad, Sverre	*Eau Claire*
Gehlert, Ervin Edwin	*Menomonee Falls*
Getts, Clarke Hallam	*Chippewa Falls*
Gilbert, John Hopkinson	*Superior*
Gillis, James Peter	*Deerbrook*
Gillis, John Daniel	*Deerbrook*
Gold, John Kedney	*Madison*
Goldsmith, Elmer Le Grand	*Milwaukee*
Grady, Agnes Scanlan	*Madison*
Graff, Marshall Conant	*Elkhorn*
Griffith, Harry B.	*Harlan, Ia.*
Grubb, Clare Marie	*Janesville*
Habermann, Lucius Clement	*Lodi*
Habermann, Victor Emanuel	*Lodi*
Hallam, Arthur Wood	*Sioux City, Ia.*
Hallisey, Loretto Genevieve	*Baraboo*
Hames, Ruth Anna	*Newburg*
Hamilton, Walter Charles	*Westfield*
Harper, Carl Samuel	*Madison*
Harris, James William, Jr.	*Winnetka, Ill.*
Harris, John Wallace	*Waupun*
Harris, Victor Frederick	*Chicago, Ill.*
Harrison, Helen Dorsey	*La Crosse*
Hart, Ray Jeffrey	*Watertown, S. D.*
Harter, Arthur Gilber	*Waukesha*
Hartwig, Harvey Clarence	*Milwaukee*
Harwick, Wearne Edward	*Madison*
Head, Catherine Esther	*Madison*
Head, Jerome Reid	*Madison*
Hedges, Ira McClure	*Culver, Ind.*
Heim, Marie Theresa	*Madison*
Hein, Regina Mary	*Madison*
Heister, Edwin Theodore	*Oak Park, Ill.*
Helm, Elizabeth	*Rockford, Ill.*
Hemmy, Arthur Richard	*Juneau*
Hempel, Kathleen Marguerite	*Elkader, Ia.*
Henderson, Annie Livingston	*Chicago, Ill.*
Henkel, Ernest Guy	*Madison*
Henry, Levi Lithgow	*Wonewoc*
Herreid, Cecelia	*Madison*
Hinkley, Ahira Rockwell	*Milwaukee*
Hinkson, Ora Lucy	*Poynette*
Hodge, Winship Appleton	*Kalamazoo, Mich.*
Hoesley, Olga Marie	*Monroe*

Hollingsworth, Sylvia Adeline	*Dubuque, Ia.*
Houchin, Emanuel Grant	*Pontiac, Ill.*
Hubbard, Bela	*Detroit, Mich.*
Hubbard, Dorothy Rowe	*Madison*
Hubbard, Julia Lombard	*Houghton, Mich.*
Hudson, Margaret Marie	*Madison*
Hyer, James Don	*Waterloo*
Ingersoll, Sarah Blakely	*Denver, Colo.*
Ivey, Marguerite Elizabeth	*Mineral Point*
Jackson, Marjorie Moore	*Madison*
Jacobs, Josephine	*Oconomowoc*
Jandl, Charles	*Racine*
Jeffrey, Earl Munro	*Washington, D. C.*
Jerdin, Viola Daisy	*Madison*
Joannes, Harold Vitalus	*Green Bay*
Johnson, Ethel Helen	*Waupaca*
Johnson, Orra Nason	*Alpena, Mich.*
Johnstone, Edward Knox	*Keokuk, Ia.*
Jolivette, Edna Emma	*La Crosse*
Jolivette, Eva Lou	*La Crosse*
Jones, Ruth	*Iron Mountain, Mich.*
Kading, Earl Christian	*Deer Lodge, Mont.*
Kanouse, Mary	*Madison*
Karcher, Nettie Elizabeth	*Burlington*
Kaumheimer, Frances Julia	*Milwaukee*
Kayser, Helen	*Madison*
Kearney, Jeanette	*Racine*
Kearney, Katharine Louise	*Racine*
Kelley, Charles Frances	*Duluth, Minn.*
Kemper, Emma Lucy	*Butte, Mont.*
Kerman, William Keith	*Macomb, Ill.*
Kerrigan, Marguerite Mary	*Elroy*
Kerwin, George Fred	*Ashland*
Kieckhefer, George Henry	*Milwaukee*
Kimbark, Harry Rice	*Evanston, Ill.*
King, John Dana	*Racine*
Kingdon, Jessie Margaret	*Evansville*
Kinney, Mabel Susan	*Wauwatosa*
Klein, Ruth Catherine	*Dubuque, Ia.*
Kleinheinz, Amelia Victoria	*Madison*
Knuppel, Amanda Augusta	*Appleton*
Koch, Orville Cyrus	*Plymouth*
Koester, George Fred	*Chicago, Ill.*
Koltes, Raphael Peter	*Waunakee*
Kootz, Arthur Carl	*Milwaukee*
Kraus, Glenn Viering	*Marshfield*
Krey, Frank Frederick	*Milwaukee*
Kuenzli, Clarence Raymond	*Milwaukee*
de Laubenfels, Helen	*Burlington, Ia.*

Leary, Mary Cecil	*Madison*
Leenhouts, Frances Elizabeth	*Milwaukee*
Leicht, William Freeman [illegible]las	*New Lisbon*
Lenroot, Dorothy Clough	*Superior*
Lichtenberg, Harry Raymond	*Alta, Ia.*
Light, Arthur Franklin	*Hayward*
Linn, Alexander Toris	*Stoughton*
Listebarger, Hazelle Estelle	*Cedar Rapids, Ia.*
Littlefield, Jesse Grant	*Freeport, Ill.*
Lorenz, Leola Marie	*Madison*
Lovejoy, Carl Rudolph	*Stoughton*
Lovequest, George Howard	*Racine*
McCarthy, Alice Lillian	*Madison*
McCarthy, Glen Elroy	*Madison*
McClenahan, Martha Gillette	*Cedar Rapids, Ia.*
McCormick, John Vincent	*Dodgeville.*
McDougall, Eva Florence	*Whitewater*
McGarty, Kathryn	*Mauston*
McGilvary, Margaret Cornelia	*Madison*
McNeil, Mary Eunice	*Stoughton*
McQuillan, Letitia	*Merrill*
Ma, Minghai	*Chili, China*
Mael, John Olaus	*Mt. Horeb*
Mardfin, Sylvia	*New York City*
Marsh, Carl James	*New Lisbon*
Marshall, Clarence Cole	*Juneau*
Martin, John Edward	*Green Bay*
Mason, Mabelle Verena	*Milwaukee*
Matheson, James	*Elkhorn*
Mattoon, Fred Geele Vaughn	*Sheboygan*
Maurer, Rolland Edward	*Madison*
Maw, Irene Augusta	*Madison*
Maxwell, Melville Edward	*Marinette*
Mayo, Charles Alexander	*Eau Claire*
Mehlig, Lee Percy	*Madison*
Meiklejohn, George Peter	*New London*
Meisekothen, Hildegarde	*Madison*
Melaas, Esther Adella	*Madison*
Meland, Anneva Marie	*Red Wing, Minn.*
Melby, Frida	*Madison*
Meloy, Ann Elizabeth	*Fort Dodge, Ia.*
Mereness, Jessie	*Walworth*
Merkel, Harold Leland	*Milwaukee*
Meuer, Helen Alma	*Madison*
Millard, Arnold Burton	*Antigo*
Millard, Harlow Cuff	*New London*
Miller, Gladys	*Madison*
Miller, Lloyd Dougherty	*Grand Rapids*
Miner, Georgia Willetta	*Clinton*

Miner, Marjorie Rose	*Madison*
Mitchell, Roy Emanuel	*Strathroy, Ont.*
Mohaupt, Arthur George	*Milwaukee*
Mohr, Edna	*Milwaukee*
Mohr, Lloyd H.	*Pierce, Nebr.*
Montgomery, Edmund Brewer	*Quincy, Ill.*
Montgomery, Fredrick Hosmer	*Quincy, Ill.*
Moore, William Ralph	*Batavia, Ill.*
Morgan, Harry Mortineau	*Cadillac, Mich.*
Morley, Fannie Edna	*Baraboo*
Morris, Caroline Ruth	*Oshkosh*
Morrison, Elton Joseph, Jr.	*Chetek*
Morrissey, Henry Sandom	*Edgerton*
Moscrop, Mildred Lucy	*Rockford, Ill.*
Mueller, Alfred	*Markesan*
Murray, Emily Agnes	*Stockton, Ill.*
Myhre, Neena Rebecca	*Madison*
Myrland, Arthur Lucius	*Grantsburg*
Nelson, John Bastian	*Eau Claire*
Newman, Philip Horton	*Chicago, Ill.*
Nickerson, Chester Arthur	*Madison*
Norris, Paul Thomas	*Rock Valley, Ia.*
Norton, Halbert Eli	*Poynette*
O'Brien, Teresa Veronica	*Fond du Lac*
O'Callaghan, Marie Evangeline	*Iron Mountain, Mich.*
O'Connell, John Francis	*Madison*
O'Connor, Deno Francis	*Mt. Horeb*
O'Hara, Bernard Anthony	*Mazomanie*
O'Keefe, Anna Gertrude	*Los Angeles, Cal.*
Olfson, Margaret Jean	*Waupaca*
Olsen, Esther Georgia	*Muskegon, Mich.*
Osann, Dorrit	*Oak Park, Ill.*
Osborne, Llyod Noyes	*Omaha, Nebr.*
Oscar, Elver Ralph	*Stoughton*
Otjen, Christian John	*Milwaukee*
Palmatier, Nelle Frances	*Madison*
Parkinson, Margaret Allen	*Columbus*
Paulsen, Edgar August	*Kiel*
Peck, Mary Elizabeth	*Enid, Okla.*
Pedersen, Erna Sofie	*Racine*
Peebles, Leta Maria	*Shullsburg*
Perry, Charles Stanley	*Wauwatosa*
Perry, Will Esser	*Algoma*
Perstein, Joseph	*Milwaukee*
Peterson, Elsea Gladys	*Sioux Falls, S. D.*
Pfiffner, Harold Ward	*Fairmount, Minn.*
Phillips, Hazel Mae	*Madison*
Pierce, Albert Rideout	*Oshkosh*
Piper, Bessie Arabelle	*Madison*

Piper, Homer Allen	*Madison*
Pollock, Mabel Jeanette	*Polo, Ill.*
Porter, Claude Tillinghast	*Elmhurst, Ill.*
Porter, Monica	*Elkhorn*
Post, Eveline Margaret	*Edgerton*
Post, Luella Alice	*Edgerton*
Poston, Virgil	*Bonne Terre, Mo.*
Powell, Walter Daniel	*Reedsburg*
Pringle, Dorothy Claire	*Marengo, Ill.*
Proudfit, Elizabeth Ford	*Madison*
Purcell, Mary Ellen	*Madison*
Radford, Edward Parish	*Oshkosh*
Raymond, Lydia Burrell	*Aurora, Ill.*
Reavey, Edward Patrick	*Soperton*
Reid, Lucien Taylor	*La Crosse*
Reinhold, Louis Frederick	*Freeport, Ill.*
Richards, Ella Alfraetta	*Mineral Point*
Richards, John Stanley	*Madison*
Richardson, Lemont Hunter	*Sheboygan Falls*
Rintelman, Clara Augusta	*Milwaukee*
Robinson, Byron Lewis	*Oconomowoc*
Roeseler, Oscar Edwin	*Madison*
Rogers, Maurice Pearse	*Oak Park, Ill.*
Romanosky, Katherine Mary	*Sparta*
Rood, Elizabeth Clarke	*Reedsburg*
Roos, Edmund Carl	*Oshkosh*
Rubin, Victor	*Milwaukee*
Runge, Ralf Thiele	*Baraboo*
Rusch, Harry Frederick	*Fargo, N. D.*
Salsman, Gertrude Anna	*Madison*
Saltzstein, Jerome Cohn	*Milwaukee*
Samuel, William Frederick	*Racine*
Sawyer, Ruth Elizabeth	*Menominee, Mich.*
Schley, Percy George	*Milwaukee*
Schlomovitz, Benjamin Herman	*Milwaukee*
Schmidt, Marguerite Viola	*Wausau*
Schoenleber, Louise Anne	*Milwaukee*
Schranck, Walter John	*Milwaukee*
Schreiter, Herbert Gustave	*Milwaukee*
Schweizer, Karl Theodore	*La Crosse*
Scott, Margaret	*Wauwatosa*
Scott, Marshall Robert	*Hancock*
Scott, Mary Aileen	*Kokomo, Ind.*
Search, Mabel Angus	*Milwaukee*
Sells, Jackson Johnson	*La Grange, Ill.*
Senty, Elmer George	*Arcadia*
Severson, James Melvin	*Deerfield*
Seymour, Harold LaLaune	*Kenilworth, Ill.*
Seymour, Helen	*Kenilworth, Ill.*

Shacoff, Henry	*Milwaukee*
Shaffer, Coryl Loraine	*Des Moines, Ia.*
Shanhouse, Louis	*Rockford, Ill.*
Shea, Susan Cecil	*Green Bay*
Showalter, Floyd Morrison	*Lynn, Ind.*
Shriver, Gladys	*Benton Harbor, Mich.*
Seifriz, William Ernest	*Washington, D. C.*
Siegrist, Louis Jacob	*Chilton*
Skubitzke, Fred William	*Blackwell*
Small, Sidney Herschel	*New York City*
Smart, Floyd Eli	*New Lisbon*
Smith, Callie Sutherland	*Du Pere*
Smith, Daniel Du Pre	*Madison*
Smith, Edward Thomas	*Brodhead*
Smith, Robert Link	*Colton, Cal.*
Snow, Lottie Louise	*Madison*
Spear, Gladys Wakeman	*Rock Falls, Ill.*
Spencer, Harold Dergoat	*Racine*
Springer, Elsie Laura	*Mineral Point*
Springer, Ruth Elizabeth	*Mineral Point*
Stanley, Alfred Felix	*Freeport, Ill.*
Statz, Alma Elizabeth	*Madison*
Steiner, Hugh Wynne	*Quincy, Ill.*
Stellberg, Edward Carl	*Racine*
Stephens, Flora Ione	*Whitewater*
Sterling, Mabel Celestia	*Belvidere, Ill.*
Stern, Charlotte Rosalia	*Milwaukee*
Stevens, Fredericka Leighton	*Madison*
Stevens, Stanley Story	*Oak Park, Ill.*
Stimes, Harriette Lenore	*Capron, Ill.*
Stoltze, Norris Sanborn	*Great Falls, Mont.*
Strelow, Idelle Celeste	*Madison*
Struck, Ella Marie	*Madison*
Stuewe, Eric Frederick	*Milwaukee*
Sumner, Jessie Walthew	*Madison*
Swan, Jane Idelle	*Mazomanie*
Swineford, Jerome Alfred	*Madison*
Talbot, George Walter	*Sterling, Ill.*
Tannert, Georgia Elizabeth	*Madison*
Taplin, Charlotte Louise	*Wausau*
Taylor, John Dudley	*Madison*
Taylor, Marjory Helen	*La Crosse*
Thayer, Charles Ellery	*Markesan*
Thiermann, Henry Frank	*Thiensville*
Thomas, Carroll Hoyt	*Chicago, Ill.*
Thomas, Hampton Hiram	*Eau Claire*
Thompson, Arthur Melvin	*Hollandale*
Thompson, Blanche Lucile	*Shullsburg*
Thompson, John	*Madison*

Todd, Mary Gill	*Dixon, Ill.*
Torgerson, Osborne	*Kalispell, Mont.*
Towne, Laura	*Decatur, Ill.*
Townley, Florence Elizabeth	*Fergus Falls, Minn.*
Townsend, Eugene Herbert	*New Lisbon*
Turner, Forrest Haven	*Milwaukee*
Urner, David Elhaven	*Osage City, Kans.*
Vasey, Horace Kent	*Grundy Center, Ia.*
Vinje, David Roy	*Madison*
Vinje, Janet	*Superior*
Volk, Hubert Thomas	*Plymouth*
Wahl, John Jacob	*Madison*
Wainwright, Florence	*Morris, Ill.*
Waite, Mark Oakley	*Madison*
Waldo Rollin Farquhar	*Des Moines, Ia.*
Walker, Anne Garnet	*Madison*
Walker, Gordon	*Madison*
Walker, John Charles	*Racine*
Wallin, Mary Etta	*Naches, Wash.*
Wangard, Emily Clara	*Milwaukee*
Warren, Inez	*Fox Lake*
Webb, Francis James	*Plymouth*
Wegge, William Edward	*Milwaukee*
Welch, George William	*Moline, Ill.*
Weltman, David Samuel	*Stevens Point*
Wendt, Zoe Marrie	*Canton, S. D.*
Wesley, Herbert William	*Medford*
Wheeler, Gladys Evelyn	*Wauwatosa*
Wheeler, Watson Richard	*Randolph*
White, Irvin Arnold	*Antigo*
Wiesender, Rose	*Green Lake*
Williams, Helen Agnes	*Milwaukee*
Winn, Henry Newton	*Poynette*
Winter, Helen George	*Mason City Ia.*
Wochos, Stephen	*Kewanee*
Wood, John Lynn	*Lake Mills*
Wright, Frank Lloyd, Jr.	*Oak Park, Ill.*
Wright, Herbert Edwin	*Kansas City, Mo.*
Wright, John Kenneth	*Oak Park, Ill.*
Wrigley, Roy Fielding	*Albion, Ind.*
Wulfekuhler, Thekla Louise	*Leavenworth, Kans.*
Wurdemann, Helen Louise	*Madison*
Wyatt, Harold Moore	*Fond du Lac*
Yabe, Masao	*Chibaken, Japan*
Yewdale, Ralph Bailey	*Milwaukee*
Zaegel, Robert Lupinski	*Sheboygan*
Zahn, John Phil	*Fond du Lac*
Zinke, Arthur William Hermann	*Milwaukee*

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Course in Commerce

Anderson, Raymond John	*Beldenville*
Ballard, Douglas Keene	*Oak Park, Ill.*
Bartley, Leo Paul	*Bloomington*
Bawden, George Ray	*Davenport, Ia.*
Beck, Victor Van	*Madison*
Bennett, Keenan Anslow	*Lancaster*
Bent, Maurice Hiram	*La Grange, Ill.*
Berger, Walter Julius	*Milwaukee*
Bernard, Peter Oscar Burchard	*Mayville*
Binzel, Clarence William	*Milwaukee*
Blanding, James Lee	*Moline, Ill.*
Boyd, William Joseph	*Sturgeon Bay*
Bradish, Ralph Partridge	*La Crosse*
Brewer, Everett Robert	*Chicago, Ill..*
Brown, Paul Murphy	*Madison*
Bruce, Malcolm Carter	*Seattle, Wash.*
Brumm, Lester Frank	*Madison*
Buckingham, Joseph William	*Dubuque, Ia.*
Bur, Joseph	*Green Bay*
Clark, Cyril Leon	*Menominee*
Clow, Charles Claire	*Lisbon, N. D.*
Conley, Charles LeRoy	*Clinton*
Connor, Edwin Joseph	*Madison*
Cook, Ellis Ray	*Duluth, Minn.*
Cooley, Spencer Henning, Jr.	*Chippewa Falls*
Custer, Glenn Stanley	*Madison*
Dettmann, Edwin Albert	*Sheboygan*
Dewey, Robert Sabin	*Georgetown, Colo.*
Doane, Ralph Embree	*Aurora, Ill.*
Douglass, Alexander Edwards, Jr.	*Kansas City, Mo.*
Drews, Harley Frank	*Johnson Creek*
Dreyer, Mark Charles	*Fitchburg*
Dwight, Oren Lyman	*Milwaukee*
Fehlandt, John Carl	*Madison*
Fetter, John Burks	*Louisville, Ky.*
Field, Adolph	*Madison*
Fitger, Arnold Kirst	*Duluth, Minn.*
Fitzgerald, Emmet Lawrence	*South Milwaukee*
Foster, Leroy Swormstedt	*Evansville, Ind.*
Fucik, George Charles	*Williams Bay*
Gaertner, Herman Victor	*Madison*
Gately, Ralph Michael	*Chicago, Ill.*
Gottschalk, Henry William	*Milwaukee*
Gouger, Phillip Charles	*Grand Rapids*
Grinde, Harry Andrew	*Madison*
Gullekson, George Norton	*Oconomowoc*
Gullickson, Gerhardt Oscar	*Eau Claire*

Halverson, Stener Benjamin	*Stoughton*
Harling, Harley Edwin	*Waldo*
Harper, LeBaron Lincoln	*Superior*
Harrington, Percy George	*Elkhorn*
Heald, Howard Leslie	*Oak Park, Ill.*
Hebenstreit, Frank Andrew	*Shullsburg*
Henry, Robert Kirkland	*Jefferson*
Heymann, Walter Meyer	*Chicago, Ill.*
Hickox, Samuel Silkman	*Milwaukee*
Hirsch, Charles Harper	*Milwaukee*
Hopson, Olin Stanley	*Waukesha*
Hughes, Stewart Wilson	*Madison*
Jennett, Raymond Joseph	*Streator, Ill.*
Jennison, Alfred Willis	*Williston, N. D.*
Jewett, Homer Moore	*Cleveland, O.*
Jirgal, John James	*Superior*
Johnson, Joseph Richmond	*Kokomo, Ind.*
Jones, Charles William	*El Paso, Ill.*
Jones, Hugh Meirion	*Dodgeville*
King, Charles Ruthford	*Watertown*
King, Myron Arthur	*Kansas City, Mo.*
Kress, John William	*Tomah*
Leibhart, Ray Charles	*Freeport, Ill.*
Lester, Robert Gaylord	*Kenilworth, Ill.*
Lobdell, Warren Lamson	*Chicago, Ill.*
Locher, Lawrence Faustman	*Milwaukee*
Lyon, Bert	*Kansas City, Mo.*
Lyons, James Arthur	*Chicago, Ill.*
Manor, Joseph Dean	*Hebron, Ill.*
Markham, Burtt Johnston	*Manitowoc*
Marshall, Gilbert Cottrell	*Belvidere, Ill.*
Mather, Charles Chambers	*Ottumwa, Ia.*
Meinrath, Irving Spencer	*Kansas City, Mo.*
Misch, Louis Sherwin	*Chicago, Ill.*
Morgan, Lynn James	*Milwaukee*
Morrill, Rufus Harrison	*Wonewoc*
Morse, Ralph Du Vall	*Beloit*
Munson, Miller	*Madison*
Newman, Edward John	*Madison*
Norem, Charles Arthur	*Bryant*
Oliver, Erwin	*Norway, Mich.*
Olsen, Merrill Odin	*Stoughton*
O'Neill, Eugene	*Chippewa Falls*
Ovrom, Fred Elmer	*Waupaca*
Penn, William	*Superior*
Peterson, Ernest Archie	*Blair*
Peterson, Raymond Victor	*Rice Lake*
Pomeroy, Herbert Stuart	*Oconomowoc*
Porter, Arthur Morris	*Wauwatosa*

Pott, Emil Benjamin	*Madison*
Power, Montgomery James	*Madison*
Priester, Henry Carl	*Davenport, Ia.*
Proctor, John William	*Madison*
Ray, Myron Thompson	*Reedsburg*
Reichert, Edward Edgar	*Madison*
Richardson, Ray Seneca	*Verona*
Rideout, Sherman Douglas	*Madison*
Rohn, Franklyn Albert	*Milwaukee*
Rosenberg, Milton S.	*Milwaukee*
Rowe, Raymond Foster	*Madison*
Rynkszel, Stephen Robert	*Waukegan, Ill.*
Salisbury, Philip Sidney	*Oregon*
Sand, Albert Theodore	*Chippewa Falls*
Schilling, Carl Fielding	*Leavenworth, Kans.*
Scoville, Earl Bemis	*Janesville*
Sherman, Thomas Broaders	*Chicago, Ill.*
Sinaiko, Joseph Morris	*Madison*
Smith, Ralph Curtis	*Green Bay*
Sporleder, Willard Moorehouse	*Wauwatosa*
Straubel, Clarence Weise	*Green Bay*
Stuhler, George Russell	*Monticello, Ia.*
Sweet, Frank Hampton	*Fond du Lac*
Termansen, Hans Peter	*Sawyer*
Thoreson, Herman William	*Grantsburg*
Tormey, Albert Robert	*Madison*
Turton, Walter Roy	*Baraboo*
Umhoefer, Anton Xavier	*Colby*
Vincent, James Attmore	*Davenport, Ia.*
Vinson, Harold Stephen	*Ottuma, Ia.*
Wells, Leland Allison	*De Pere*
Wenk, John Allen	*Marinette*
West, De Witt Clinton	*Elkhorn*
Wildeman, George Henry	*Madison*
Wood, Frank Carman	*Oak Park, Ill.*
Woodhouse, Linn Arthur	*Bloomington*
Woodward, Alexander Gilfillan	*Madison*
Work, Frank	*Clinton, Ia.*
Yost, John Radford	*Kansas City, Mo.*
Yunger, John Charles	*Ashland*

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Course in Chemistry

Castendyck, Otto Frederick	*Peru, Ill.*
Denniger, Francis Arthur	*Darlington*
Gelatt, Arthur Alvin	*La Crosse*
Gothard, Nelson James	*Dundee, Ill.*
Henning, Sherburne Bryant	*Milwaukee*
Loo, Ming Ying	*Ihing, China*

Moore, Murle Cecil	*Fort Atkinson*
Ritter, Philip August	*Milwaukee*
Schultz, Harry George	*Milwaukee*
Seward, Walter Edgar	*Alton, N. H.*
Shum, Nim Chi	*Hong Kong, China*
Skinner, Merrill Edmund	*Madison*
Sutton, Clarence George	*Lyons*
Tatarian, Caurken Sarkis	*Lynn, Mass*
Tseng, Yu-mei	*Hai Men ting, China*
Wilson, Thomas Leslie	*Galeton, Pa.*

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ADULT SPECIAL STUDENTS

Anderson, Alice Johanna	*Madison*
Bacon, King Myron	*Antigo*
Baird, Chester Dillon	*Milwaukee*
Baldwin, Raymond Lawrence	*Chicago, Ill.*
Ballantyne, Rose	*Madison*
Bizley, Emily Louisa	*Madison*
Bock, Fritz William, Jr.	*Milwaukee*
Boss, Freeda Emma	*Superior*
Bowman, Frank Elliott	*Sterling, Ill.*
Boyajian, Setrak Krikor	*Harpott, Turkey*
Boyd, Chorale	*Madison*
Brandt, Frances Irving	*Madison*
Breitkreutz, Ida May	*Milwaukee*
Brewer, Jerome Seckel	*Chicago, Ill.*
Bridges, Evelyn June	*Madison*
Bridges, James Henry	*Roundup, Mont.*
Briggs, Guy Edward	*Milwaukee*
Brinkhoff, Clara Gertrude	*Madison*
Brown, George	*Madison*
Burmeister, John Carl, Jr.	*Chicago, Ill.*
Cavaney, Arthur James	*Milwaukee*
Clark, Emily Ethel	*Portage*
Clifford, John William, Jr.	*Stevens Point*
Clifford, Margaret Forbes	*Reedsburg*
Coddington, Robert Leroy	*Madison*
Coleman, Robert Earl	*Grand Rapids, Mich.*
Dorrans, James Morgan	*Madison*
Duckart, Henry Francis	*Coopertown*
Duffy, Russell Arbey	*Austin, Ill.*
Emmet, Boris	*Madison*
Frear, Harriet Estelle	*Madison*
Fromm, Arthur Charles	*Milwaukee*
Gallagher, Joseph Thomas	*Racine*
Gaukel, Martin Francis	*Sauk City*
Grady, Julia Ricketts	*Madison*
Gutowski, Leon Alexander	*Racine*

Haake, Alfred Paul	*Chicago, Ill.*
Harker, Laura Ellen	*Shullsburg*
Heinrich, Arnold Anton	*Cedarburg*
Hewitt, Mary Anne	*Madison*
Hill, Jay Milton	*Fond du Lac*
Hillberry, Maude Eva	*Muscoda*
Hossie, Olive May	*Madison*
Howard, Mary Veronica	*Mauston*
Jaeck, Otto Richard	*Arlington*
Jamison, Charles Laselle	*Knoxville, Tenn.*
Jeffris, Donald Hanchett	*Chicago, Ill.*
Kay, Rosaline Kadewitz	*Chicago, Ill.*
Kinne, Arch Will	*Madison*
Kinne, Burdette Ingersoll	*Madison*
Knapp, Arthur Allen	*Lancaster*
Laird, Mary Eliza	*Crisfield, Md.*
Langdon, Floyd Burdick	*Minneapolis, Minn.*
Lawson, Lillian Edith	*Menasha*
Lee, Henry Gustave	*Madison*
MacGregor, Evelyn Hossie	*Madison*
Martineau, Eugene Bird	*Marinette*
Mercy, Anna	*New York City*
Miller, Daniel Wallace	*Milledgeville, Ill.*
Mountain, Arthur Harcourt	*Milwaukee*
Narbo, Lauritz Martin	*Madison*
Notz, Helen Eda t c	*Milwaukee*
Olson, Louis Frank	*Madison*
Parsons, Frank Youmans	*Chippewa Falls*
Pattison, Alice Hardcastle	*Baltimore, Md.*
Pinkerton, Milo Blish	*Madison*
Raymond, Geneva Dollie	*Manitowoc*
Reque, Sara Julian	*Madison*
Richardson, Gertrude wls	*St. Paul, Minn.*
Rose, Maude	*Madison*
Rueth, Anna Petronilla	*Sun Prairie*
Saposs, David Joseph	*Milwaukee*
Schlichting, Victor Hugo	*Deadwood, S. D.*
Schmidt, John Johnson	*Madison*
Schroeder, Mary Gretzner	*Chicago, Ill.*
Soutar, Douglas Ross	*Lake Geneva*
Squires, Benjamin Maurice	*Neptune*
Stosick, Edmund Charles	*South Milwaukee*
Strang, Clive Joseph	*Grantsburg*
Terry, Eleanor Light	*Madison*
Truitt, Albert Charles	*Madison*
Viles, Edith Josephine	*Chippewa Falls*
Wakeman, Hattie Josephine	*Madison*
Walden, Edward Job	*Madison*
Watrous, Paul Jerome	*Milwaukee*

Webster, Winifred Cecil	*Cresco, Ia.*
Weise, Mabel Caroline Marie	*Green Bay*
Weschler, Edward Albert	*Milwaukee*
Wilkinson, Mary Lois	*Kankakee, Ill.*
Wilson, Agnes Edna	*Madison*
Worthington, Theodore Thomas	*Madison*
Youngs, Carolina Julia	*Rockford, Ill.*

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ADULT SPECIAL STUDENTS, COURSE IN COMMERCE

Bradford, Charles Roy	*Madison*
Brimmer, Charles H. J.	*Milwaukee*
Broderick, Harold Anthony	*Kenosha*
Coulter, Robert Douglas	*Grand Rapids, Mich.*
Deniston, Albert Jay, Jr.	*Chicago, Ill.*
Doud, Willis George	*La Crosse*
Fleming, Hubert Lyman	*Oak Park, Ill.*
Hardie, Harrison Crossey	*Milwaukee*
Ott, Harvey Lincoln	*Milwaukee*
Smith, Earl Lloyd	*Cedarville, Ill.*
Strong, William Barstow	*Beloit*
Walker, Earl Reuben	*Madison*
Warner, Robert Miller	*Rockford, Ill.*
Wickman, Arnold Martin Frederick	*Detroit Harbor*
Wooster, Miles	*Sterling, Ill.*

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ADULT SPECIAL STUDENTS, COURSE IN CHEMISTRY

Jinghcusian, Benjamin Hagop	*Samsoal, Turkey*
Schultz, Edwin William	*Brownsville*
Schunck, John Ernest	*Milwaukee*
Wille, Carl Augustus	*Milwaukee*

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SCHOOL OF MUSIC

Students Specializing in Music

FOUR YEAR MUSIC COURSE

GRADUATES

Ely, Mary Chisholm ls	*Madison*
Sanders, Belinda Marie	*Madison*
Theobald, Almina Mae	*Madison*

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SENIORS

Anderson, Margaret	*Madison*
Polley, Grace Irma	*Madison*

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JUNIORS

Ridgway, Grace Gladys ls	*Madison*
Robinson, Miriam Josephine ls	*Madison*

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SOPHOMORES

Harrison, Edna Lucretia	*Madison*
Ibach, Esther Matilda	*Alma*
Jencks, Vescey Belle	*Lodi*
Kratz, Clara	*Schleisingerville*
Rime, Henrietta Olga	*Oxfordville*

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FRESHMEN

Brandenburg, Lucile	*Fort Dodge, Ia.*
Charles, Lucille Helen	*Madison*
Deming, Cora Lucile	*Madison*
Gloe, August Henry, Jr.	*Two Rivers*
Hill, Ruth	*Anderson, Ind.*
Ingwerson, Margaret Rebecca	*Chicago, Ill.*
Kalmbach, Ethel Alberta	*Sturgeon Bay*
Parkinson, Kathryn	*Madison*
Pitz, Nita Agnes	*Manitowoc*
Robertson, Alice	*Jackson, Minn.*
Watzke, Zelma Alberta	*Madison*
Woll, Margaret Louise	*Madison*
Wyman, Grace Elizabeth	*West Sommerville, Mass.*

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Course for Supervisors of Music in Schools

SECOND YEAR

Carr, Lucina Langworthy g	*Madison*
Klinefelter, Barbara Hazel	*Madison*
Lehmann, Frances Esther t c	*Woodland*
Matson, Elvera	*Madison*
Ringling, Mattie Salome	*Madison*
Sunstrum, Lillian Victoria	*Marinette*

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FIRST YEAR

Brennan, Hazel Kathryn	*Baraboo*
Goodman, Ruth Gertrude	*Ishpeming, Mich.*
Gosselin, Florence Lea	*Green Bay*
Hugill, Florence Ione	*Darlington*
Hunt, Maude Iva	*Madison*
Jevne, Kadelia Gilbertson ls	*Meridian*
Kincaid, Ruth Gladys	*Mattoon, Ill.*
Miller, Leila Evangeline	*Belleville*
Wilson, Irene Yvonne	*Chicago, Ill.*

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ADULT SPECIAL STUDENTS IN MUSIC

Anderson, Alice Johanna	*Madison*
Briggs, Ruth Lorena	*Madison*
Heller, Anna	*Waunakee*
Ketcham, Edna Murray	*Madison*
King, Charles Curtis	*Los Angeles, Cal.*
Pfabe, Hilda Columbia	*Delavan*
Schmitt, Pearl Ruby	*Madison*
Stevenson, Claire Lillian	*Marinette*

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UNCLASSIFIED STUDENTS IN MUSIC

Bergen, Lillian Catherine	*Madison*
Bissell, Marion Orpha	*Lodi*
Buttles, Maud Ethel	*Westfield*
Chapman, Luella Jeanette	*Fort Atkinson*
Comfort, Lovisa Ruth	*Cobb*
Dahle, Thea Otelea	*Mt. Horeb*
Gilbertson, Mildred Cecil	*Black Earth*
Gilman, Leila	*Madison*
Hubbell, Helen	*Madison*
Karberg, Elsie Anna	*Madison*
Koblitz, Helen Margaret	*Waterloo*
Loughead, M. Isabelle	*Belleville*
McNeel, Florence Bonnie	*Waterloo*
Mason, Florence Elizabeth	*Madison*
Nelson, Agnes Edna	*Madison*
Olson, Edith Mary	*Stevens Point*
Pengelly, Ruby Viola	*Madison*
Reidenbach, Alice Blanche	*Lake Mills*
Schultz, Edith Caroline	*Lake Mills*
Simpson, Esther Helena	*Madison*
Spilde, Edna	*Lodi*
Steinel, Nellie Lena	*Lake Mills*
Sullivan, Helen	*Madison*
Towns, Theo	*New York, N. Y.*
Wittwer, Elgia Lela	*Madison*
Young, Mamie Loretta	*Madison*

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Students in Other Colleges Electing Courses in Music

Adlington, Earl Raymond e	*Viroqua*
Allyn, Josephine ls	*Madison*
Arnold, Bertha Louise ls	*Eau Claire*
Babcock, Hazel ls	*Kasota, Minn.*
Baker, Ross Allen g	*Green Castle, Ind.*
Baldwin, Raymond Lawrence ls	*Chicago, Ill.*

Barsaloux, Elizabeth ls	*Mason City, Ia.*
Barth, Eugene Albert ls	*Pt. Washington*
Berger, Lucile Rosalind ls	*Lander, Wyo.*
Bernard, Burchard Peter Oscar ls	*Mayville*
Bliss, Hugh Porter ls	*Madison*
Blodgett, Clara ls	*Janesville*
Blodgett, Marion ls	*Janesville*
Boguslawsky, Marc ls	*Milwaukee*
Bonsteel, Verne Clinton ls	*Padus*
Bradshaw, Ethel Belle ls	*Rockford, Ill.*
Brown, Harry Gilbert ls	*Madison*
Brown, Mary Storer ls	*Madison*
Buech, William Frederick ls	*Milwaukee*
Burke, Leroy Bernard ls	*Madison*
Burke, Nelle Ellen ls	*Monroe*
Butz, Charles Harold e	*Mazomanie*
Carpenter, Florence Melanie ls	*Windsor*
Chave, Ella Bean ls	*Tomahawk*
Clausen, Florence Rosalie ls	*Washburn*
Cleary, George Edward ls	*Platteville*
Conover, Mary Stowe ls	*Hinsdale, Ill.*
Cooke, Raymond Denny ls	*Eau Claire*
Crawford, John Jennings ls	*Hazel Green*
Crothers, Harold Marion g	*Badger, S. D.*
Dale, Drake Paul e	*Madison*
Davies, Marion ls	*Madison*
De Boos, Esther Ethel ls	*Madison*
Disque, Robert Conrad g	*Madison*
Doerschuk, John James a	*Shanesville, O.*
Donovan, Adelaide Veronica ls	*Madison*
Dunwiddie, Grace Sue ls	*Monroe*
Eidmann, Herbert Walter ls	*Chicago, Ill.*
Faville, Harriett Elizabeth ls	*Lake Mills*
Finegan, Ann Catherine a	*Boise, Idaho*
Fleek, Belle Louise ls	*Brodhead*
Fligelman, Belle ls	*Helena, Mont.*
Foster, Glen Reid ls	*Clarinda, Ia.*
Frankenburger, Dorothy ls	*Madison*
Free, Nelle ls	*Anderson, Ind.*
Frey, Cynthia Probert ls	*Madison*
Frost, Harold Guernsey a	*Almond*
Geidel, Carl Diedrich ls	*Madison*
George, Mable Hamilton ls	*Shullsburg*
Gilmer, Harold Wright g	*Roseville, Ill.*
Gouger, Phillip Charles ls	*Grand Rapids*
Gunderson, Oscar a	*Madison*
Haas, Lily ls	*Pewaukee*
Halbower, Elizabeth Bernice ls	*Miller, S. D.*
Hames, Ruth Anna ls	*Newburg*

Handy, Edward Haven e	*Madison*
Hecht, Frank Abner ls	*Madison*
Heinemann, Warren Fred a	*Sheboygan*
Hildebrand, Eva Mary ls	*Rhinelander*
Hill, Edna Marion ls	*Madison*
Hirsch, Alcan g	*Corpus Christi, Texas*
Hoebel, Elsie Anna ls	*Madison*
Holcombe, Helen Lucile ls	*Milwaukee*
Hollingsworth, Laura Anne ls	*Dubuque, Ia.*
Holmes, Marion Helen ls	*Milwaukee*
Hooper, Lorna ls	*Oshkosh*
Hoppert, Martin John a	*Sheboygan*
Hougen, Isabella ls	*Wilmot, S. D.*
Housel, Miriam ls	*Madison*
Hover, William Tracy ls	*Denver, Colo.*
Hoverson, Ethel Madeline ls	*Milwaukee*
Hubbell, Wolcott Wood e	*Madison*
Ingebritson, Arthur Louis a	*Cambridge*
Jackson, Clarence Eccles ls	*Grand Rapids*
Johannes, Wilhelmine ls	*Milwaukee*
Johnson, Laura Butler ls	*Madison*
Jones, Charles William C. ls	*Madison*
Jones, Isabel Elizabeth ls	*Madison*
Kay, Rosaline K. ls	*Chicago, Ill.*
Keats, Marion ls	*Milwaukee*
Keith, Mabel ls	*Chicago, Ill.*
Keithly, Amy ls	*Peoria, Ill.*
Kemper, Emma Lucy ls	*Butte, Mont.*
Kilpatrick, Elmer James a	*Belmont*
King, Charles Ruthford ls	*E. Watertown*
Kinne, Burdette Ingersoll ls	*Madison*
Knight, Oliver Drake ls	*River Falls*
Krause, Lenore g	*Madison*
Kremer, Eugene Edward ls	*Fond du Lac*
Lacey, William Randolph ls	*Madison*
La Combe, Ina Gertrude ls	*Green Bay*
Lamson, Robert Austin a	*Madison*
Lange, Gladys Wilhelmina ls	*Eau Claire*
Lapham, Olene ls	*Lake Beulah*
Lauderdale, Jesse Edward e	*Elkhorn*
Leavens, Marie Therese ls	*Milwaukee*
Lent, Wilmar Francis g	*Washington, D. C.*
Levitan, Abe Mortimer ls	*Madison*
Lichtenberg, Harry Raymond ls	*Alta, Ia.*
Listebarger, Hazelle Estelle ls	*Cedar Rapids, Ia.*
Lloyd-Jones, Alice a	*Hillside*
Lott, Alice Mary ls	*Elmwood, Ill.*
MacArthur, Catherine a	*Madison*
Mabis, Marie Katherine ls	*Des Moines, Ia.*

Mahre, Alvin August ls	*Amery*
Martin, Mary Anne ls	*Madison*
Maxon, Harriet ls	*Milwaukee*
Mead, Hazel Marguerite a	*Madison*
Middlekauff, Ellwood ls	*Eau Claire*
Misch, Louis Sherwin ls	*Chicago, Ill.*
Mohaupt, Arthur George ls	*Milwaukee*
Moore, Edith ls	*Merrillan*
Moroney Kathleen ls	*Dallas, Texas*
Morsbach, Robert Ernest ls	*Durand*
Nehs, Victor Wilson e	*Marshfield*
Nickerson, Lona Belle ls	*Madison*
Nickerson, Pearl Irene ls	*Madison*
Niere, Stuart a	*Watertown*
Olson, Lester Freemont e	*Madison*
Osann, Norman e	*Oak Park, Ill.*
Parr, Thad Cassius ls	*Madison*
Perry, Clara Hannon ls	*Milwaukee*
Peterson, Ernest Archie ls	*Blair*
Post, Eveline Margaret ls	*Edgerton*
Pott, Arthur Frederick a	*Sheboygan*
Priester, Henry Carl ls	*Davenport, Ia.*
Proudfit, Elizabeth Ford ls	*Madison*
Raymond, Alice Helena ls	*Manitowoc*
Reichert, Rose Beatrice ls	*Madison*
Reilly, Marguerite Elizabeth ls	*Watertown*
Reque, Sara Julian ls	*Madison*
Rintelman, Clara Augusta ls	*Milwaukee*
Ross, Anne Henrietta Elizabeth ls	*Milwaukee*
Rowley, Alden Bruce ls	*Madison*
Rudolph, Alice Dorothy ls	*Canton, S. D.*
Ruedebusch, Hans Henry ls	*Mayville*
Runzler, Arthur Charles ls	*Milwaukee*
Samp, Edward Joseph ls	*Cecil*
Schmidt, Irma Nathalie ls	*Wausau*
Schultz, Harry George ls	*Milwaukee*
Schultz, Rudolph a	*Lake Mills*
Schulze, Emma Johanna ls	*Portage*
Schwalbe, William Louis e	*Milwaukee*
Schwartz, Nellie Elizabeth ls	*East Troy*
Sechler, Josephine Sargent ls	*Sechlerville*
Seward, Leila Huntington ls	*Binghampton, N. Y.*
Sexton, Marie Jeanette ls	*Marshfield*
Shapiro, Estelle ls	*Medford*
Small, Sidney Herschel ls	*San Rafael, Cal.*
Steen, Anna Corinne ls	*Madison*
Steensland, Lohra ls	*Madison*
Stern, Charlotte Rosaline ls	*Milwaukee*
Stoddard, Leroy Lester e	*Platteville*

Stoltze, Norris Sanborn ls	*Great Falls, Mont.*
Story, Harold Willis ls	*Milwaukee*
Swan, Ethyl Frances ls	*Madison*
Swarthout, Edith Clare ls	*La Crosse*
Swensen, Helen Katrina a	*Madison*
Tack, Myron Anthony e	*Marshfield*
Tarrell, Arch Le Roy g	*Platteville*
Townley, Florence Elizabeth ls	*Fergus Falls*
Tyler, Dorris Lovice ls	*Waupun*
Urner, Catherine Murphy ls	*Osage City, Kan.*
Vorse, Dorothy ls	*Des Moines, Ia.*
Warden, Charlotte Jane ls	*Ottumwa, Ia.*
Webster, Winifred Cecil ls	*Cresco, Ia.*
Weiss, Florence Marie ls	*Madison*
Wendt, Zoe Marree ls	*Canton, S. D.*
Wesle, Herbert William ls	*Medford*
White, Eva Parker ls	*River Falls*
White, Mary Katherine a	*Louisville, Ky.*
Wieboldt, Elmer ls	*Chicago, Ill.*
Wiechers, Alma Magdalin ls	*Racine*
Wilkinson, Mary Lois ls	*Kankakee, Ill.*
Williams, Milton David a	*Warren, Ill.*
Williamson, Robert Crosier ls	*Beloit*
Wittwer, Herman Louis ls	*Monticello*
Wright, John Kenneth ls	*Oak Park, Ill.*
Wrigley, Roy Fielding ls	*Albion, Ind.*
Zellmann, Anna Barbara ls	*Milwaukee*

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MEDICAL SCHOOL

SECOND YEAR

Allaben, Gerald Randolph ls	*Rockford, Ill.*
Cook, Lyman Joseph, B. A.	*Wheaton, Ill.*
Dean, James Philip ls	*Madison*
Falk, Victor Sofus ls	*Stoughton*
Frey, Forrest Henry ls	*Hartford*
Gasser, Herbert Spencer, B. A., g	*Platteville*
Hartman, Ralph Chapel ls	*Davis, Ill.*
Heidner, Albion Henry ls	*West Bend*
Helm, Harold McMurdo, B. A.	*Beloit*
Hyde, William George ls	*Racine*
Jobse, Oliver John, B. S.	*Milwaukee*
Johnson, Lloyd William ls	*Augusta*
Kleinschmit, Henry William ls	*Oshkosh*
McMahon, Frank Bartholomew ls	*Milwaukee*
Mitchell, Ralph Kenneth ls	*Milwaukee*
Nadeau, Oscar Eugene ls	*Marinette*
Nuzum, Frank Richard ls	*Janesville*
Petersen, Marius Smith, B. S., g	*Milwaukee*

Quigley, William Joseph ls	*Antigo*
Stetler, Pearlie Mae ls	*Richland Center*
Tindall, Floyd George ls	*Belleville*
Williams, Arthur Jack ls	*Waukesha*
Winholt, Walter Fritz ls	*Chicago, Ill.*

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FIRST YEAR

Bedford, Edgar William ls	*Sheboygan*
Bowen, Robert Linde ls	*Oshkosh*
Brereton, Gilbert Elliott ls	*Madison*
Bunta, Emil ls	*Milwaukee*
Colignon, Constant Moreaux ls	*Sturgeon Bay*
Davis, Irwin Grant ls	*Arcadia*
Englar, Thomas Shepherd, B. A.	*Medford, Md.*
Foerster, Harry Robert ls	*Milwaukee*
Gesell, Arnold Lucius, Ph. D.	*Madison*
Grannis, Irving Van Vliet ls	*Menomonie*
Hanson, Otto Ludwig ls	*Chippewa Falls*
Hartwig, Douglas Ferdinand ls	*Watertown*
Headland, Oscar Bernhardt ls	*Litchville, No. Dak.*
Holt, Harriet Grace, M. A.	*Madison*
Johnson, Russell Martin ls	*Madison*
Jones, Merritt La Count ls	*Wausau*
Nickson, Harry Delbert ls	*Platteville*
Nuzum, John Weston ls	*Janesville*
Otten, Fred Benjamin, B. S.	*Madison*
Richards, Esther Loring, B. A.	*Sherborn, Mass.*
Rietz, Walter Hermann ls	*Manitowoc*
Schuldt, Clarence Mark ls	*Platteville*
Townsend, De Wayne ls	*Oconomowoc*
Weigen, Anders Johann ls	*Sun Prairie*

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COURSE IN PHARMACY

FOUR YEAR COURSE

Dahl, Paul Andrew	*Viroqua*	Freshman
Elwers, George Ernest	*Neenah*	Freshman
McGowan, Ray Elmer	*Milton Junction*	Junior
Mueller, Norbert Robert	*Princeton*	Freshman
Pfeiler, Reuben Valentine	*Sheboygan*	Freshman
Williams, Vaughn Russell	*Belleville*	Freshman

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TWO YEAR COURSE

Arnold, Edwin Bruce	*Lake Geneva*	Sophomore
Baker, John August	*Randolph*	Sophomore
Barker, Howard Hill	*Baraboo*	Freshman

Beedle, John Raymond	*Madison*	Sophomore
Berg, John B.	*Mondovi*	Freshman
*Burns, Walter Clement	*Oakfield*	Junior
Byron, Lynn Wider	*Madison*	Sophomore
Feit, Victor Emanuel	*Amery*	Freshman
*Fischer, Ray Otto	*Jefferson*	Junior
Gigot, Gustave Joseph	*Casco*	Sophomore
Gruhl, Oscar	*Milwaukee*	Freshman
Hammersley, William Seymour	*Lake Geneva*	Sophomore
Hanson, James	*Sturgeon Bay*	Sophomore
Hoffman, LeRoy George	*Antigo*	Freshman
Holmes, Harold Howard	*Mather*	Sophomore
Jaastad, Henry Olia	*Iola*	Sophomore
Johnson, Myron Alfred	*Wausau*	Freshman
Kepke, Fred William	*Madison*	Freshman
*Kleinheinz, William Otto	*Madison*	Junior
Krueger, Ella Diana	*Westfield*	Freshman
Leonard, Harry William	*Madison*	Sophomore
Lewis, William Henry	*Madison*	Sophomore
McCrory, Walter	*Milwaukee*	Freshman
McHenry, John Augustine	*Bayfield*	Freshman
Mahre, Alvin August	*Amery*	Freshman
Meuer, Urban John	*Madison*	Freshman
Netzel, Albert Frederick Rudolph	*Crandon*	Freshman
*Netzel, Arthur Frank	*Crandon*	Junior
O'Brien, John Edward	*Randolph*	Freshman
Olson, Louis	*Hayward*	Freshman
*Pfeil, Paul Francis	*Fond du Lac*	Junior
Pinch, Gerrie Johnathan	*Hillsboro*	Freshman
Pomeroy, Ralph	*Gays Mills*	Sophomore
Quigley, Andrew Le Roy	*Lake Geneva*	Sophomore
Reif, Herman Peter	*Madison*	Freshman
Rennebohm, Oscar	*Milwaukee*	Sophomore
Rudolph, Earl Vilas	*Antigo*	Freshman
Schmidt, Edward George	*Madison*	Freshman
Trainor, Joseph Charles	*Madison*	Freshman
Wachler, Edward Francis	*Randolph*	Freshman
Wigren, John	*Chicago, Ill.*	Sophomore

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COLLEGE OF ENGINEERING

SENIORS

Alexander, Jesse Fred	*New Philadelphia, O.*	E. E.
Anderly, Howard Merle	*Brodhead*	C. E.
Ball, Walton Cook	*Union Grove*	C. E.
Barnum, Charles Treadway	*Wilkes Barre, Pa.*	M. E.
Barth, John Herman	*Port Washington*	C. E.

*Taking three year course.

Beebe, Horace Merle	*Fond du Lac*	C. E.
Bickelhaupt, Carroll Owen	*Aberdeen, S. D.*	E. E.
Bickelhaupt, William Verne	*Aberdeen, S. D.*	Min. E.
Bingham, James Baldwin	*Madison*	C. E.
Birch, Albert	*Fargo, N. D.*	C. E.
Blake, Harry Duvall	*Madison*	C. E.
Bleyer, Addison Milton	*Milwaukee*	M. E.
Bonesteel, Lloyd Gomer	*Padus (Adv. Course)*	Min. E.
Borecky, Carl William	*Ashland*	E. E.
Brue, Hans Nelson	*De Forest*	C. E.
Burmester, Everette Almond	*Madison*	C. E.
Burt, Clayton Roger	*Brodhead*	C. E.
Christie, Henry Austin	*Superior*	M. E.
Chuchian, Avedis Melkon	*Van, Armenia, Turkey*	C. 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.
Davila, Lorenzo Juan	*Juana, Diaz, Porto Rico*	C. E.
Dequine, Louis Edward	*Fond du Lac*	C. E.
Dohm, John Walter	*Dane*	C. E.
Edmund, Harvey William	*Fond du Lac*	M. E.
Esau, Carl William	*Milwaukee*	C. E.
Fay, Cyril Anton	*La Crosse*	Min. E.
Fetzner, Edward John	*La Crosse*	C. E.
Fisher, Charles Roswell	*Beaver Dam*	C. E.
Fowler, William Oliver	*Humbird*	C. E.
von Geltch, Ernest Werner	*Sheboygan*	E. E.
Glover, Louis Earle	*Oshkosh (Adv. Course)*	E. E.
Goeke, Otto Fred	*Davis, Ill.*	C. E.
Grant, Daniel McPherson	*Milwaukee*	Min. E.
Gray, Clifford Fell	*Loraine, O.*	M. E.
Haag, Edmund Clarence	*Whitewater*	Ch. 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.
Hoeveler, John Alexander	*Madison*	E. E.
Hoffmann, Fritz J.	*Madison*	C. E.
Holmes, William Raymond	*Baldwin*	C. E.
Holverscheid, Robert	*Hinsdale, Ill.*	M. E.
Hutchinson, Foye Peabody	*Appleton*	E. E.
Iakisch, John Rudolph	*Granton (Adv. Course)*	C. E.
Ilgner, Howard Frederick	*Milwaukee*	E. E.
Johnson, John Hugo	*Madison (Adv. Course)*	E. E.
Johnson, Maurice	*Bayfield (Adv. Course)*	E. E.
Kalsched, Edward Albert	*Marshfield*	E. E.
Keller, Aloysius Deony	*Baraboo*	E. E.
Kemp, William Bilton	*Madison (Adv. Course)*	E. E.

Kerr, Henry Halleck	*Eau Claire*	E. E.
Koenig, Meinhardt Carl	*Wausau*	C. E.
Kraatz, Karl Louis	*Wausau*	M. E.
Lamont, Maurice Brereton	*Aberdeen, S. D.*	E. E.
Langwill, John Sutherland	*Madison*	M. E.
Lauderdale, Jesse Edward	*Elkhorn*	E. E.
Lightbody, James Nichols	*La Crosse*	E. E.
Lowell, John Wesley, Jr.	*Madison*	C. E.
Ludberg, Andrew	*Spokane, Wash.*	C. E.
Lueders, Carl John	*Columbus*	C. E.
MacArthur, Angus, Jr.	*Madison*	M. E.
McLean, James Donald	*Beloit*	M. E.
Macaraeg, Juan Guico	*Binalonan, Pang, P. I.*	C. E.
Mainland, James	*Racine (Adv. Course)*	E. E.
May, Arthur Edwin	*Madison*	C. E.
Meinecke, Ferdinand, Jr.	*Milwaukee*	Min. E.
Miller, Bert E.	*Madison*	E. E.
Moore, Roger Sherman	*Brodhead*	M. E.
Moritz, Charles James	*Madison*	C. E.
Morris, George Lee	*Joliet, Ill.*	C. E.
Mueller, Benjamin Harrison	*Alma*	M. E.
Muesse, Allan Ralph	*Lancaster*	E. E.
Murrish, William Ulysses	*Mazomanie*	E. E.
Nickell, George Harold	*Waukesha*	C. E.
Oehler, Alfred Geoffry	*Lake Mills*	E. E.
Paulus, Edwin J.	*Milwaukee*	C. E.
Pearsall, William Gilchrist	*McGregor, Ia.*	Min. E.
Peterson, Orrin Peter	*Wausau (Adv. Course)*	Min. E.
Pflanz, Ernst Leopold	*Milwaukee*	C. E.
Phipps, Roy Chester	*Milwaukee*	M. E.
Pope, Louis Frederick	*Racine*	C. E.
Pugh, William Harold	*Racine*	M. E.
Raetzmann, Arthur Henry William	*Elroy*	C. E.
Reinert, Walter August	*Madison*	C. E.
Roberts, Chapin	*Oak Park, Ill.*	M. E.
Robertson, Almon Fulton	*Madison*	Min. E.
Scarcliff, George Allen	*Janesville*	C. E.
Schmidt, Herbert Edgar	*Superior*	Min. E.
Schwada, Joseph Philip	*Milwaukee*	C. E.
Schwalbe, William Louis	*Milwaukee*	C. E.
Scudder, Charles Morrison	*Marinette*	C. E.
Shapiro, Samuel Reuben	*Marshfield*	E. E.
Simons, Richard Wharton	*St. Louis, Mo.*	E. E.
Slade, John Lathrop	*Hinsdale, Ill.*	M. E.
Sladky, Alexander Carlton	*Milwaukee*	M. E.
Stanley, Stewart Woods	*Hot Springs, S. D.*	E. E.
Starkey, Harry Nicholl	*Eau Claire*	C. E.
Steinhagen, Ewald Daniel	*Milwaukee*	C. E.
Sweet, Nathan Clark	*Fond du Lac*	M. E.

Talbot, Lyman Robert	*Madison*	C. E.
Terry, Charles Earl	*Tomah*	E. E.
Theurer, Fredrich Louis	*Milwaukee*	Ch. E.
Torkelson, Francis Arthur	*Madison*	C. E.
Ullius, Frederick William, Jr.	*Milwaukee*	C. E.
Veerhusen, Herman Helm	*Madison (Adv. Course)*	C. E.
Voyer, Leonard Eugene	*Junction City*	E. E.
Watson, Robert Dwight	*Old Fort, O.*	M. E.
Week, Erling Finch	*Spokane, Wash.*	M. E.
Wegner, Arnold Adolph	*Wausau*	M. E.
Whelan, John Baptist	*Chippewa Falls*	E. E.
White, Albert Ray	*Marinette*	Ch. E.
White, George Leybourne	*Racine*	E. E.
Wood, Lucien Alexander	*Fonda, Ia.*	M. E.
Woolrich, Willis Raymond	*Mineral Point*	E. E.
Wurl, Frank Louis	*Appleton*	Ch. E.
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JUNIORS

Ankeney, Stewart Hill	*Madison*	C. E.
Abel, Charles Frederick	*Brillion*	M. E.
Badger, Arthur Hewitt	*Brisbane, Australia*	E. E.
Barclay, Arthur Jackson	*Elgin, Ill.*	C. E.
Battles, Tracy Raymond	*Baraboo*	E. E.
Beebe, Gordon Alcott	*Beloit*	C. E.
Bendt, Joseph Philip	*Kenosha*	C. E.
Bennett, Charles Edwin	*Fort Collins, Colo.*	M. E.
Best, Paul Butler	*Oak Park, Ill.*	E. E.
Bleyer, Lloyd Garrison	*Milwaukee*	M. E.
Blomeyer, Roscoe Stanhope	*Milwaukee*	C. E.
Braasch, Frederick William	*Sheboygan*	M. E.
Bradish, Charles Bresee	*La Crosse*	E. E.
Brandstad, Richard Eugene	*Eau Claire*	C. E.
Browning, Elmer Elsworth, Jr.	*Milwaukee*	E. E.
Camargo, Trajano de B.	*Limeira, Brazil*	E. E.
Carpenter, Frank Alonzo	*Spring Green*	M. E.
Carus, Edward Hegeler	*La Salle, Ill.*	Ch. E.
Chin, Yushu	*Anhui, China*	E. E.
Chritzman, George Moffit	*Kewanee, Ill.*	E. E.
Cortelyou, Townsend	*Brodhead*	C. E.
Coup, Fred Thomas	*Madison (Adv. Course)*	E. E.
Damon, William Henry	*Madison*	E. E.
Davis, Robert William	*Madison (Adv. Course)*	M. E.
Davis, Rowland George	*Milwaukee*	E. E.
De Merit, Merrill Wilson	*Lake Mills*	E. E.
Der-Mugerditchyan, Bairge Stepan	*Madison*	C. E.
Diaz, Juan Garcia	*Ponce, Porto Rico*	M. E.
Dickinson, Kendall Foote	*Lake Geneva*	M. E.
Dillon, Carl Duncan	*Madison*	C. E.

Distelhorst, Charles Andrew Robert	*Dorchester*	C. E.
Dodd, Roy Lyon	*Milwaukee*	E. E.
Doerschuk, Herbert Marion	*Shanesville, O.*	E. E.
Dorr, George Nickoli	*Stoughton*	M. E.
Dreyer, Elmer John	*Janesville*	E. E.
Dunnewald, Paul Wilterding	*Madison*	C. E.
Eastman, Charles Leslie	*Milwaukee*	C. E.
Ely, Alexander White	*Edgerton*	C. E.
Enders, William Jacob	*Marinette*	E. E.
Esau, George Walter	*Milwaukee*	Ch. E.
Fehlandt, William Louis	*Madison*	C. E.
Fellows, Kenneth Elbert	*Lodi*	C. E.
Fraser, John, Jr.	*Milwaukee*	M. E.
Fuller, Judson Earl	*Oak Park, Ill.*	M. E.
Gaskell, Charles James	*Baraboo*	M. E.
Gillett, Laurence Farrington	*Fond du Lac*	E. E.
Graetz, Walter Carl	*Milwaukee*	E. E.
Graham, Harold Moore	*Dixon, Ill.*	C. E.
Griffith, William Harry	*Toledo, O.*	C. E.
Grimmer, Edwin William	*St. Louis, Mo.*	C. E.
Gross, Harry Edward	*Elmhurst, N. Y. (Adv. Course)*	C. E.
Grotewohl, Laurence Appelman	*Hartley, Ia.*	E. E.
Gysbers, Arthur	*Brandon*	E. E.
Hansen, Clinton John	*Butte, Mont.*	Min. E.
Harwick, Guy Duval	*Madison*	E. E.
Hatch, Walter Adams	*Iola*	C. E.
Head, Clarence Eugene	*Kenosha*	M. E.
Henningsen, Earle Stanley	*Oakfield*	E. E.
Hewit, Earl John	*Nashotah*	C. E.
Himmelstein, Arthur Louis	*Milwaukee*	C. E.
Hitchcock, Glenn Olin	*West Salem*	M. E.
Hoffman, Eugene Robert	*Ellensburg, Wash.*	C. E.
Holbrook, Henry Edwin	*La Grange, Ill.*	Ch. E.
Holverscheid, Erwin	*Hinsdale, Ill.*	M. E.
Horstkotte, Edward Henry	*Ellsworth*	E. E.
Jacobson, Carl Joseph	*Elkhorn*	M. E.
Jamieson, John Rodney	*Poynette*	C. E.
Jones, Louis De Witt	*Waukegan, Ill.*	C. E.
Keene, Alvin Dewayne	*Leon*	E. E.
Keller, Roy Avery	*Peoria, Ill.*	E. E.
Kellogg, Rufus Henry	*Green Bay*	M. E.
Kletzman, William Arthur	*Eau Claire*	E. E.
Kirch, Charles Hugo	*Mazomanie*	C. E.
Kitagawa, Tometaro	*Tokio, Japan*	C. E.
Kozarek, Steven Aloizy	*Antigo*	C. E.
Kraus, Raymond John	*Marshfield*	E. E.
Krell, Samuel Arthur	*Madison*	C. E.
Kroening, Ralph Henry	*Milwaukee*	C. E.

Kwank, Bang	*Chang Keang, China (Adv. Course)*	C. E.
Larsen, Robert Leonard	*Madison*	M. E.
Laughlin, Earl Cletus	*Antigo*	E. E.
Lewis, John Alfred	*Terraville, S. D.*	C. E.
Light, Henry Raymond	*Brooklyn, Ia.*	C. E.
Love, Joseph Eugene	*Grand Rapids*	E. E.
Lucas, Frank Blackburn	*Brownsville, Tex.*	Ch. E.
McDougall, Shirley Alton	*Whitewater*	Ch. E.
McFarland, Robert Ernest	*Grand Rapids*	E. E.
McGuire, Alfred Russell	*Honey Creek*	Min. E.
McKillop, William Langille	*Milwaukee*	Ch. E.
Madson, Frank Henry	*Racine*	Min. E.
Markwardt, Lorraine Joseph	*Lansing, Ia.*	C. E.
Mears, George Sherman	*Fond du Lac*	C. E.
Mengel, Forest Foster	*Oconomowoc*	C. E.
Merkel, Richard Hans	*Sauk City*	C. E.
Merriell, George Hughes, Jr.	*Chicago, Ill.*	E. E.
Miller, Jesse Eugene	*Brodhead*	E. E.
Moyer, William David	*Grand Rapids*	M. E.
Newbury, Robert Charles	*Waukesha*	E. E.
Norris, Lucius Allen	*Elkhorn (Adv. Course)*	E. E.
Olson, Lester Fremont	*Chicago, Ill.*	E. E.
Osann, Norman	*Oak Park, Ill.*	E. E.
Page, Harry Allen	*Prairie du Sac*	M. E.
Palmatier, Horace Potter	*Madison*	E. E.
Parks, Rollin Robert	*Fredonia*	E. E.
Peirce, Walter Anderson	*Madison*	C. E.
Phelps, Marion A.	*Albany*	M. E.
Pickard, Arthur Edward	*Chicago, Ill.*	M. E.
Pope, Arthur Charles	*Ableman*	Ch E.
Porter, James William	*Elkhorn*	M. E.
Prochazka, Henry Charles	*Manitowoc*	M. E.
Quast, Adolph William	*Madison*	M. E.
Reber, Louis Ehrhart, Jr.	*Madison*	C. E.
Reid, Bryan Seaborne	*Ashland*	Min. E.
Reilly, Thomas William	*Port Washington*	C. E.
Reynolds, Thomas Myrick	*Milwaukee*	C. E.
Richter, Oscar Arthur	*Manitowoc*	M. E.
Roberts, Hugh Marine	*Superior*	Min. E.
Rogers, Howard Herbert	*Oak Park, Ill.*	Ch. E.
Roth, William Arthur	*Monroe*	M. E.
Ruhloff, Frederick Carl	*Milwaukee*	M. E.
Rust, Thomas H.	*Eau Claire*	C. E.
Schecter, Samuel	*Madison*	C. E.
Scherer, Harold Lester	*Milwaukee*	M. E.
Schieber, Oliver Jay	*Los Angeles, Cal (Adv. Course)*	C. E.
Schilling, George William	*Freeport, Ill.*	Min. E.
Schilling, Walter William	*Green Bay*	C. E.

Schmich, Matt Fred	*Freeport, Ill.*	Min. E.
Schneider, Martin Peter	*Madison*	C. E.
Schroeder, George Edward	*Augusta*	C. E.
Schwartz, Adolph August	*Brillion*	C. E.
Seifert, Andrew	*Milwaukee*	C. E.
Shape, Alfred Charles	*Milwaukee*	Ch. E.
Sheriff, Frederick Beby	*Helena, Mont.*	M. E.
Shonat, Archie	*Madison*	C. E.
Simon, Albert Henry	*Ashland*	C. E.
Smith, Chauncey Lester	*Waukesha*	C. E.
Smith, Frederick Slocum Howland	*Janesville*	C. E.
Smith, Leon Albert	*Madison*	C. E.
Soergel, Robert John	*Milwaukee*	C. E.
Spray, Lester Ellsworth	*Lawrence, Kans. (Adv. Course)*	E. E.
Staehle, Paul Max	*Manitowoc*	E. E.
Steers, Leland Stanford	*Markesan*	E. E.
Stengl, Rudolph John	*Antigo*	Min. E.
Stewart, Frederick James	*Baraboo*	C. E.
Stoddard, Leroy Lester	*Platteville*	E. E.
Sturgeon, Edward Tyler	*Chicago, Ill.*	C. E.
Tack, Myron Anthony	*Marshfield*	C. E.
Taylor, Herbert Cecil	*Lancaster*	C. E.
Tobin, Ralph Casper	*Mellen*	Ch. E.
Toye, Herbert Coleman	*Decorah, Ia.*	E. E.
Trayer, George William	*Lansing, Ia.*	C. E.
Vroman, Harry Westrope	*Verona*	C. E.
Ward, Oscar Gardien	*Fond du Lac*	M. E.
Warth, Edward Christian	*Milwaukee*	E. E.
Wasson, Joe Houston	*Smithville, Ark.*	C. E.
Waterman, Ivan Frederick	*De Land, Fla.*	C. E.
Watkins, Robert Marsh	*Milwaukee*	M. E.
Wehner, Stephen	*Madison*	C. E.
Wendt, Carl Albert	*Waterloo*	E. E.
Whomes, Walter Dewit	*Madison*	E. E.
Wiedenbeck, Harry John	*Mauston*	C. E.
Wile, Harold Davidson	*Chicago, Ill.*	E. E.
Wiley, Raymond Aldred	*Nekoosa*	C. E.
Wilkins, Benona Charles	*Sharon*	E. E.
Willmore, Howson Edward	*Waukegan, Ill.*	E. E.
Winterbotham, Ralph William	*Madison*	E. E.
Wiskocil, Clement Tehle	*Milwaukee*	C. E.
Wolff, Werner Peter	*Cumberland*	Min. E.
Woolhiser, Herbert Ladue	*Madison (Adv. Course)*	C. E.
Yoshida, Henry Tsunezo	*Tokyo, Japan*	E. E.
Yu, Liang	*Shanghai, China (Adv. Course)*	C. E.
Zimmerman, Fred Russell	*Madison*	M. E.

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SOPHOMORES

Abell, Harry S.	*Joliet, Ill.*	C. E.
Abernathy, James Logan	*Kansas City, Mo.*	E. E.
Achtenberg, Charles Albert	*Madison*	E. E.
Adlington, Earl Raymond	*Viroqua*	E. E.
Alaniva, Charles Robert	*Lead, S. D.*	C. E.
Anderson, Earl Ando	*Hitchcock, S. D.*	E. E.
Arps, Edmund John	*New Holstein*	E. E.
Bacon, Vaughan Robert	*Florence, Nebr.*	E. E.
Ballard, Roscoe Frederick	*Milwaukee*	M. E.
Ban, Rinji	*Tokyo, Japan*	M. E.
Bardin, Harry Melvin	*Whitefish, Mont.*	E. E.
Barker, George, Jr.	*Sparta*	Min. E.
Becker, Dean Brown	*Fort Atkinson*	Ch. E.
Bentz, Fred August	*Nekoosa*	C. E.
Bergmann, Henry Ernest	*Milwaukee*	E. E.
Best, Byron Gray	*Ironwood, Mich.*	Min. E.
Bixby, James Orr	*Evansville, Ind.*	M. E.
Bliss, William Desmond	*Wauwatosa (Adv. Course)*	Ch. E.
Blodgett, Charles Wallace	*Green Bay*	C. E.
Boisen, Anton Peter	*Cataract*	Min. E.
Boissard, Richard	*Madison (Adv. Course)*	E. E.
Bolt, Walter Charles	*Madison*	E. E.
Bonneville, Guidose James	*Rib Lake*	E. E.
Borchert, Raymond Charles	*Milwaukee*	E. E.
Borchsenius, Harold	*Madison*	Min. E.
Brady, Laban Jenkins	*El Reno, Okla.*	M. E.
Brintnall, Percy Cosson	*Kalispell, Mont.*	Min. E.
Brooks, Gale Merriam	*Zion City, Ill.*	C. E.
Bucklin, Alexander Hollis	*Madison*	E. E.
Buettell, Roger Bross	*Dubuque, Ia.*	C. E.
Bullard, Lester Hiram	*Evansville*	M. E.
Burke, Kenneth Richard	*Manitowoc*	Ch. E.
Burns, Thomas Stephen	*Watertown, N. Y.*	E. E.
Buxton, Vernon Roy	*Spooner*	E. E.
Cahill, Ralph Hughes	*Milwaukee*	C. E.
Campbell, Hugh Morton	*Madison*	C. E.
Carper, Armistead Fitzgerald	*Denver, Colo.*	M. E.
Carroll, Gerald Aloysius	*Appleton*	C. E.
Cash, Frank Irvin	*Madison*	M. E.
Chandler, Milton Evans	*Racine*	M. E.
Charlesworth, Frank Manley	*Kaukana*	C. E.
Childs, Leonard Chapin	*Oak Park, Ill.*	C. E.
Church, Arthur Potter	*Whitewater*	M. E.
Cobb, Arthur, Jr.	*Cleveland, O.*	E. E.
Conklin, Eugene Arthur	*Roslyn, L. I.*	Min. E.
Consoer, Arthur William	*Oak Park, Ill.*	C. E.
Corbett, Richard Adkins	*National Home*	M. E.

Corner, Douglas Calvert	*Platteville*	Min. E.
Crumpton, Kenneth Radford	*Superior*	E. E.
Deadman, Hazel Belle	*Madison*	E. E.
Decker, Ramsay Prescott	*West de Pere*	E. E.
Dexter, Willis Edmond	*Dubuque, Ia.*	M. E.
Divoll, Allen Elmer	*Sparta*	E. E.
Douglas, Clayton Orville	*Oshkosh*	E. E.
Dressendorfer, Arthur Emil	*Madison*	E. E.
Duffie, George Lauren	*Ripon (Adv. Course)*	C. E.
Dyer, Claude Just	*Lebanon, Ill.*	Min. E.
Eidemiller, Howard Nelson	*La Crosse*	Min. E.
Eleazarian, Aram Moyses	*Teheran, Persia*	E. E.
Elmore, William Chapman	*Green Bay*	M. E.
Emerson, Ernest Willett	*Pewaukee*	E. E.
Emmert, Harry Davis	*Muskogee, Okla.*	E. E.
Engsberg, Ralph William	*Lake Mills*	E. E.
Epstein, William Carl	*Madison*	M. E.
Erickson, Kenneth William	*Racine*	Ch. E.
Erwin, Lawrence Boynton	*Milwaukee*	M. E.
Erwin, Thomas Sweeney	*Madison*	C. E.
Evans, Melvin James	*Riverside, Ill.*	M. E.
Everhart, Floyd Samuel	*Oshkosh*	M. E.
Fess, Perry Thomas	*Madison*	C. E.
Fisher, Herbert Charles	*Beaver Dam*	C. E.
Fitch, William Kountz	*Rockford, Ill.*	M. E.
Fletcher, Freeman Douglass	*Morrison, Ill.*	M. E.
Fraser, Erwin Miles	*Milwaukee*	M. E.
Frost, Arthur Henry, Jr.	*Rockford, Ill.*	Ch. E.
Gates, Clarence William	*Beetown*	C. E.
George, Marshall Woods	*Chicago, Ill.*	M. E.
Giebel, Raymond	*Nelson*	M. E.
Gielow, Walter Charles	*Manitowoc*	C. E.
Gillette, Edmond Stephen	*Aurora, Ill.*	M. E.
Glasgow, Leon Isaac	*Milwaukee*	C. E.
Goodland, Rudyard Lewis	*Racine*	Min. E.
Griswold, John William	*West Salem*	M. E.
Haley, Harold Joseph	*Watertown, N. Y.*	C. E.
Halladay, Franklin Stanley	*Plover*	C. E.
Hardie, Augustus Brunner	*Philadelphia, Pa.*	M. E.
Harker, Harvey Merton	*Ft. Dodge, Ia.*	Ch. E.
Harrison, Stanley Herbert	*La Crosse*	E. E.
Hathaway, Warner	*Beaver Dam*	M. E.
Hawkins, Burton Hynard	*Tunnel City*	M. E.
Hawthorn, Guy Edwin	*Monroe*	M. E.
Heimbach, Elbert Blaine	*Honey Creek*	E. E.
Hendee, Ceilan Abner	*Milwaukee*	E. E.
Hicks, Luther Reuben	*Oshkosh*	Min. E.
Hitt, William Mayo	*Olympia, Wash.*	E. E.
Hopkins, William Thompson	*Madison*	C. E.
Houghton, Samuel Locke	*Chicago, Ill.*	Min. E.

Hubbell, Wolcott Wood	*Madison*	M. E.
Hughes, Robert Davis	*Dayton, O.*	C. E.
Hunting, Ralph William	*Fort Wayne, Ind.*	E. E.
Isabella, Nicholas Michael	*Spooner*	C. E.
Johns, Frank Wickizer	*Lake City, Minn.*	E. E.
Johnson, Nathan Ritchie	*Milwaukee*	E. E.
Johnson, Robert Hiram	*Galesburg, Ill. (Adv. Course)*	E. E.
Jones, Richard Henry	*Janesville*	E. E.
Kelm, Alfred Carl	*Faribault, Minn.*	E. E.
Kimball, John Thoroughgood	*Madison*	E. E.
King, Ralph Siemens	*Madison*	C. E.
Kleck, Carl Frederick	*Milwaukee*	Min. E.
Korst, Philip Burch	*Janesville*	M. E.
Krueger, Carl H.	*Stevens Point*	E. E.
Krueger, Forrest Julius	*Madison*	E. E.
Kuhns, George Roland	*Madison*	E. E.
Kunesh, Joseph Francis	*Stangelville*	C. E.
Labram, Frederick William	*Chicago, Ill.*	Min. E.
Lake, Mack Clayton	*Brodhead*	Min. E.
Lampert, Benjamin Harrison	*Oshkosh*	C. E.
Lange, Ernest Otto	*Fond du Lac*	E. E.
Langworthy, Edward Phelps	*Chicago, Ill.*	M. E.
Larsen, Lawrence Arbuck	*Manistee, Mich.*	M. E.
Lawrence, Mortimer Mertz	*Beaver Dam*	C. E.
Li, Ming Ho	*Nanking, China (Adv. Course)*	Ch. E.
Livingston, John Kingsley	*Madison (Adv. Course)*	E. E.
Locken, Enoch	*Black River Falls*	E. E.
Lora, Marino Romero	*Havana, Cuba (Adv. Course)*	C. E.
Louret, Harry Abraham	*Hingham*	E. E.
Lowry, Lellis Lloyd	*Cresco, Ia.*	C. E.
Luckey, Carroll Hastings	*Madison*	C. E.
Lynch, Harry Claude	*Independence, Ia. (Adv. Course)*	C. E.
McCall, Charles Frederick	*Milwaukee*	E. E.
MacEachron, John, Jr.	*West de Pere*	M. E.
McEachran, Wilbur Hugh	*Rockford, Ill.*	M. E.
McFarland, Malcolm Fizer	*Keokuk, Ia.*	C. E.
McIntosh, Fabian Clifton	*Bradford, Pa.*	C. E.
McMurray, William Matthew	*Lake Preston, S. D.*	Min. E.
Maires, Lewis Kelsey	*Madison*	M. E.
Manegold, John Robert	*Milwaukee*	E. E.
Mereness, Harry Elmer	*Elkhorn*	C. E.
Meyer, Harrison A.	*Milwaukee*	E. E.
Miller, William Frederick	*Racine*	M. E.
Millspaugh, John Wheeler	*Milwaukee*	E. E.
Monson, Benjamin Harrison	*Chicago, Ill.*	Ch. E.

Moody, Ralph Edmund	*Madison*	E. E.
Morgan, Everette Kellogg	*Antigo*	M. E.
Nickel, Walter Frederick	*Butte, Mont.*	C. E.
Niquette, Raymond Joseph	*Lena*	C. E.
Noyes, Eugene Carter	*Marinette*	C. E.
O'Connor, Arthur James	*Milwaukee*	E. E.
Peter, Albert George	*Milwaukee*	M. E.
Pribnow, Albert Frederick	*Mellen*	E. E.
Priessman, Neil Young	*Red Oak, Ia.*	E. E.
Probert, Samuel Harold	*Alberta, Can.*	C. E.
Rather, Maximilian Frederic	*Shawano*	C. E.
Redfield, Frank Otis	*Stevens Point*	C. E.
Resseguie, Harold Daniel	*Watertown, N. Y.*	Ch. E.
Rosenkrans, Floyd McKee	*Oconomowoc*	E. E.
Rosenow, Ernst Eric	*Menasha*	M. E.
Ross, Livingston	*Rensselaer, Ind.*	M. E.
Rule, Elmer	*Linden*	E. E.
Schindler, Lloyd Marcus	*Monroe*	Min. E.
Schleck, Walter Hubert	*South Milwaukee*	M. E.
Schlick, Egbert Ralph	*Milwaukee*	E. E.
Schmitz, Nicolas Joseph	*Madison*	E. E.
Schneider, Andrew George	*Madison*	Ch. E.
Schoen, Raymond William	*Madison*	C. E.
Schroeder, Eric George	*Milwaukee*	C. E.
Schultz, Leslie Edward	*Mukwonago*	M. E.
Scoles, John Calvert	*Granton (Adv. Course)*	Min. E.
Seller, Henry Charles	*Amsterdam, N. Y.*	C. E.
Shafer, Clifford Bernard	*Muscoda*	C. E.
Sheriffs, Walter Alexander	*Milwaukee*	Min. E.
Shu, Leng Jah	*Kwei-chow, China*	M. E.
Sjoblom, Maurice Charles	*Grantsburg*	C. E.
Smart, Orren David	*Waukesha*	M. E.
Smith, Robert Matthew	*Madison*	C. E.
Steinberg, William Harrison	*North Freedom*	Ch. E.
Stephany, Erwin John	*Manitowoc*	M. E.
Stiles, Robert Lincoln	*Milwaukee*	E. E.
Stivers, Charles Paul, Jr.	*Kansas City, Mo.*	C. E.
Talbot, Ray George	*Sparta*	M. E.
Tanghe, Edward Franklin	*Milwaukee*	C. E.
Taylor, John Atkinson	*New Lisbon*	C. E.
Taylor, Joseph George	*Madison*	C. E.
Tennant, Herschel Vern	*Bedford, Ia. (Adv Course)*	C. E.
Teschan, Erhard Gilbert	*Milwaukee*	M. E.
Textor, Clinton Kenney	*Milwaukee (Adv. Course)*	Ch. E.
Thomas, Edward Francis	*Pewaukee*	E. E.
Thompson, Harold Montrose	*St. Louis, Mo.*	C. E.
Thompson, Oscar Theodore	*South Kaukauna*	M. E.
Vaughn, Courtland De Lane	*Denver, Colo.*	C. E.
Volquarts, Victor Henry	*Plymouth*	M. E.

Wahl, Arnold Spencer	*Chicago, Ill.*	Ch. E.
Walker, Emmett James Welch	*Oklahoma City, Okla.*	C. E.
Waltenberg, Romaine George	*Madison (Adv. Course)*	Ch. E.
Walter, Jay Douglas	*Berlin*	E. E.
Warner, Laird Amisee	*Grand Rapids*	C. E.
Weber, Henry	*Milwaukee*	M. E.
Welser, George Brinton, Jr.	*Milwaukee*	M. E.
Wheeler, Charles Edward	*Milwaukee*	E. E.
Whitney, Edward Nelson	*Madison*	C. E.
Williams, Verle Eynon	*Phillips*	E. E.
Wilson, Harry Albert	*Chicago, Ill.*	M. E.
Windfelder, Clifton William	*Milwaukee*	M. E.
Winkie, Howard Franklin	*Portage*	M. E.
Withington, Arthur Harding	*Baraboo*	C. E.
Wohra, Har Das	*Piro Shah, Punjab, India*	M. E.
Woo, Chang	*Canton, China*	Ch. E.
Würdemann, Converse	*Milwaukee*	Min. E.

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FRESHMEN

Alter Fred Leland	*Manitowoc*
Anderson, Harold Gilbert	*Whitewater*
Armstrong, Richard Noble	*Grand Rapids, Mich.*
Arnemann, George Elmer (Adv. Course)	*Two Rivers*
Asada, Toichi James	*Izushi, Japan*
Ayres, Albert Owen	*Sheldon, Ia.*
Baker, George Herbert	*Marshfield*
Baumgartner, William Frederick	*Pensaukee*
Becker, George Ellsworth	*Stoughton*
Bendt, Ernest Rudolph	*Kenosha*
Benet, Hugh	*Columbia, S. C.*
Bickel, Ferdinand De Witt	*Beloit*
Bickelhaupt, Ivan Adair	*Aberdeen, S. D.*
Blair, Walter Frank	*Waukesha*
Blakeman, Lloyd Jay	*Richland Center*
Bloecher, Walter Philip	*Carlstadt, N. J.*
Boeck, Christian Frederic	*Waukesha*
Bonsey, Andrew Vernon	*Pierre, S. D.*
Boor, Alden Kinney	*Sandusky, O.*
Boylston, John, Jr.	*Chicago, Ill.*
Bradley, Charles Harlow (Adv. Course)	*Milwaukee*
Brainard, Harry Dean	*Lone Rock*
Brandel, Wallace Lester	*Milwaukee*
Brasted, Daniel Benjamin	*Waukesha*
Bratberg, Ralph Nash	*Eleva*
Breckinridge, William Lewis	*Chicago, Ill.*
Breit, Charles	*Waupaca*
Broders, Claude Emil	*Marshfield*
Brodesser, Roman August	*Milwaukee*

Burger, Edward	*Texarkana, Tex.*
Butz, Charles Harold (Adv. Course)	*Mazomanie*
Campbell, Floyd Delmont	*Carpentersville, Ill.*
Carpenter, Russell Hand	*Racine*
Cavanagh, Raymond Thomas	*Watertown, N. Y.*
Chamison, Hyman	*Lead, S. D.*
Chang, Kochow Ting-Chin (Adv. Course)	*Wusih, China*
Chang, Moshih (Adv. Course)	*Ning po, China*
Churchill, Warren Roy	*Hayward*
Clark, Henry Wesley	*Niagara Falls, N. Y.*
Clas, Rubens Frederick	*Milwaukee*
Cobaugh, Harry Augustus	*Washington, D. C.*
Collard, Justus Clark (Adv. Course)	*Red Oak, Ia.*
Connolly, George Henry	*Racine*
Cooley, Gilbert Stanley	*La Grange, Ill.*
Cowin, Leo Vivian	*Lead, S. D.*
Crawford, John James	*Menasha*
Crowell, Joseph Addison, Jr.	*Iron Mountain, Mich.*
Cummins, James Albert	*Des Moines, Ia.*
Cunnien, Charles Stewart	*Madison*
Davidson, Carl Nathan	*Mauston*
Davin, Charles Clement	*New Richmond*
Davin, Thomas Edward	*New Richmond*
Davis, Harold Marvin	*La Crosse*
Davis, Llyod Edward	*Redgranite*
Davy, Frances Joseph	*Madison*
Dexheimer, Earl Chambers (Adv. Course)	*Fort Atkinson*
Ebersole, Charles David	*Sterling, Ill.*
Edmunds, Wade Melvin	*Aberdeen, S. D.*
Ellsworth, Charles West	*Escanaba, Mich.*
English, Clifford Martin	*Arcadia*
Evans, John Clement	*Evansville*
Evanson, Henry Bernard	*Mt. Horeb*
Farrand, Ira William	*Galesville*
Feiler, William Revel	*Evanston, Ill.*
Ferry, Phillips Barlow	*Milwaukee*
Findeisen, Carl Raymond (Adv. Course)	*Green Bay*
Finley, Leonard Paul	*Wymore, Nebr.*
Fisher, Glenn Bailey	*Janesville*
French, Everitt Edwin	*Madison*
Frisbie, Charles George	*Hartland*
Fromm, Edward William	*Milwaukee*
Fuller, Howard Rowson	*Bainbridge, N. Y.*
Gehrmann, John Henry (Adv. Course)	*Davenport, Ia.*
Gelein, Edwin Anders	*Eau Claire*
Gettelman, William Frederick	*Escanaba, Mich.*
Goss, William Azell	*La Grange, Ill.*
Grann, James Irving	*Madison*
Grenfell, Donald Stuart (Adv. Course)	*Madison*

Greenwood, Donald Whittier (Adv. Course)	*Farmington, Me.*
Gruetzmacher, Clarence Saylor	*Milwaukee*
Guenther, Oscar Frederick	*Campbellsport*
Hackett, Clifford Stanley	*Kenosha*
Halsted, James Ellinwood	*Baraboo*
Harries, Harry George	*Milwaukee*
Heider, Harvey Banderof	*Oshkosh*
Henderer, Angus McNaughton	*Milwaukee*
Hendricks, John Herbert	*Watertown, N. Y.*
Hengfuss, Chester Arthur	*Westfield*
Henze, Henry Carl	*Iron Mountain, Mich.*
Hinckley, John Arthur	*Madison*
Hoeveler, Leo George	*Madison*
Hoffman, Leslie Carl	*Waterloo*
Holmes, William Heberling	*Washington, D. C.*
Horstkotte, Gerhardt August	*Ellsworth*
Horswell, Laurence Alden	*Kenilworth, Ill.*
Horton, Lisle Delos	*Caledonia*
Hough, Randall Sherman	*Sibley, Ia.*
Houston, MacLean	*San Antonio, Tex.*
Hrobsky, Arthur Edward	*Fort Atkinson*
Hutchinson, John Troy	*Madison*
Jahns, Edward Julius	*Fairwater*
Joerns, Oliver Wood	*Sheboygan*
Johnson, Godfrey	*Superior*
Johnson, John Franklin	*Muskogee, Okla.*
Jones, Albert Curtis	*El Paso, Ill.*
Kahn, Leon	*Milwaukee*
Kehlor, James Malcolm	*Kenosha*
Kehrmann, Rolla (Adv. Course)	*Bonne Terre, Mo.*
Kemp, Ralph	*Tipton, Ind.*
Kernan, Thomas Harold	*Chicago, Ill.*
Kerndt, Arthur Maurice	*Lansing, Ia.*
Keuck, Max William	*Butte, Mont.*
Klotsch, Karl William	*Appleton*
Knoll, Waldemar Arthur	*Milwaukee*
Kops, Abner Elias	*Milwaukee*
Larson, Harold Otto	*Racine*
Lewis, George Wilber	*Oshkosh*
Lewis, Raymond Roy	*Richland Center*
Libke, Robert Herman	*New Holstein*
Links, Gordon Packard	*Grand Rapids, Mich.*
Little, Claudius Barton	*Washington, D. C.*
Loch, Harold D.	*Calumet, Mich.*
Long, Vinje M. (Adv. Course)	*Webster, S. D.*
Lowry, Frank Butler	*Colfax*
McConnell, Colvin Savage	*Omaha, Nebr.*
McKay, Frederick William	*Oshkosh*
MacLaren, Louis Lachlan	*Joliet, Ill.*

MacLay, Graham Robert	*Janesville*
McLean, James Calvin (Adv. Course)	*Waukesha*
Macnish, George Gaylord	*Stevens Point*
Marshall, Harry Alexander	*East Troy*
Martin, Byron James	*Lodi*
Mason, Arthur (Adv. Course)	*Aberdeen, S. D.*
Maxon, Glenway, Jr.	*Milwaukee*
May, Phillip Willard	*Madison*
Meese, Fred Arthur	*Michigan City, Ind.*
Meisekothen, Robert John	*Madison*
Miller, Peter Henry	*Milwaukee*
Mitchell, George Allen	*Montello*
Moe, Olaf Rudolph (Adv. Course)	*Pensaukee*
Morgan, William Richard	*Oshkosh*
Morris, Leslie Roslyn	*Madison*
Motoyama, Tokuzoh	*Satsuma, Japan*
von der Muehlen, Charles Arthur	*Milwaukee*
Murphy, James William	*Cato*
Murtha, Carroll	*Milwaukee*
Ofstie, Harold Sigvold	*Eau Claire*
Olson, Clifton Anton (Adv. Course)	*Cornell*
Osterheld, Clark McKinney (Adv. Course)	*Stoughton*
Paine, Paul Milton	*New Holstein*
Peil, Edward Gyans	*Racine*
Phillips, Harold Irving	*Calumet, Mich.*
Pomeroy, George Grove	*Madison*
Popelka, Charles Jerry	*Racine*
Power, Thomas Francis	*Madison*
Quick, Edward Connell	*Madison*
Ray, John Murray (Adv. Course)	*Reedsburg*
Redel, Paul Louis	*Milwaukee*
Reed, Ovid Melbourne	*Darien*
Reinhard, Walter Otto	*Reeseville*
Replinger, Roy Lodawick	*Madison*
Reynolds, Charles Ray	*Watertown, N. Y.*
Richards, Clarke Arno	*Madison*
Rinehimer, Charles Albert	*Elgin, Ill.*
Robertson, George William	*Wymore, Nebr.*
Rovelstad, Odin Peter	*Elgin, Ill.*
Rudolph, Chester Davis	*Yonkers, N. Y.*
Ryan, Edmund	*Cuba City*
Sabin, Jean Frederick	*Watertown*
Sackerson, Edwin Axel	*Iron Mountain, Mich.*
Salmon, Wallis Samuel	*Mineral Point*
Schaus, Walter Peter George	*Milwaukee*
Shickedantz, Eugene Edward	*Oshkosh*
Schmidt, Erwin John	*Milwaukee*
Schmidt, Frederick Julius	*Milwaukee*
Schmitt, Herbert Clarence	*Milwaukee*

Schneider, William Joseph	*La Crosse*
Schoewe, Walter Henry	*Milwaukee*
Seeley, Raymond Russell	*Spring Valley*
Selden, Stanley James	*Dexterville*
Sewall, Fred Alexander	*Racine*
Simpson, George Lane	*Oshkosh*
Sinz, Edwin Gottfried	*Elkhart Lake*
Sipp, Edward Arden	*Watertown*
Smith, Albert Madison	*Muskogee, Okla.*
Smith, Lyle Fassett	*Sioux Falls, S. D.*
Snow, Barton Sperry	*Batavia, Ill.*
Snow, Wilbur Talmadge	*Batavia, Ill.*
Sperry, Carleton Dexter (Adv. Course)	*Phillips*
Spoor, Leo Elmer	*Kenosha*
Starkey, William Henderson	*Pierre, S. D.*
Steere, Maynard Joseph	*Dayton, Mont.*
Stevens, Berry Thane	*Chicago, Ill.*
Stoll, Hugo Philip	*Kiel*
Swanson, Earl Grover Leonard	*Chicago, Ill.*
Swartz, John William	*Genoa Junction*
Sweeney, Charles Andrew (Adv. Course)	*Beloit*
Talbot, Frank Merl	*Limeridge*
Terry, Ralph Hooper	*Lowell*
Theobald, Jesse Edward	*Madison*
Thwaits, Frederick George	*Milwaukee*
Tolhurst, William Henry, 2nd	*Milwaukee*
Tuttle, Ray Charles (Adv. Course)	*Madison*
Valentine, Everett Milton	*Ephraim*
Van Lone, Earl Moses (Adv. Course)	*Beloit*
Van Vleck, Harry Hill	*Superior*
Walters, Harry George	*Milwaukee*
Walters, Harvey Henry	*Sparta*
Warner, Rollin Aldrich	*Centralia, Ill.*
Warren, Rupert Leon	*Milwaukee*
Weinhagen, Louis Frederick	*Milwaukee*
Weldon, Theodore Tefft	*Chicago, Ill.*
Weller, Dan Brown	*Fond du Lac*
Wells, Francis Lee	*Whitewater*
Wheeler, Francis Foss	*Milwaukee*
Wheeler, Leo Richard	*Geneva, Ill.*
White, Harry Edwin	*Brooklyn*
Williams, Herbert Eugene	*Belleville*
Wilsey, Frederick Sheldon	*Chicago, Ill.*
Wilson, Edward Everett	*Linnton, Ore.*
Wilterding, Forest Eugene	*Wausau*
Winters, Ray Frederick	*Dertoit, Mich.*
Wise, Lyle Deards	*Madison*
Witt, Edward Oscar	*Marshfield*
Wolff, Arthur Carl	*Milwaukee*

Wolverton, Fred Melville	*Oshkosh*	
Wright, Leon Alton (Adv. Course)	*Delavan*	
Young, John Ward	*La Crosse*	
Youngberg, George Edward	*La Crosse*	
Yudowitch, Harry	*Hartford, Conn.*	
Yunger, Joseph William	*Ashland*	
Zabel, Harold Frederick	*Sharon*	
Zee, Jeshine Zohn (Adv. Course)	*Shanghai, China*	

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ADULT SPECIALS

Ballesteros, Jose	*Monclova, Coah, Mex.*	
Bell, Herbert Lorn	*Milwaukee*	
Bohan, Ira James	*Avoca*	
Bullerjahn, Adolph David	*Milwaukee*	E. E.
Colbeck, Frederick Wm.	*Superior*	
Cowalsky, William Max	*Milwaukee*	
Dawson, Francis Anderson	*Reynolds, Ill.*	C. E.
Doyle, Ernest Patrick	*Marinette*	
Engel, John Ferdinand	*Oshkosh*	
Garlock, Lewis Franklin	*Racine*	M. E.
Greenwood, Charles Herbert	*Milwaukee*	C. E.
Hall, Melville Cooper	*New Paltz, N. Y.*	
Hoyt, Ralph Sherman	*Schenectady, N. Y.*	M. E.
Koenig, Herman Henry	*Milwaukee*	E. E.
Kottnauer, Edwin Hubert	*Milwaukee*	M. E.
Krueger, Ferdinand Henry	*Milwaukee*	
Laue, Gilbert Eric	*Milwaukee*	
Meincke, John William	*Milwaukee*	Ch. E.
Miller, William Salmeron	*Hixton*	
Moiseyeff, Leonard Boris	*Tomsk, Siberia*	E. E.
Nelson, Benjamin Louis	*La Crosse*	M. E.
Perkins, Joseph Manning	*Hudson, Mass.*	
Sandberg, Henry Theodore	*Madison*	M. E.
Steudel, George Elias	*Chilton (Adv. Course)*	M. E.
Stewart, Lee Hayne	*Madison*	Min. E.
Strothmann, Oliver Ernest	*Milwaukee*	M. E.
Wade, John Cedric	*Muscoda*	C. E.
Walters, Lee David	*Madison*	M. E.
Washburne, Raymond Heath	*Pewaukee*	Min. E.
Zorsch, Edward Albert	*Brighton, N. Y.*	C. E.

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LAW SCHOOL

THIRD YEAR

Campbell, George	*Madison*
Coorsen, Louis Arthur, B. A., g	*Milwaukee*
Crowns, Arthur John	*Nekoosa*
Duckert, Richard Frederick	*Cottage Grove*
Emmett, Shirley Lincoln	*Racine*
Esch, Fred Henry, B. A.	*Manitowoc*
Francis, Tim Alvano, B. A.	*Fargo, N. D.*
Goldschmidt, William Jacob	*Madison*
Grady, Albert William, B. A.	*Port Washington*
Haase, Oscar Rudolf, B. A.	*Milwaukee*
Hanson, John Arndt	*Muskegon, Mich.*
Harnden, Emery David	*Madison*
Hirsch, Marx, B. A.	*Madison*
Hogan, James Mangan, B. A.	*Fond du Lac*
Horan, Emmet, Jr.	*Eau Claire*
Jones, John Reese	*Columbus*
Leicht, George Jacob	*Menomonee Falls*
Malig, Harvey Augustus	*Milwaukee*
Malone, James Francis	*Juneau*
Meyer, Frank Collis	*Lancaster*
Noyes, Haskell, B. A.	*Milwaukee*
Orr, Albert Wallace, B. A.	*Springfield, Mo.*
Pease, Clifford Coleman	*Madison*
Peterson, Alvin Benjamin, B. S.	*Soldiers' Grove*
Roberts, John Archibald	*Columbus*
Sachtjen, Herman William, B. A.	*Madison*
Stengel, Alvin Lawrence	*Jefferson*
Te Selle, Clarence John	*Sheboygan Falls*
Wong, Ko-un	*Hankow, China*

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SECOND YEAR

Baker, John Sidney, B. A.	*Augusta*
Benson, John Cabot	*Heron Lake, Minn.*
Benton, Homer Herrington, B. A.	*Richland Center*
Boyce, Merton Vernal	*Mt. Horeb*
Brill, Herman Oswald	*Columbus*
Bunker, Eugene Francis	*Madison*
Burgess, Kenneth Farwell, B. A.	*Oshkosh*
Cady, Emil Charles	*Kilbourn*
Cerminara, Angelo	*Milwaukee*
Clark, Oliver Alphonso	*Chattanooga, Tenn.*
Clark, Robert Peter	*Elroy*
Connor, Craig Prentice	*Auburndale*
Duffy, Francis Ryan, B. A.	*Fond du Lac*

Falge, Ottmar John	*Manitowoc*
Frazer, George Enfield	*Anamosa, Ia.*
Goggins, Hugh Williams	*Grand Rapids*
Haddow, Winfred Griffin	*River Falls*
Hannan, William Frawley, B. A.	*Milwaukee*
Holmes, Donald Safford	*Duluth, Minn.*
Hoyt, Ralph Melvin, B. A.	*Madison*
Jenks, Frank	*Dodgeville*
Kerschensteiner, Mark Joseph, B. A.	*Jefferson*
Lockwood, Edward Harrison, B. A.	*Peru, Ind.*
Luhman, George Burton, B. A.	*Belvidere, Ill.*
Martin, Hal Roger	*Madison*
Meuer, William Joseph, B. A.	*Madison*
Miner, Oliver H.	*Madison*
O'Keefe, John Joseph	*Portage*
Quinn, Lewis James, B. A.	*Waterford*
Stafford, Harold Stanley	*Eau Claire*
Stiles, Bennett Phelps	*Sparta*
Thomas, John Lawson Baldwin, Jr.	*Madison*
Toebaas, Oscar Theodore	*Long Beach, Cal.*
Velte, Charles Henry	*Poy Sippi*
Whaley, Vilas Henry	*Benton*

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FIRST YEAR

Avery, Charles Henry	Quincy
Barrett, Stephen Austin	*Chippewa Falls*
Beers, William Charles	*Platteville*
Corey, Harris Lorenzo, B. A.	*Toledo, O.*
Cudahy, Clarence John, B. A.	*Milwaukee*
English, Norman Allen	*Arcadia*
Gehl, Edward John	*Hartford*
Gross, Manfred Stephen	*Milwaukee*
Hallam, Clark	*Sioux City, Ia.*
Halvorson, Hans Marius	*Menomonie*
Helland, Randolph Olaf	*Mt. Horeb*
Hibbard, Ralph Rollins	*Wauwatosa*
Hill, Charles Laurence	*Indianapolis, Ind.*
Johnson, Edward Elsworth	*Waupaca*
Laney, Willard John	*Dousman*
Lewis, Leon Lawrence	*Milwaukee*
Longbotham, Lyle Victor	*Cuba City*
Lorenz, LeRoy Blood	*Milwaukee*
McPherson, LeRoy	*Dodgeville*
Mahoney, Emmett Paul	*Viroqua*
Mead, Leonard Charles	*Geneva, Ill.*
Meilahn, William Oscar	*Kewaskum*
Miller, Boynton King	*Fond du Lac*
Noonan, Harry Carruthers, B. A.	*Madison*

Ohm, Howard Frederick	*Milwaukee*
Paul, Milton James	*Platteville*
Powell, Charles Healy	*Milwaukee*
Simpson, Jefferson Allan, B. A.	*Shullsburg*
Sizer, Randolph Spelman	*Coram, Calif.*
Tolg, Clarence Charles	*Waukesha*
Weinandy, Oliver Roman, Ph. B.	*Cochrane*
Wilkie, Harold M.	*Fond du Lac*
Williams, Jay Henley	*Gettysburg, S. D.*
Worthington, George Edmund	*Madison*

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SENIORS IN LETTERS AND SCIENCE ELECTING LAW STUDIES

Barber, Samuel Lyman ls	*Springfield, Ky.*
Butt, William Edward ls	*Woodburn, Ind.*
Coe, Laurence Smith ls	*Barron*
Doe, Arthur Brittan ls	*Milwaukee*
Eierman, Arthur Charles ls	*Milwaukee*
Gates, James Roberts ls	*Manchester, Ia.*
Heilman, Roman August ls	*Madison*
Johnson, Justin LeRoy ls	*Wausau*
Jones, Quincy Journey ls	*Freeport, Ill.*
Kearney, Thomas Matthew, Jr., ls	*Racine*
McDonald, James John ls	*Centuria*
Martin, Patrick Henry ls	*Fond du Lac*
Meyers, Edwin Aaron ls	*Evansville*
Noll, Oscar Jacob ls	*Milwaukee*
Ruble, Jesse Jones ls	*Platteville*
Spohn, William Henry, ls	*Janesville*
Taylor, Henry Sterling ls	*Sioux City, Ia.*

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LAW SPECIALS

Ames, John Francis	*Minocqua*
Anderson, John Brown	*Plainfield, Ill.*
Bergener, Charles Oliver	*Shullsburg*
Burns, Robert Hamilton	*Grand Rapids, Mich.*
Cadigan, John Andrew	*Superior*
De Witt, Jesse Alfred	*Montford*
Evans, George Beaconfield	*Marinette*
Fein, Alfred Erwin	*Milwaukee*
Fletcher, Clark Robinson	*Waukesha*
Foster, Warren Blaine	*Hurley*
Frudden, Fred Alfred	*Madison*
Fuchs, Carl Ernest	*Chicago, Ill.*
Fuller, Lynn	*Benton*
Geraldson, Elmer Stanley	*Manitowoc*
Griffin, Vaughn Irving	*Mason City, Iowa*
Harshaw, Myron Turner	*Stevens Point*

Justeson, Bird Marion	*Augusta*
Kempley, Chester Charles	*Packwaukee*
Lau, Lloyd William	*Madison*
Lawrie, Ida Maggie Cuthbertson	*Madison*
McKinney, Fred'k Harold	*Butternut*
Markus, Frank, Jr.	*Medford*
Nehs, Victor Wilson	*Marshfield*
Parmentier, Jules Merrill	*Green Bay*
Riley, Peter Francis	*Elroy*
Ritland, Owen	*Elroy*
Schroeder, William August	*North Milwaukee*
Smith, Irving Winfred	*Iron Mountain, Mich.*
Somers, Lewis Jack	*Madison*
Strouf, Anton D.	*Michicot*
Tait, Lloyd Bruce	*Mason City, Ia.*
Yantis, George Frank	*Olympia, Wash.*
Zentner, Erwin Herbert	*Milwaukee*

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COLLEGE OF AGRICULTURE

Long Course

SENIORS

Anderson, Martin	*River Falls*
Anthon, Laures	*Hammond, La.*
Axley, Walter	*Cleveland*
Baer, Arthur Christopher	*West Bend*
Bean, Roy Perry	*De Soto*
Bergh, Otto Ingman	*Madison*
Blank, George August	*Grafton*
Carncross, Elmer Aeneas	*Lodi*
Carter, George Byron	*Madison*
Clark, Warren William	*River Falls*
Davidson, Thomas Rustone	*Evansville, Ind.*
Doerschuk, John James	*Shanesville, O.*
Doty, Harry W.	*Madison*
Dudgeon, Sidney Ball	*Madison*
Ernst, Claude B.	*Thompson, O.*
Finner, Ewald Reinhard	*Dodge*
Graham, John Cameron	*Madison*
Graul, Edward John	*Independence*
Hanson, Carl Hugo	*Elk Mound*
Howe, William Canterbury	*Boscobel*
Hulce, Ray Stillman	*Whitewater*
Jackson, William Malcolm	*Marinette*
Jelinek, Benjamin	*Milwaukee*
Jewett, Norman Lee	*Sparta*
Johnson, Hugh Christian	*Sheridan*
Juve, Oscar	*Stoughton*

Leith, Benjamin Donald	*Madison*
McNown, Mark Freeman	*Madison*
McNulty, James Bernard	*Avoca*
Meyer, Alfred Henry	*Grafton*
Moll, John Edwin	*Madison*
Morrison, Frank Barron	*Ripon*
Porter, Joseph Kinnicotte Potter	*Evansville*
Post, Robert Lewis	*Madison*
Rauchenstein, Emil	*Rice Lake*
Richards, Griffith	*Madison*
Roeseler, John Samuel	*Madison*
Sanders, Raymond Young	*Chicago, Ill.*
Schoenmann, Lee Roy Adolph	*Madison*
Scholfield, Harvey Haseltine	*Wausau*
Scott, Verner Ephraim	*Madison*
Smiley, Robert Flint	*Albany*
Smith, Harvey George	*Brandon*
Ullsperger, Herman Wenzl	*Algoma*
Warren, David Mack	*Chicago, Ill.*
White, Hubert Draper	*Oak Park, Ill.*
Wied, Walter Evan	*Waupaca*

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JUNIORS

Bahr, Lawrence	*Spring Valley*
Bailey, Elbert Gladstone	*West Bend*
Baker, Harrie Albert	*Decorah, Ia.*
Banker, Paul Philip tc	*Fort Atkinson*
Beecroft, Albert Bouffler	*Madison*
Berg, Anthony	*Bloomer*
Bigford, Gifford Llewellyn tc	*Manawa*
Brown, Adrian Abbott tc	*Waterloo*
Bullis, Clifford Bentz	*Eau Claire*
Buser, Alfred Leo	*Madison*
Bush, Charles William	*Waupun*
Canavan, John Patrick	*Appleton*
Cardenas, Francisco Marcos	*Saltillo, Coah, Mex.*
Cuff, Ovens Patterson	*Hortonville*
Dieter, William Albert	*Montfort*
Drescher, Henry Adolph tc	*Sun Prairie*
Foster, George Henry	*Evanston, Ill.*
Fromm, Arthur George	*Hamburg*
Frost, Harold Guernsey	*Almond*
Fuchs, Albert George	*Chicago, Ill.*
Gilman, Joseph Charles	*Racine*
Glasspoole, James Edward tc	*Mondovi*
Grunert, Clarence Ferdinand	*Monroe*
Hall, Eugene William	*Princeton*
Harrison, Erbie Lee	*Glasgow, Ky.*

Hart, Harry	*Humbird*
Hayes, Mark Webster	*S. Kaukauna*
Henke, Louis Albert tc	*Lowell*
Hoppert, Martin John	*Sheboygan*
Hughes, Elmer Howard	*Rewey*
Hulburt, Clarence Hellings	*Wauwatosa*
Ibsen, Herman Lauritz	*Chicago, Ill.*
Jaquith, Allen Fourestier	*Elizabeth, N. J.*
Kadish, Halbert Leopold	*Milwaukee*
Kammlade, Stephen Girard	*Sparta*
Klumb, Hugo Gottfried Nicholaus tc	*Kewaskum*
Laird, James Alexander	*Madison*
Loos, Walter Martin	*Elkhart Lake*
McConnell, Charles Fremont	*Darlington*
Mackmiller, William Frederick	*Ashland*
Moore, George McMurtrie	*Jackson, Minn.*
Muck, Carl Seifert	*Jefferson*
Murray, Allen Kenneth	*Ripon*
Nelson, Martin Vincent	*Madison*
Newcomb, Henry Sage	*Pepin*
Noer, Oyvind Juul	*Stoughton*
Page, George Albert	*Ripon*
Parsons, Edgar	*Cleveland, O.*
Pflughoeft, Henry Andrew	*Algoma*
Polley, Earl Arthur tc	*Madison*
Portman, Andrew Nelson	*Chicago, Ill.*
Potter, Byron Sears	*Madison*
Reineking, Adolph George	*Appleton*
Reinking, Otto August	*Madison*
Rouzer, Paul Charles	*Madison*
Sanders, Charles Finney	*Westerville, Ohio*
Schreiner, Alf	*Westby*
Scoville, Walter Amasa	*Riverside, Ill.*
Seaton, Edward Arthur	*Madison*
Stangel, Otto Anton tc	*Tisch Mills*
Sutton, Luther Francis	*Madison*
Taylor, William Septimus	*Prentiss, Ky.*
Thompson, Arthur George	*Sun Prairie*
Thompson, Willard Chandler tc	*Sun Prairie*
Totman, Claire Carleton	*Lancaster*
Utgard, Myron Harrison	*New Richmond*
Wilson, Lewis Kemper	*Milwaukee*
Zander, Arthur George	*Milwaukee*

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SOPHOMORES

Alcorn, James Dunn	*Stevens Point*
Amodt, Marcus	*Viroqua*
Andree, Richard Ambrose	*Milwaukee*
Babcock, Edward Andrew	*Madison*

Babcock, Frank Gordon	*Kasota, Minn.*
Baird, William Lockhart	*Waukesha*
Barker, Roy Thomas	*Oconomowoc*
Barrand, Chester Arthur	*Sturgeon Bay*
Beattie, James Grey	*Arlington*
Bieri, Russell Bernhard	*Knapp*
Brown, Ralph Vernon	*Arena*
Bush, George Allen	*Louisville, Ky.*
Campion, Thomas Howard	*Montello*
Chiu, Chang Yüeng	*Wusih, China*
Chloupek, Eugene Joseph	*Manitowoc*
Crosby, Charles Logan	*Rhinelander*
Crosby, Reynale Richardson	*Madison*
Curtin, William Edwin	*Madison*
Dillon, Harry	*Mondovi*
Doerr, Harry	*Minneapolis, Minn.*
Dopke, Walter Albert	*North Milwaukee*
Drechsler, Charles Frank	*Butternut*
Garland, John Jefferson	*Wellington, Kans.*
Gay, Sidney	*Madison*
Gear, Hugh Leroy	*Menasha*
Gile, Bueford Monroe	*Richland Center*
Greenslit, Ezra May	*Belvidere, Ill.*
Grover, Edsel Mason	*Boise, Idaho.*
Hammersley, Ralph Walter	*Madison*
Healey, Claude Sprague	*Elgin, Ill.*
Hoeffel, Merrill Joseph	*Green Bay*
Hubble, William Martin	*Shelbyville, Ky.*
Huser, Francis Edward	*Cumberland*
James, John Ambrose	*Linden*
Kemp, William Henry	*Maplewood, N. J.*
Kilpatrick, Elmer James	*Belmont*
Klinka, John Simandl	*West Bend*
Knutsen, Martin Halvor	*Ridgeway*
Lamson, Robert Austin	*Madison*
Letts, Harlan Day	*Letts, Ia.*
Levin, Isidore	*Chicago, Ill.*
Levy, Edmond Gustave	*Milwaukee*
Loesch, Joseph Benjamin	*Chicago, Ill.*
Luther, Ernest Leonard	*Madison*
Lyford, Charles Conover	*Oak Park, Ill.*
McHugh, James Frank	*Aberdeen, S. D.*
Margoles, Nathan	*Milwaukee*
Maverick, James Slayden	*San Antonio, Tex.*
Mawhorter, Walter Ransom	*Wawaka, Ind.*
Meyer, Werner Eugene	*Kilbourn*
Michelstetter, Stanley	*Milwaukee*
Moh, Hsiang-yueh	*Shanghai, China*
Moore, George Elkington	*Madison*
Morgenroth, Alvin Stanford	*White Plains, N. Y.*

Murray, Reid Fred	*Manawa*
Nelson, Raymond Francis	*Corliss*
Ninman, Herman John	*Belle Plaine*
Oldham, Leslie Latham	*Madison*
Onsrud, Anton Edward	*Stoughton*
Oosterhous, John Jacob	*Waldo*
Opie, Howard Perry	*Warren, Ill.*
Opstedal, Anthon Johannes	*De Forest*
Peltier, Victor Michel	*San Francisco, Cal.*
Pinkerton, Fred Sylvester	*Waupaca*
Post, Clinton Blaine	*Oconto*
Potter, George Frederick	*Madison*
Powell, Thomas Charles	*Reedsurg*
Pratt, William Dudley, Jr.	*Indianapolis, Ind.*
Root, Herman Martin	*Viroqua*
Schmutzer, Anton Wencelaus	*Antigo*
Schuster, Raymond Herman	*Madison*
Solum, Karl John	*Merrill*
Stallard, John Earl	*Fairchild*
Stern, William Frank	*New London*
Sullivan, Dan Thomas	*Fort Atkinson*
Sur, Urban Francis	*Toledo, O.*
Tang, Tsic Yee	*Canton, China*
Thompson, Carl	*Curtiss*
Turnbull, Alan James	*Glencoe, Ill.*
Uber, Walter Fred	*Hartford*
Van Riper, John Crowell, Jr.	*St. Louis, Mo.*
Wahl, Richard Webster	*Chicago, Ill.*
Walz, John Martin, Jr.	*Freeport, Ill.*
Webbe, Albion Scotson	*Chicago, Ill.*
Wehrwein, George Simon	*Manitowoc*
West, Calvin Parker	*Waupaca*
Wilcox, Frederick Seacord	*Elgin, Ill.*
Wilcox, Raymond Boorman	*Madison*
Wild, George Frank	*Elmwood*
Woo, Kok San	*Canton, China*
Zahorick, John Anton	*Kewaunee*

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FRESHMEN

Alexander, Joseph Hope Hughes	*Madison*
Anagnos, Peter Thomas	*Madison*
Anderson, William Freeman	*Whitehall*
Armour, Myron Lavergne	*Mondovi*
Arnold, Harold Alicen	*Sharon*
Arpin, George Nienstedt	*Grand Rapids*
Barth, Frank Ernest	*Port Washington*
Becker, Joseph Aloysius	*Hurley*
Bennett, Ralph William	*Waterford*

Benoe, William Eugene	*Ashland*
Bluemke, Albert Arthur	*Westfield*
Boardman, William Clayton	*New Richmond*
Bowden, Charles Benjamin	*Rice Lake*
Brainard, George Earll	*Lone Rock*
Brereton, William Robert	*Lodi*
Brindley, Ralph	*Boscobel*
Brown, John Hickman	*Freeport, Ill.*
Buser, Arnold Alexander	*Madison*
Buth, Guido Frederick	*Waterloo*
Butler, Robert Parker	*Glen Ridge, N. J.*
Butz, Harry Noble	*Mazomanie*
Chapman, Clinton Joseph	*Darlington*
Chase, Stephen, 4th	*Cincinnati, O.*
Coe, Noble Milton	*Milwaukee*
Coleman, Walter Stephen	*Madison*
Conger, Earl M.	*Sac City, Ia.*
Cuff, Raymond Lee	*Manawa*
Currie, Neil Wilson	*Minneapolis, Minn.*
Dallwig, Herbert Carl	*Milwaukee*
Davis, Howard Lincoln	*Elizabeth, N. J.*
Duddleston, Benjamin Harrison	*La Valle*
Duerr, Herbert Jacob	*Wauwatosa*
Durnell, Donald Scott	*Hillsboro, O.*
Felland, Wetle Thorwald	*Madison*
Feuling, Leonard Valentine	*Madison*
Fletcher, John Archibald	*Chicago, Ill.*
Freehoff, William Adolf	*Coon Valley*
Fuente, Jesus de la Rodrigue	*Nadadores, Coah, Mex.*
Galloway, Edwin Pierce	*Fond du Lac*
Gibson, Obie Edward, Jr.	*Platteville*
Gonyon, Harvey Le Roy	*Milwaukee*
Graf, Paul Fred	*Kendalls*
Gunderson, Gerhard William	*Duluth, Minn.*
Halverson, Harry Bernhard	*Stoughton*
Haner, Fred Jacob	*Sun Prairie*
Hanson, Joel Hjalmar	*Eau Claire*
Haug, Martin Edward	*Stoughton*
Hayes, John Barry	*Madison*
Heineman, Warren Fred	*Sheboygan*
Hemenway, Alvin William	*New Richmond*
Henning, Erwin Lloyd	*Watertown*
Hertel, Joseph Paul	*Chilton*
Hoffman, Rubin Emmerich	*Chicago, Ill.*
Hogans, Walter John	*Oak Park, Ill.*
Holgren, Charles Sidney	*Fort Atkinson*
Hoppert, Ernest Herman	*Sheboygan*
Howard, Neale Frederic	*Milwaukee*
Howell, Thomas Robert	*Portage*

Iverson, Carl	*Kenosha*
Jacobus, John Anton	*Deerbrook*
Johnson, Allen	*Montclair, N. J.*
Johnston, Robert Moffat	*Hancock, Mich.*
Jones, Thomas Leslie	*Arena*
Juday, George Baltzer	*Millersburg, Ind.*
Juday, Wesley Denver	*Millersburg, Ind.*
Kade, Charles Frederick, Jr.	*Sheboygan*
Kelley, Leo Thomas	*Tomah*
Kelly, Paul John	*Milwaukee*
Kennedy, Martin Thomas	*Ashland*
Ketter, Walter Conrad	*Milwaukee*
Kieckhefer, Ferdinand Charles	*Milwaukee*
Krueger, Walter Edwin	*Menomonie*
Kuehlhorn, Walter Arnold	*Milwaukee*
Kuo, Tuar Shin	*Wusih, China*
Lawton, Jay W.	*Viola*
Layman, Kenneth Foss	*La Grange, Ill.*
Leaper, Earl Theodore	*Green Bay*
Leguia, José	*Lima, Peru*
Lester, John King	*Madison*
MacBride, Lawrence Harold	*Chicago, Ill.*
Macomber, Stephen Decatur	*New Lisbon*
Mahler, Eugene Henry	*Milwaukee*
Markowitz, Harry Arthur	*Chicago, Ill.*
Martin, Jay	*Bagley*
Mathys, John William	*Green Bay*
Maurer, Herbert Fred	*Sheboygan*
Maxwell, Arnold Ivan	*Fort Atkinson*
Meyer, Benno Walter	*Milwaukee*
Miller, Gilbert Allen	*Riverside, Ill.*
Murphy, James Henry	*Kewaunee*
Naffz, Louis Edwin	*Madison*
Nathan, Edward Columbus	*Chicago, Ill.*
Nelson, Herbert Edward	*Corliss*
Oftelie, Kenneth Theodore	*Stoughton*
Pan, Chu-Chi	*Kwangai, China*
Perry, Donald Strong	*Wendell, Idaho*
Perry, Ranson Davis	*Columbus, Ind.*
Potgilter, Dietlof Siegfred Marc	*Amersfoot, Transvaal, So. Africa*
Pott, Arthur Frederick	*Sheboygan*
Priddy, Emerson Bard	*Chicago, Ill.*
Prinsen, Otis Cornelius	*Sheboygan Falls*
Ritchart, Roy Cecil	*New Lisbon*
Ross, Sherman Gray	*Barton*
Runke, Rufus	*Algoma*
Sander, Herman	*West Salem*
Schaffer, Ferdinand Edward	*Power Lake*

Schmidt, Walter Emil	*Arcadia*
Schneck, Henry William	*Milwaukee*
Schreiber, Louis Erwin	*Baraboo*
Schreiber, Stewart Endicott	*Madison*
Schubring, Arthur Otto	*Madison*
Schultz, Eugene Schultz	*East Greenville, Pa.*
Scofield, John	*Edgerton*
Sell, Allan Michael	*New Holstein*
Sherman, Russell Gordon	*Milwaukee*
Sippel, George Bruno	*Chicago, Ill.*
Skavlem, Owen Benjamin	*Stoughton*
Smith, Chalma Berg	*Edmund*
Smith, George Washington, Jr.	*Pacific, Mo.*
Stafford, Robert Ridgeway	*Chicago, Ill.*
Stone, Francis Downing	*Lampson*
Tachan, Charles Gabriel	*Louisville, Ky.*
Tasker, John Bruce	*Chicago, Ill.*
Tawse, William Wright	*Toledo, O.*
Trewartha, William Clyde	*Hazel Greene*
Vance, Preston Thompson	*Louisville, Ky.*
Van Gent, Conrad Eugene	*Villa Grove, Ill.*
Wahl, Robert Christian	*Milwaukee*
Walbridge, Thomas Alexander	*Toledo, O.*
Walker, David Moseley	*Racine*
Wallis, John Lowell	*Milwaukee*
Way, Charles Thomas	*Fox Lake*
Weart, David Wilson	*Winnetka, Ill.*
Weaver, Everett Wesley	*Waukesha*
Williams, Clarence Charles	*Milwaukee*
Winkler, Thomas Lindsay	*Morrisonville*
Woodward, Judith	*Madison*
Yampolsky, Cecil Jacob	*Chicago, Ill.*

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MIDDLE COURSE—SECOND YEAR

Ainslie, James Elliot	*Beloit*
Allen, Ruben Christ	*Montfort*
Baird, Robert Dixson	*Evanston, Ill.*
Belz, Frank Arthur	*Visalia, Cal.*
Belz, George Andrew	*Visalia, Cal.*
Boston, Willis J.	*Stevens Point*
Bradley, Bruce Foster	*Toledo, O.*
Brophy, Allen Olmsted	*Elgin, Ill.*
Burton, Charles Frederick	*Billings, Mont.*
Conkey, Charles De Witt, Jr.	*Superior*
Conlin, Bernard Henry Jr.	*Wausau*
Dunwiddie, Walter Rockwood	*Delavan*
Elvehjem, Elmer Gerhard	*McFarland*

Field, Albert Martin	*Hartland*
Lange, Raymond Charles	*Eau Claire*
Langum, Torleif Nicholas	*Eau Claire*
Langworthy, Earl Elmer	*Edgerton*
Laraway, Fred Tait	*Joliet, Ill.*
Palmer, Glenn Alcott	*Brodhead*
Reid, William Albert	*Tennent, N. J.*
Robinson, Miles Albert	*Lake Geneva*
Smith, Elden Jerome	*Taylor*
Smith, Parker Merritt	*Tomahawk*
Stone, Gilbert Wright	*Chicago, Ill.*
Templeton, Kenneth Stuart	*Chicago, Ill.*
Wagner, Perry Shumway	*Green Bay*
Yates, Willard Wilson	*Burnett*

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MIDDLE COURSE—FIRST YEAR

Ailes, Adrian Sewell	*Madison*
Ailes, Charles Chesley	*Madison*
Baker, Arthur Andrus	*Soldiers Grove*
Benson, Clair Lorenzo	*Cambridge*
Berry, Brayton Lyon	*Duluth, Minn.*
Bowen, Paul Linde	*Oshkosh*
Carter, Fred Jr.	*Benton Harbor, Mich.*
Chrisler, Earl Sylvester	*Lodi*
Christianson, Carl	*Deerfield*
Church, Roy Arthur	*Janesville*
Craig, Orlin Perry	*Mukwonago*
Daube, Donald Ongley	*Chicago, Ill.*
Debbink, Henry Lawrence	*Milwaukee*
Detrich, Louis Frederick	*Ruxton, Md.*
Drummond, George Briggs	*Eau Claire*
Faucett, Robert Charles	*Laurium, Mich.*
Gluck, Karl	*Minneapolis, Minn.*
Hamilton, Reginald Nicholi	*Milwaukee*
Hayward, Edward Carleton	*South Easton, Mass.*
Hillman, Martin Arthur Christopher	*Spooner*
Holmes, George Adams	*Beloit*
Hoopes, Albert Warfield	*West Chester, Pa.*
Hopps, Hugh Martin	*La Moille, Ill.*
Householder, Glen Monroe	*Richland Center*
Howell, Robert Applegate	*Dayton, O.*
Hunter, Duncan Meredith	*Oak Park, Ill.*
Ingebritson, Arthur Louis	*Cambridge*
Jordan, Orlan Louis	*Joliet, Ill.*
Kavanaugh, James Nicholas	*Kaukauna*
Kraus, George Henry	*Chicago, Ill.*
Lamhofer, Eric	*Omaha, Nebr.*

Lawson, Henry Lambert	*Montclair, N. J.*
Marsh, Lawrence Kellogg	*Milwaukee*
Masuda, Tetsu T.	*Sanuki, Japan*
Novak, Emil Charles	*Antigo*
Palmer, Maitland Edgar	*Janesville*
Parker, Charles Strong	*Galesville*
Preston, William	*Juda*
Reeves, Alfred Burnham	*Oconto*
Richards, Forrest Orlow	*Sparta*
Robbins, William Seyton	*Greensburg, Ind.*
Robertson, George Newell	*Sidney, O.*
Rowe, George Faucett	*Milwaukee*
Sarkis, Boshuakian	*Constantinople, Turkey*
Sickels, Henry Lawrence	*Buffalo, N. Y.*
Smith, Guy William	*Bottineau, N. D.*
Tobin, Edward Peter	*Mellen*
Vanderkarr, Lyle Matthew	*Hebron, Ill.*
Ward, Alvn Beckwith	*Fort Atkinson*
West, Ernest De Garmo	*Amery*
Weston, Henry Griggs	*Duluth, Minn.*
Wild, John Edgerton	*Butte, Mont.*
Willey, John Leslie	*Burlington*
William, Newell Marcius	*Superior*
Williams, Milton David	*Warren, Ill.*
Withers, Robert Casey	*Buna, Texas*

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Home Economics

Albertson, Phyllis	*West Newberry, Mass.*	Junior
Andrus, Ruth Clarissa	*Madison*	Freshman
Baensch, Gesine Koehler	*Manitowoc*	Freshman
Biersach, Paula	*Milwaukee*	Freshman
Boll, Fern Esther t c	*Rice Lake*	Senior
Bradley, Clara Vivian	*Madison*	Freshman
Branegan, Gladys Allen	*Madison*	Sophomore
Breck, Marion Florilla	*Milwaukee*	Freshman
Brooks, Helen Winifred	*Madison*	Freshman
Brown, Susan Knight	*Luverne, Minn.*	Junior
Buell, Nora t c	*Burlington*	Senior
Bunnell, Mary Martha	*Madison*	Junior
Burton, Muriel	*Madison*	Freshman
Calkins, Kathleen Clinch	*Evansville*	Freshman
Caswell, Mildred C.	*Fort Atkinson*	Freshman
Coldwell, Valeria	*Blue Mounds*	Sophomore
Corning, Winifred Mary	*Iron Mountain, Mich.*	Freshman
Crosby, Bernice Lydia	*Madison*	Freshman
Dahm, Anna Margaret	*McGregor, Ia.*	Sophomore
De Ville, Elinor Marie	*Sheboygan*	Freshman
Dodge, Helen Josephine t c	*Monroe*	Junior

Dohmen, Anita Louise t c	*Milwaukee*	Senior
Drotning, Anna Elizabeth	*Deerfield*	Sophomore
Dykesten, Maybelle Leonora	*Madison*	Freshman
Ely, Lydia Baxter	*Canton, O.*	Sophomore
Enright, Eleanor Marie	*Janesville*	Sophomore
Fargo, Jennie Ethelyn	*Mt. Horeb*	Freshman
Fess, Leone Marie t c	*Madison*	Senior
Fess, Madeline	*Madison*	Sophomore
Finegan, Ann Catherine	*Boise, Idaho*	Sophomore
Fleming, Anna Rhea	*Chicago Heights, Ill.*	Junior
Fryette, Evangeline	*Madison*	Junior
Gaffron, Martha Otelia	*Plymouth*	Freshman
Gautschi, Irma Charlotte	*Washburn*	Sophomore
George, Iola Frances	*Monticello, Ia.*	Freshman
Gill, Gladys	*Marengo, Ill.*	Sophomore
Graves, Marion Ruth	*Chicago, Ill.*	Freshman
Gray, Hazel Marie	*Madison*	Sophomore
Heck, Florence Anna	*Aurora, Ill.*	Freshman
Howe, Grace Carrier t c	*Boscobel*	Senior
Hoyer, Harriet Elizabeth	*Madison*	Freshman
Jacobson, Thora Dorothea	*Madison*	Freshman
Jarvis, Florence May	*Madison*	Freshman
Jensen, Evelyn Harriet	*Madison*	Sophomore
Kelly, Christmas t c	*Milwaukee*	Senior
Ketchum, Maud Ella	*Madison*	Freshman
Koehler, Jennie Emma	*Menominee Falls*	Freshman
Kuehn, Antoinette	*Waukesha*	Freshman
Kuhns, Clarissa Augusta t c	*Madison*	Senior
Lewis, Dorothea	*St. Catharines, Ont.*	Freshman
Lewis, May C.	*Madison*	Freshman
Light, Florence Eloise	*Brooklyn, Ia.*	Freshman
Lindas, Ida Caroline	*Kenosha*	Junior
Llyod-Jones, Alice t c	*Hillside*	Senior
Lovell, Catherine Eldred	*Monticello, Ia.*	Junior
MacArthur, Catherine	*Madison*	Freshman
McCartney, Minnie Kathryn	*Belvidere, Ill.*	Freshman
Magee, Gertrude Elizabeth	*Galloway*	Freshman
Manning, Hazel	*Madison*	Sophomore
Martin, Harriet Genevieve	*Madison*	Junior
Mead, Hazel Marguerite	*Madison*	Senior
Meloche, Gladys Louise	*Madison*	Freshman
Minturn, Ruth	*West Allis*	Freshman
Montgomery, Frances M.	*Rochester, Ind.*	Freshman
Morris, Lulu	*Dodgeville*	Sophomore
Mutchler, Vera Virginia t c	*Madison*	Senior
Oakey, Edna Kathryn	*Madison*	Sophomore
Oliver, Mary Bertha	*Morrison, Ill.*	Junior
Olsen, Anna Margaret	*Madison*	Junior
Osborne, Eunice Elizabeth	*Madison*	Sophomore

Peck, Ruth Annette	*Evansville, Ind.*	Freshman
Perry, Amy Leona	*Evansville*	Sophomore
Pfund, Anna t c	*Madison*	Senior
Piper, Margaret Amelia t c	*Madison*	Junior
Post, Lillian Genevieve	*Madison*	Freshman
Rayne, Lucile Price	*Madison*	Sophomore
Reese, Josephine	*Chicago, Ill.*	Sophomore
Richards, Anna	*Madison*	Junior
Rogers, Mabelle Harriet	*Alpena, Mich.*	Sophomore
Runge, Elsie	*Madison*	Sophomore
Russell, Harriet Sophia	*Muncie, Ind.*	Sophomore
Schreiber, Ruth Irma	*Madison*	Freshman
Scofield, Florence Nichols	*La Crosse*	Sophomore
Scoville, Luella Mae t c	*Rockford, Ill.*	Junior
Smith, Eunice Grant	*Hinsdale, Ill.*	Freshman
Smith, Eunice Nancy	*Warren, Ill.*	Freshman
Stark, Saidee Ethel	*Sun Prairie*	Sophomore
Stegner, Mabel Jessie	*Sioux Falls, S. D.*	Sophomore
Stewart, Laura Miriam	*Baraboo*	Junior
Sutherland, Florence Mary	*Ironwood, Mich.*	Freshman
Swenson, Helen Katrina	*Madison*	Sophomore
Tripp, Belle Chamberlain	*Belvidere, Ill.*	Freshman
Tripp, Jennie Louise	*Belvidere, Ill.*	Freshman
Turner, Annabell t c	*Madison*	Senior
Weiss, Florence Marie	*Madison*	Freshman
White, Mary Katherine	*Louisville, Ky.*	Junior
Wilkinson, Lottie A.	*Madison*	Sophomore
Williams, Anna Grace	*Gettysburg, S. D.*	Sophomore
Yorgey, Roxie Marie t c	*Horicon*	Senior

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ADULT SPECIALS, LONG COURSE

Baker, Raymond	*Rewey*
Brann, John William	*Baileys Harbor*
Breytspraak, Victor Clarence	*Evanston, Ill.*
Dahlberg, Arnold Orlando	*Crane*
Graves, Burrell Pinckney	*Redgranite*
Gunderson, Oscar	*Madison*
Hansen, John Emil	*Milwaukee*
Hanson, Lewis Peter	*Madison*
Jolivette, Bert Alexander	*La Crosse*
Kennedy, Stephen Francis	*Milwaukee*
Morris, George Charles	*Madison*
Palit, Barendra Kumar	*Calcutta, India*
Philipp, Walter William	*Milwaukee*
Raftery, Agnes Beatrice	*Madison*
Risdon, Harry Leland	*Brighton, Wash.*
Rodgers, Vincent Bradley	*Youngstown, O.*
Schoenfeld, William Alfred	*Madison*

Schutte, Carl Jacobus Erasmus	*Pretoria, S. Africa*
Sikhart, Joseph George	*Muscoda*
Stewart, Lee Hardy	*Le Moure, N. D.*
Trew, Max Rudolph Hendrick	*Melville, S. Africa*
Webster, Howard Porter	*Independence*
Weir, James Henry	*Mukwonago*
Young, Emmett William	*Chicago, Ill.*
Znamenski, Wladimir V.	*St. Petersburg, Russia*

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ADULT SPECIALS, MIDDLE COURSE

Ainslie, Paul Leonard	*Beloit*
Albrecht, Henry Christ	*Ohio, Ill.*
Brown, Charles Russell	*Woodbine, Pa.*
Buck, Peter Henry	*Hoboken, N. J.*
Dean, Hazen Stewart	*Hinsdale, Ill.*
Florsheim, Isaac Simon	*Chicago, Ill.*
McClary, Orson Rood	*Chicago, Ill.*
McLeod, Donald John	*Butte, Mont.*
Martin, Charles Henry	*Osceola*
Muth, Egbert	*Sheboygan*
Niesen, Paul Hugo	*Carbondale, Pa.*
Nissler, Chris William	*Butte, Mont.*
Ray, Ritchie Keith	*North Yakima, Wash.*
Robotka, Frank	*Franksville*
Springer, Walter William	*Chicago, Ill.*
Watrud, Hjalmar Oliver	*Blanchardville*
Wright, Hubert Pratt	*Oshkosh*

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ADULT SPECIALS, HOME ECONOMICS COURSE

Kuttruff, Rose Margaret	Kankakee, Ill.	Freshman

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WISCONSIN LIBRARY SCHOOL

Bergold, Bertha R.	*Springfield, Ill.*
Cobb, Gertrude	*Janesville*
Dew, Mary E.	*Midland, Mich.*
Dunton, Florence E.	*Belfast, Maine*
Eastland, Vera	*Richland Center*
Fihe, Pauline J.	*Richmond, Ind.*
Greene, Doris	*Ordway, Colo.*
Greene, Margaret	*Minot, N. D.*
Haley, Josephine M.	*Helena, Mont.*
Kosek, Anna A.	*Racine*
Lewis, Sarah V.	*Dubuque, Iowa*
Muir, Harriet G.	*Lincoln, Neb.*

Mumm, Beulah	*Wausau*	
Pleasants, Anne	*Menasha*	
Pond, Martha	*Antigo*	
Smith, Zela	*Superior*	
Spencer, Lois A.	*Falls City, Neb.*	
Warren, Althea H.	*Chicago, Ill.*	

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Joint Course

Cook, Lillian Elizabeth	*Park Falls*	Junior
Dexter, Bessie Hoard	*Madison*	Senior
Farquhar, Alice Milne	*Chicago, Ill.*	Junior
Flower, Dorothy	*Madison*	Junior
Kautz, Dorothy	*Madison*	Junior
McGregor, Della	*St. Paul, Minn.*	Senior
Martin, Mary Anne	*Madison*	Senior
Morgan, Lucy Lovisa	*Durand*	Senior
Potts, Marion	*Appleton*	Junior
Richardson, Gertrude	*St. Paul, Minn.*	Senior Ad .Sp.
Smith, Ella Mabel	*Oconto*	Senior

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SUMMER SESSION OF 1910

LETTERS AND SCIENCE

Graduates

Allen, Marion Bradburn — *Cambridge.*
B. A., University of Wisconsin

Allstrand, Mae Belle — *Carroll, Ia.*
B. A., Iowa State University.

Anderson, Jean Harriet McLean — *Manitowoc.*
B. A., Wilson College.

Andrews, Ada May — *Elgin, Ill.*
B. A., Beloit College.

Angell, Martin Fuller, g — *Delavan.*
M. A., University of Wisconsin.

Arkin, Aaron — *Chicago, Ill.*
M. A., University of Wisconsin.

Armstrong, Susan Naylor — *Madison.*
B. A., University of Wisconsin

Ash, I. Emery — *Shinnston, W. Va.*
B. A., West Virginia Wesleyan College.

Atkinson, Harry James — *Joliet, Ill.*
B. A., University of Illinois.

Aylsworth, Leon Emmons — *Lincoln, Neb.*
M. A., University of Wisconsin.

Bailey, Ruth — *Jacksonville, Ill.*
B. A., Illinois College.

Barnebey, Oscar Leonard, g — *Madison.*
M. A., University of Nebraska.

Bauer, Oscar Hugo — *Juneau.*
B. A., University of Wisconsin.

†Baugh, William Edward — *Indianapolis, Ind.*
B. A., Howard University.

Bear, Finnan Edward — *Columbus, O.*
M. S., Ohio State University.

Beath, Orville Andrew, g — *Verona.*
B. A., University of Wisconsin.

Bendix, Charlotte — *Chicago, Ill.*
Ph. B., University of Chicago.

Berry, Thomas R. — *Glendale, O.*
M. S., Wilmington College.

Bickel, Mary Andrews — *Geneseo, Ill.*
B. A., University of Illinois.

Bidgood, Lee, g — *University, Va.*
M. A., University of Virginia.

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† Advanced course for the training of teachers.

Billman, Irwin, g — *Madison.*
M. A., University of Wisconsin.
Birge, Raymond Thayer, g — *Troy, N. Y.*
M. A., University of Wisconsin.
Borresen, Alice Julia — *La Crosse.*
B. A., University of Wisconsin.
†Bowen, Rose Andrews — *Greenwood.*
B. A., University o Wisconsin.
Braemer, Gustav Andrew — *Watertown.*
B. A., Northwestern University, Watertown.
†Bragg, John Delosa — *Delaware, O.*
B. L., Ohio Western University.
†Brainard, Dudley Shattuck — *Slayton, Minn.*
B. A., Carleton College.
Bray, Francis Moore — *Fennimore.*
Ph. B., University of Wisconsin.
Bray, Frank Cronan — *Galena, Ill.*
Ph. B., University of Wisconsin.
Bristol, Edith Cook — *St. Albans, Vt.*
Ph. B., University of Vermont.
Brookins, Julia Louise Clarke, g — *Milwaukee.*
B. A., University of Wisconsin.
Brooks, Elwood E. — *Salem, Ind.*
B. A., University of Indiana.
Brown, Emma Eugenia — *Nashville, Tenn.*
B. A., Peabody College.
Brown, Katharine Holland — *Quincy, Ill.*
B. L., University of Michigan.
†Brown, Winfred Q. — *Hamilton, O.*
B. S., Valparaiso University.
Bruner, Lena Celestus — *Franklin, Ind.*
B. S., Franklin College
Bullock, Job Harry — *Footville.*
B. A., Eureka College.
Bumby, May — *Ripon.*
B. A., Ripon College
Burgess, Wilmot Amos — *St. Louis, Mo.*
B. A., Toronto University.
Burnham, Ernest — *Comstock, Mich.*
M. A., Albion College.
Byrne, Eugene Hugh — *Baraboo.*
B. L., University of Wisconsin.
Cannon, Lee Edwin — *Eureka, Ill.*
M. A., University of Wisconsin.
Cape, Emily Palmer — *New York, N. Y.*
M. A., Columbia University.
†Carr, Ralph Howard — *Wooster, O.*
B. L., University of Wooster.

† Advanced course for the training of teachers.

Carter, Ethel S. — *Madison.*
B. A., University of Wisconsin.
Cary, Eugene — *Chicago, Ill.*
B. S., University of Chicago.
Cary, Myra Treat, g — *Madison.*
M. A., University of Wisconsin.
Cawthon, William Stanmore — *Pensacola, Fla.*
B. A., University of Chicago.
†Chandler, Zach Anson — *Oregon.*
B. L., University of Wisconsin.
Chaney, George Arthur, g — *Madison.*
M. S., Highland Park College.
Chao, Guok-Tsai, g — *Shanghai, China.*
B. A., Uniyersity of Wisconsin.
Charles, Arthur M. — *Richmond, Ind.*
M. A., Haverford College.
Chatham, Leslie Willis — *Effingham, Ill.*
B. S., Ewing College.
Christian, Eleanor Richter — *Emporia, Kan.*
Ph. M., College of Emporia.
Clarke, Elvan Herman — *Muscoda.*
B. A., Milton College.
Clay, Martha Elliot — *Grand Rapids, Mich.*
B. A., Smith College.
Clyde, Norman Asa — *Beaver Falls, Pa.*
B. A., Geneva College
Cochran, Warren Baldwin — *Columbus, Kan.*
B. A., Baker University.
Cockerill, Cecil — *Plainview, Tex.*
B. A., Valparaiso College.
Colgrove, Jay Tilden — *Russell, Ia.*
B. A., University of Iowa.
Collett, Ernest Benjamin — *De Kalb, Ill.*
B. S., Ottawa University
Compton, James Stephen — *Eureka, Ill.*
B. A., Eureka College.
Conway, Mary Geneva — *Cincinnati, O.*
B. A., University of Cincinnati.
Coon, Shirley J. — *Walworth.*
B. A., Beloit College.
Cooper, Walter Henry — *Whitewater.*
M. S., University of Wisconsin.
Cotton, William Jacobs, g — *Pullman, Wash.*
B. A., Ripon College.
†Coultrap, Harry Mansfield — *Elgin, Ill.*
B. A., University of Colorado.
Crandall, Anna Whitford — *Milton.*
B. A., Milton College.

† Advanced course for the training of teachers.

Croft, Hazel Irene — *Beloit.*
B. A., Beloit College.

Cummings, Ruth Hurst — *Dawson, Minn.*
B. A., Cornell College.

Darling, Grace Rathbone — *Menomonie.*
Ph. B., University of Michigan.

†Davies, George Reginald — *Valley City, N. D.*
M. A., Des Moines College.

Davis, Bertha Eleanor — *Madison.*
B. A., University of Wisconsin.

Davis, Eva Floy — *Ripon.*
B. A., Ripon College.

Davis, James Austin — *Bridgeport, Ill.*
M. A., Ewing College.

Davison, Walter Bert — *Superior.*
B. A., University of Wisconsin.

†DeCamp, Lester Otis — *New Carlisle, Ind.*
Ph. B., Albion College.

Deming, Horace Grove, g — *Madison.*
M. S., University of Wisconsin.

Desmond, Cora Frances — *Madison.*
B. L., University of Wisconsin.

†Desmond, James Francis — *Madison.*
B. A., University of Wisconsin.

Dickey, Francis Wilber — *Columbus, O.*
M. A., Harvard University.

Dickoré, Marie Paula — *Cincinnati, O.*
M. A., University of Cincinnati.

Diez, Max, g — *St. Louis, Mo.*
M. A., Washington University.

Dike, Paul Harrison, g — *Crystal Lake, Ill.*
M. S., Northwestern University.

†Dirks, Louis Hermann — *New Albany, Ind.*
B. A., Indiana University.

†Dixon, Raymond Ephraim — *Kingston.*
B. A., University of Wisconsin.

Doan, Edna — *Amo, Ind.*
B. A., Earlham College.

Donat, Walter Scott — *Toledo, Ia.*
B. A., Yale University.

Dondo, Mathurin Marius, g — *Paris, France.*
M. A., University of Pennsylvania.

Dubach, Ulysses Grant — *Wathena, Kan.*
M. A., Harvard University.

Du Four, Laura Edna — *Racine.*
B. A., University of Wisconsin.

Durfee, Winifred Hackley — *Holland, Mich.*
B. A., University of New York.

† Advanced course for the training of teachers.

Eggert, William August — *Watertown.*
B. A., Northwestern University, Watertown.

Ekern, Helga Maria — *Madison.*
Ph. B., University of Wisconsin.

Ely, John Elbert — *Marinette.*
B. A., Oberlin College.

Ernst, Adolphine Bianca — *Watertown.*
M. A., University of Wisconsin.

Ernst, Fritz, g — *Charleroi, Belgium.*
B. A., Charleroi, Belgium.

Evans, Alice — *Madison.*
B. A., University of Wisconsin.

Ford, Charles Floyd — *Edwardsville, Ill.*
B. A., Knox College.

Ford, Mary Elizabeth — *Georgetown, Ky.*
B. A., Georgetown College.

Forsythe, William Elmer, g — *Granville, O.*
M. S., University of Wisconsin.

Frazer, George Enfield, l — *Madison.*
B. A., Iowa University.

Gale, Zona — *Portage.*
M. L., University of Wisconsin.

Garnett, Mary Fauntleroy — *Hopkinsville, Ky.*
B. A., Bethel Female College.

Garwood, Lynn Eugene — *Brookville, O.*
B. A., Otterbein College.

Gates, Charles Baldwin — *Milwaukee.*
Ph. M., University of Wisconsin.

Gee, Wilson Parham, g — *Santee, S. C.*
M. A., University of South Carolina.

Germann, Albert Frederick Ottomar — *Peru, Ind.*
M. A., Indiana University.

Gesell, Robert Albert — *Madison.*
B. A., University of Wisconsin.

Givens, Mary Louise — *Fayette, Mo.*
B. A., Randolph-Macon Woman's College.

Gloyer, Walter Oscar — *Milwaukee.*
B. A., University of Wisconsin.

Goddard, Beatrice Montgomery — *St. Louis, Mo.*
M. A., Leland Stanford Junior University.

Goddard, Charles Baldwin — *St. Louis, Mo.*
B. A., Leland Stanford Junior University.

Graber, John Francis — *Milwaukee.*
Ph. B., University of Wisconsin.

Green, Frank Burdett — *Evansville.*
B. A., University of Wisconsin.

Grover, Elijah Lynn — *Greensburg, Ind.*
B. S., Michigan Agricultural College.

† Advanced course for the training of teachers.

Hagestad, Knute M. *Leeds, N. D.*
M. A., University of Minnesota.
Hake, Joseph William *Hoyleton, Ill.*
B. A., University of Illinois.
Hall, Edgar Albert *Madison.*
M. A., University of Wisconsin.
Hannum, Alva Davis *Sabina, O.*
B. A., Lima College.
Harberts, William *Grundy Center, Ia.*
B. A., German Presbyterian School of the Northwest.
Harris, Thomas Luther, g *Waverly, Ill.*
M. A., Ohio State University.
Hart, Leone Claire *Demorest, Ga.*
B. S., Piedmont College.
Hastings, Harold Ripley *Hanover, N. H.*
M. A., Harvard University.
Haviland, Dora Luella, g *Janesville.*
B. L., University of Wisconsin.
Haynes, Herbert Grove *Wilmington, O.*
B. A., Wilmington College.
Hearon, Richard Augustus *Ft. Worth, Tex.*
B. A., Peabody College.
Helm, Harold McMurdo, m *Beloit.*
B. A., Beloit College.
Hemry, Frederick Squire *Port Deposit, Md.*
M. A., University of Nebraska.
Henry, Nelson Bollinger *Poplar Bluff, Mo.*
Ph. B., Central College.
Hensey, John Louis *Madison.*
B. A., University of Wisconsin.
Herrington, Samuel Edgar *College Station, Tex.*
B. S., Mississippi Agricultural and Mechanical College.
Hill, Howard Copeland *Oak Park, Ill.*
M. A., University of Wisconsin.
Hill, John, g *Dresden, Tenn.*
M. A., Vanderbilt University.
Hillman, Louis Frederick, g *Madison*
M. A., Indiana University.
Ho, Ling-Ih *Shanghai, China.*
B. A., St. John's University.
Hochstein, Minnie Florence *Rochester, N. Y.*
Ph. B., University of Rochester.
†Hodge, Willard Wellington *Waunakee.*
B. A., Ripon College.
Hodgson, Roberta *Athens, Ga.*
B. S., Teachers' College, N. Y.
Holah, Carolyn Gestina *Baraboo.*
B. L., University of Wisconsin.

† Advanced course for the training of teachers.

Holum, Jens Olaus — *De Forest.*
B. A., Luther College.

Holum, Ruth Caroline — *Stevens Point.*
B. A., University of Wisconsin.

Homburg, Frederick — *Cincinnati, O.*
M. A., University of Wisconsin.

Hookstadt, Carl — *Harvard, Ill.*
B. A., University of Wisconsin.

Hooper, Frank Finley — *Chattanooga, Tenn.*
B. A., University of Chattanooga.

Hubbard, Winfield Scott, g — *Madison.*
M. A., Columbia University.

Hull, May Sarah — *Aurora, Ill.*
B. A., Wheaton College.

Hunt, Mabel Frances — *Romeo, Mich.*
B. A., Oberlin College.

Hurst, Wilbur Randolph — *Hutsonville, Ill.*
B. S., Union Christian College.

Iverson, Peter J. — *Michigan City, N. D.*
B. A., Luther College.

Ives, Mary — *Mason City, Ia.*
B. A., University of Minnesota.

Jahr, Charles Anton — *Middleton.*
Ph. B., University of Wisconsin.

James, Victoria — *Eau Claire.*
B. A., University of Wisconsin.

Johann, Agnes Ida, g — *Canton, Mo.*
B. A., Eureka College.

Johnson, Charles Eugene — *Minneapolis, Minn.*
M. A., University of Minnesota.

Johnson, Isabel Reid — *Portage.*
B. A., University of Wisconsin.

Jones, Albert Edward — *Lena, Ill.*
B. A., University of Illinois.

Josiassen, John S., ls — *Madison.*
B. S., Fremont College.

Karch, Charles Henry — *Elkton, S. D.*
B. S., Valparaiso University.

Kasten, Marie Antoinette, g — *Milwaukee.*
B. A., University of Wisconsin.

Keller, William Jacob — *Chicago, Ill.*
M. A., Northwestern University.

Kempthorne, William Bismarck — *Platteville.*
Ph. B., University of Wisconsin.

Kennedy, Francis Willard — *Tiffin, O.*
D. B., University of Chicago.

Kirshman, John Emmett — *Fargo, N. D.*
Ph. M., Syracuse University.

Kleinschmidt, George John — *Milwaukee.*
M. D., University of Illinois.

Klepinger, Howard Albert	*Eaton, O.*
B. A., Earlham College.	
†Kline, Aaron	*Wanatah, Ind.*
B. A., Indiana University.	
†Klotz, Ralph Quad	*St. Croix Falls.*
B. A., University of Wisconsin.	
Koenen, Anita Katrine	*Milwaukee.*
Ph. B., University of Wisconsin.	
Koeppel, George	*Milwaukee.*
M. D., Illinois Medical College.	
Lamar, Franklin S.	*Richmond, Ind.*
M. A., Earlham College.	
†Lamb, Charles Emery	*Cobb.*
Ph. B., University of Wisconsin.	
Lamb, Hilda Jeannette	*Roberts.*
B. A., Ripon College.	
La Motte, Frank Alexander	*Kansas City, Mo.*
M. A., University of Wisconsin.	
Lantzer, Albert Franklin	*Marion, O.*
Ph. B., Ohio Northern University.	
Lasley, Hallie	*Kansas City, Kan.*
B. A., University of Kansas.	
Lau, Arnold	*Stevens Point.*
B. L., University of Wisconsin.	
Lauderdale, Jennie Elizabeth	*Northville, Tenn.*
M. A., Mary Sharpe College.	
Leonard, William Ezekiel	*Bellevue, Neb.*
Ph. B., Iowa College.	
Liessmann, Alma Louise	*Reedsburg.*
Ph. B., University of Wisconsin.	
Little, Jessie Marie	*Cincinnati, O.*
M. A., Cincinnati University.	
Loft, Genivera Edmunds	*Greenwood.*
B. A., University of Wisconsin.	
Long, Walter Sterrett	*North Manchester, Ind.*
M. A., Ohio Wesleyan University.	
Loshinski, John Nicholas	*Ripon.*
B. A., Ripon College.	
Luce, Rey Vincent	*Chilton.*
B. A., University of Wisconsin.	
Lundberg, Emma Octavia, g	*Rockford, Ill.*
M. A., University of Wisconsin.	
Lussky, George Frederic	*Ottawa, Ill.*
B. A., University of Chicago.	
Lyman, Rollo Lu Verne, g	*Madison.*
B. A., Beloit College.	
†Lyon, Leslie Walter	*Crystal, Mich.*
B. A., Wheaton College.	

† Advanced course for the training of teachers.

McAllister, Frederick M. A., Beloit College.	*Madison.*
McCann, Sue D. M. S., Kentucky State University.	*Lexington, Ky.*
McCarty, Leslie Combes B. A., Indiana University.	*Brainerd, Minn.*
†McDaniel, Moses B. A., University of Wisconsin.	*Brooklyn, Ind.*
MacDonald, Philip Walter, g B. A., University of Wisconsin.	*Peshtigo.*
McKinney, Edith B. A., Fargo College.	*Detroit, Minn.*
McMullin, Jennie Willing Ph. B., University of Chicago.	*Terre Haute, Ind.*
†Marcell, Burnett Alfred B. S., Ottawa University, Kansas.	*Chippewa Falls.*
Marek, Benjamin B. A., German Presbyterian College.	*Dubuque, Ia.*
Marker, Albert Washington Ph. B., North-Western College.	*Andrews, Ind.*
Marshall, Kora Henderson B. A., Ohio Western University.	*Marion, O.*
Martin, Oscar Ross B. A., Central Wesleyan College.	*Urbana, Ill.*
Mathews, Ella Annetta M. A., University of Michigan.	*La Crosse.*
Mathews, George Clyde B. A., University of Wisconsin.	*Burlington.*
†Mehner, Albert Hugo, g B. A., University of Washington.	*Madison.*
Melby, Elizabeth B. A., University of Wisconsin.	*Merrillan.*
Menke, Floyd Henry B. S., Otterbein University.	*Portsmouth, O.*
Meston, Helen B. S., Doane College.	*Hastings, Neb.*
Miller, Paul Gerard, g B. A., University of Wisconsin.	*Oshkosh.*
†Mohr, Esther Cook B. A., University of Illinois.	*Oak Park, Ill.*
Monroe, Hudson Morris B. S., Lebanon University.	*Vincennes, Ind.*
Moots, Elmer Earle, g M. S., University of Maine.	*Madison.*
Morgan, Mabelle Le Valle M. A., Carleton College.	*Fargo, N. D.*
Morris, James Henry B. A., Valparaiso University.	*Hopewell, Pa.*

† Advanced course for the training of teachers.

Morris, Sidney Dealey B. S., University of Illinois	*Chicago, Ill.*
Morrow, Paul Reed B. A., West Virginia University.	*Fairmont, W. Va.*
†Moulton, Lewis Henry Ph. B., University of Wisconsin.	*Kewaunee.*
Moussa, Hans Koller B. A., Northwestern University, Watertown.	*Watertown.*
†Murphy, Edna Pierce B. A., Gustavus Adolphus College.	*Pipestone, Minn.*
Nanavati, Manilal Balabhai M. A., University of Pennsylvania.	*Barova, India.*
Nash, Francis Ralph Ph. B., University of Wisconsin.	*Fox Lake.*
†Nearpass, Homer Lynn B. A., Western Reserve University.	*Cresco, Ia.*
Nebel, Walter, g B. S., University of Wisconsin.	*Madison.*
Nelson, Annette B. L., University of Wisconsin.	*Madison.*
Nelson, Carl Ferdinand B. A., University of Wisconsin.	*Rockford, Ill.*
Nickerson, Alice Maud B. A., University of Minnesota.	*Elk River, Minn.*
Nolte, Elma Louise. Ph. B., Earlham College.	*Richmond, Ind.*
Nordlie, Herman Clarence M. A., University of Wisconsin.	*Deerfield.*
Nye, Albert Edgar B. S., Valparaiso University.	*McHenry, Ill.*
Okami, Shinji g B. A., Waseda University.	*Tokyo, Japan*
Oliver, Maude Louise Ph. B., Northwestern University.	*Morrison, Ill.*
Ortli, Christine B. A., Western Reserve University.	*Cleveland, O.*
Otten, Frederick Ben, m B. S., North Dakota Agricultural College.	*Madison.*
Outcalt, Ethel Louise B. A., University of Cincinnati.	*Cincinnati, O.*
Parker, Belle Louise B. A., University of Minnesota.	*Pickwick, Minn.*
Perley, Mary Elizabeth B. A., Washington University.	*Fargo, N. D.*
Peterson, Francis Edwin B. A., Luther College.	*Clarkston, Wash.*
Phelps, Clarence Lewis M. A., Dartmouth College.	*Ishpeming, Mich.*

† Advanced course for the training of teachers.

Pittman, Mary Cowper — *Union Springs, Ala.*
M. A., University of Alabama.
Plagge, Herbert John — *Barrington, Ill.*
B. S., Northwestern University.
Post, Beulah Celecta — *Madison.*
B. L., University of Wisconsin.
Potter, Paul David — *Madison.*
B. A., University of Wisconsin.
Pressentin, Marie Louise — *Madison.*
B. A., University of Wisconsin.
Purin, Charles Maltador, g — *Milwaukee.*
M. A., University of Wisconsin.
Radford, Laurence — *Eureka, Ill.*
B. A., Eureka College.
Rakow, Bertha Marie, g — *Brandon.*
B. A., University of Wisconsin.
Rankin, Carrie Adela — *Waukesha.*
B. A., University of Wisconsin.
Ray, George Rankin — *Waukesha.*
M. A., University of Wisconsin.
Records, Thomas Watterson — *Liberty, Ind.*
B. A., Indiana University.
†Reece, Richard Herb — *East Lansing, Mich.*
B. S., Kansas Agricultural College.
Reed, Clarence — *Palo Alto, Cal.*
M. A., University of California.
Reichel, Heinrich Christopher — *Eureka, Ill.*
B. A., Eureka College.
Reid, Charles Dwight, Jr. — *Auburn, N. Y.*
B. A., Williams College.
Reid, Harry Craven — *Pendleton, Ind.*
B. A., Indiana University.
Reifsnider, Edson — *Galesburg, Ill.*
B. D., Tufts College.
Reinheimer, Clara May — *Fairmount, W. Va.*
B. A., West Virginia University.
Reishus, Knut P. B. — *Stanley.*
B. A., Luther College.
Richards, Ella Margaret — *Delaware, O.*
B. A., Ohio Wesleyan University.
Richardson, Olive. — *Menasha.*
B. A., Lawrence College.
Rieth, Pauline Katherine — *Denton, Neb.*
B. A., University of Nebraska.
Robertson, Clarence Hovey — *Cedar Falls, Ia.*
M. E., Purdue University.
Rodewald, John Wesley, g — *Kilbourn.*
Ph. B., University of Wisconsin.

† Advanced course for the training of teachers.

Rodgers, Thomas Gladstone — *Houston, Minn.*
B. A., University of Tennessee.
Roll, Charles — *Pimento, Ind.*
B. A., Indiana University.
Ross, Emory Warren — *Eureka, Ill.*
B. A., Eureka College.
Rounsevell, Bessie Lucy — *River Falls.*
Ph. B., University of Wisconsin.
Ruddock, Edith Lou — *Cannon Falls, Minn.*
B. L., Carleton College.
Russell, William Giles — *Peoria, Ill.*
Ph. B., University of Wisconsin.
Sabin, Ethel Ernestine — *Madison.*
B. A., University of Wisconsin.
Saliers, Earl Adolphus — *Siam, O.*
M. A., Ohio State University.
Sanders, Mary Virginia — *Van Voorhis, W. Va.*
B. A., West Virginia University.
Sawyer, Harriet Josephine — *Hartford.*
B. A., University of Wisconsin.
Schiel, Luella — *Cincinnati, O.*
B. A., Miami University.
Schirmer, Marelie, g — *Milwaukee.*
B. A., Milwaukee-Downer College.
Schmitt, Bernadotte Everly — *Knoxville, Tenn.*
B. A., University of Oxford.
Schultz, Rudolph Jahnke — *St. Louis, Mo.*
M. A., University of Wisconsin.
Schulz, Raymond Louis — *Milwaukee.*
B. S., University of Wisconsin.
Schweitzer, Louise — *Grand Rapids, Mich.*
B. A., University of Michigan.
Sealock, William Elmer — *Circleville, O.*
B. A., Ohio State University.
Selden, Joseph Philip — *Calumet, Mich.*
B. A., Olivet College.
Self, Lucile — *Brownwood, Tex.*
B. S., University of Nashville.
Sell, Martha Erbach — *Milwaukee.*
B. A., University of Wisconsin.
Sensel, Edward Henry — *Cleveland, O.*
M. A., Western Reserve Univesity.
Seymour, Lurene — *Decatur, Ill.*
Ph. B., University of Michigan.
Shelander, Asaph Robert — *Tacoma, Wash.*
B. A., Augustana College.
Shepard, David Arthur — *Racine.*
B. A., Eureka College.
Sherrill, Jennie Bentley — *Belvidere, Ill.*
B. L., University of Wisconsin.

Shilling, David Carl	*Hamilton, O.*
B. A., Miami University.	
†Shortridge, Wilson Porter	*Elkhart, Ind.*
B. A., Indiana University.	
Siegmeyer, Johannes Wilhelm	*Milwaukee.*
B. A., University of Wisconsin.	
Simmers, Charles Luther, g	*Madison.*
B. A., Iowa State University.	
Simonds, Frances	*Sumner, Ia.*
Ph. B., Upper Iowa University.	
Simons, Sarah Emma	*Washington, D. C.*
M. A., Stanford University	
Simpson, Myrtle Edith	*Manhattan, Kan.*
B. S., Kansas State Agricultural College.	
Simpson, Orson L., g	*Freeport, Mich.*
B. S., University of Michigan.	
Sinclair, Alice May, g	*New Lisbon.*
B. A., Beloit College.	
†Sister Mary George Adamson	*Sinsinawa.*
B. A., Washington University.	
Sister Mary James Cavanaugh	*Sinsinawa.*
B. L., University of Wisconsin.	
Sister Mary Paul Long	*Sinsinawa.*
B. S., University of Chicago.	
Smith, Bertram Garner, g	*Madison.*
B. A., University of Michigan.	
Smith, Beulah Evelyn	*Ashland.*
B. A., University of Wisconsin.	
Smith, D. Jean	*Mondovi.*
B. A., University of Wisconsin.	
Smith, Leslie Denis	*Grand Rapids.*
B. S., Beloit College.	
Snavely, William Garfield	*Massillon, O.*
B. A., Otterbein University.	
†Spence, Mary Leslie	*Oconomowoc.*
B. A., University of Wisconsin.	
Stauffacher, Albert Daniel	*Monroe.*
B. A., Northwestern College.	
Stebbins, Althea Violet	*Chicago, Ill.*
Ph. B., University of Chicago.	
Steinfort, Selma Alvina	*Watertown.*
B. L., University of Wisconsin.	
Stevens, Wyandotte James	*St. Louis, Mo.*
M. A., Normal College.	
†Stevenson, John Alford	*Cobden, Ill.*
B. A., Ewing College.	
Steyer, Ida Bertha	*Tarkio, Mo.*

† Advanced course for the training of teachers.

Stimson, Mary — *Terre Haute, Ind.*
B. A., Coates College.
Stratton, Frederick Eugene — *Fargo, N. D.*
Ph. D., Illinois Wesleyan University.
Stuckert, John Frederick — *Milwaukee.*
B. A., University of Wisconsin.
Sutter, Minnie M. — *Chicago, Ill.*
B. L., Northwestern University.
Suydam, Vernon Andrew — *Princeton, N. J.*
B. S., University of Wisconsin.
†Tainsh, Jean Elizabeth — *Milwaukee.*
B. A., Milwaukee-Downer.
Talbot, Jessie — *Berlin.*
B. A., Ripon College.
Tallant, Edith — *Richmond, Ind.*
B. A., Vassar College.
Taylor, Archibald Wellington — *Forest Grove Orc.*
B. A., Doane College.
Tensfeld, Anna Elizabeth — *St. Louis, Mo.*
M. A., Washington University.
Thompson, John — *Rolfe, Ia.*
B. S., St. Olaf College.
†Thompson, Vida Irene — *Madison.*
B. A., Lawrence College.
Tighe, Benjamin Charles B. — *Waunakee.*
Ph. B., University of Wisconsin.
Titsworth, Paul Emerson — *Alfred, N. Y.*
Ph. B., Alfred University.
Tomlinson, Wilbur Fisk — *Richland Center.*
B. A., Northwestern University.
Tonning, Henry Rasmus — *Festile, Minn.*
B. S., St. Olaf College.
Tormey, Julia Florence — *Madison.*
B. A., University of Wisconsin.
Torrey, Nellie — *Greenwood, Miss.*
B. A., Industrial Institute and College.
Trebilcock, William Everett — *Negaunee, Mich.*
M. A., University of Michigan.
Trowbridge, Grace Nelson — *Colorado Springs, Colo.*
B. A., Colorado College.
Tsai, Chu-tung, g — *Canton, China.*
B. A., University of Wisconsin.
Tsao, Chin-Kien — *Shanghai, China.*
M. A., University of Pennsylvania.
Tucker, Robert Henry — *Danville, Va.*
M. A., William and Mary College.
Tucker, Robert Hewitt — *Bellevue, Mich.*
B. A., Olivet College.

† Advanced course for the training of teachers.

Two, Florence Stella	*Madison.*
B. A., University of Wisconsin.	
†Van Auken, Clarice	*Clinton, Ia.*
B. A., University of Wisconsin.	
Van Cleave, Maude Beryl	*Kansas City, Kan.*
B. A., University of Kansas.	
Van Hise, Mary Janet, g	*Madison.*
B. A., University of Wisconsin.	
Voegtle, Anna	*Louisville, Ky.*
B. A., University of Louisville.	
Wahl, Harry Roswell	*Stratford.*
B. A., University of Wisconsin.	
Wahlberg, Karl William	*Moline, Ill.*
B. S., University of Chicago.	
Walker, Adam Alexander	*Madrid, N. Y.*
B. A., University of Michigan.	
Waters, Elizabeth Agnes	*Fond du Lac.*
B. S., University of Wisconsin.	
Welch, Willis Yardley	*Clarion, Pa.*
M. S., Bucknell University.	
Wengert, Eugene Frederick	*State Center Ia.*
B. A., Iowa State University.	
West, Anna May	*Milton Junction.*
B. A., Milton College.	
White, Laura Amanda	*Webster City, Ia.*
B. A., University of Nebraska.	
Whitford, Alfred Edward, g	*Milton.*
B. A., University of Chicago.	
Whitney, Helen	*Minneapolis, Minn.*
B. A., University of Minnesota.	
Whyte, Malcolm Kenneth, ls	*Watertown.*
B. A., Northwestern University, Watertown.	
†Wiesender, Emma Margaret	*Green Lake.*
B. A., Oberlin College.	
†Wightman, Mildred Isabelle	*Elroy.*
B. A., University of Wisconsin.	
†Wilcox, Alice Emily	*Storm Lake, Ia.*
B. A., University of Michigan.	
Wilgus, James Alva	*Platteville.*
M. A., Ohio State University.	
Wilson, Harold James	*Madison.*
B. A., Ohio Wesleyan University.	
Wishard, Hazel	*Greenwood, Ind.*
Ph. B., Franklin College.	
Witherbee, Oliver Day	*Lodi.*
B. A., Lawrence College.	
Witte, Edwin Emil, g	*Watertown.*
B. A., University of Wisconsin.	

† Advanced course for the training of teachers.

Wolfe, Howard Webster	*Hanover, Ind.*
B. A., University of Indiana.	
Wright, Christine Ramsay	*Baraboo.*
B. L., University of Wisconsin.	
Wright, Grace Anna	*Janesville.*
B. L., University of Wisconsin.	
†Wright, Mignon	*Madison.*
B. L., University of Wisconsin.	
Yang, Ying-yueh, g	*Wusih, China.*
B. A., Imperial Polytechnic College.	
Yeck, Charles Walter	*Flora, Ill.*
B. A., University of Illinois.	
Young, Charles Edmund, g	*Boston, Mass.*
M. A., University of Wisconsin.	
Young, Earle Burdette	*Madison.*
M. A., University of Wisconsin.	
Zobel, Lola	*Ripon.*
B. A., Ripon College.	

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Undergraduates and Teachers

Abramsky, William Alexander	*Chicago, Ill.*
Adams, Edward Richmond	*Galesburg, Ill.*
Adams, Florence Amelia	*Mukwonago*
Adams, James Reva ls	*Appleton*
Adler, Sigmund ls	*Madison*
Ahlstrom, Mabel	*Grantsburg*
Ainslie, Paul Leonard a	*Ft. Wayne, Ind.*
Aldrich, Mildred Isabelle	*Milwaukee*
Allaben, Gerald Randolph ls, m	*Rockford, Ill.*
Allyn, Josephine ls	*Madison*
Almy, Hubert St. Claire	*Galesville*
Amet, Albert Virginius	*St. Louis, Mo.*
Anderson, Sidney Wright	*Whitewater*
Anderson, Charles Joseph	*Prescott*
Anderson, Herder	*Howard, S. D.*
Andressohn, John Carl ls	*Milwaukee*
Anklam, Arthur Rudolph	*Menasha*
Appleman, George Mordecai	*Baldwin*
Armbruster, Theresa Marie ls	*River Falls*
Arnemann, George Elmer e	*Two Rivers*
Arneson, Matilda	*Barneveld*
Arnold, Walter Jacob	*Kiel*
Arpin, Harold Augustus ls	*Grand Rapids*
Ashcraft, Mary Willes	*Brandenburg, Ky.*
Auerbach, Ida	*Helena, Mont.*
Axford, Richard Norman ls	*Madison*
Ballard, Douglas Keene ls	*Oak Park, Ill.*
Ballesteros, José M. e	*Monclova, Coah, Mex.*

† Advanced course for the training of teachers.

Barmeier, Floyd Everett ls	*St. Louis, Mo.*
Barrett, Anna Emma	*Waterloo, Ia.*
Bartholomew, Nell Maud	*Lodi*
Basinger, Harvey Raymond	*Pandora, O.*
Bassford, George Ainslie	*Sturgeon Bay*
Beardsley, Edna	*Platteville*
Bechtel, Anita Else ls	*Milwaukee*
Becker, Herbert William ls	*Chicago, Ill.*
Belden, Carroll Reed	*Omaha, Neb.*
Bendix, Adeline Bertha	*Chicago, Ill.*
Benjamin, Mabel Murhle	*Clinton, Ia.*
Bentzen, Frederick Whelpley ls	*Warrens*
Berger, Anna Marie	*Milwaukee*
Bersh, Anna	*Milwaukee*
Beseman, Ella	*Peoria, Ill.*
Bickler, Sophia	*Milwaukee*
Birchard, Ruth ls	*Grants Pass, Ore.*
Bishop, Fred G.	*Cassville*
Blakewell, Clara Louise	*Portage*
Bliss, Hugh Porter ls	*Madison*
Blood, Emma Belle ls	*Oshkosh*
Blood, Lonena Odelia	*Mukwonago*
Bluem, Clarence Frank	*Cleveland, O.*
Bobo, Mildred Eleanor	*Richland Center*
Bolle, Charles	*Watertown*
Bonfoey, Jennie Prudence	*Milwaukee*
Bonness, Hazel	*Minneapolis, Minn.*
Boucher, Nettalie H.	*Milwaukee*
Bowden, Garfield Arthur	*Cuba City*
Boyle, Margaret ls	*Butte, Mont.*
Bradbury, Velva	*Fennimore*
Bradley, Willie Winston	*McComb, Miss.*
Brainard, Harry Dion e	*Lone Rock*
Branegan, Gladys Alee ls	*Madison*
Braun, Adolph Rudolph	*Milwaukee*
Brennan, Ursula Ann ls	*Fort Dodge, Ia.*
Brewer, Bess Cordelia	*Mineral Point*
Brewer, Jerome Seckel ls	*Chicago, Ill.*
Briggs, Guy Edward ls	*Milwaukee*
Broderick, Harold Anthony ls	*Kenosha*
Bronson, Alice M.	*Milwaukee*
Brown, Allan G.	*Manawa*
Brown, Elmer C.	*Manawa*
Brown, Harry Gilbert ls	*Logansport, Ind.*
Brown, Mabel Mary	*Platteville*
Brundage, Phoebe Farnum ls	*Somonauk, Ill.*
Buchen, Walther ls	*Madison*
Buck, Louise Langdon ls	*Plattsburg Barracks, N. Y.*
Budd, Alfred Nelson	*Milwaukee*

Burdick, Mary Louisa	*Easton*
Buss, Flora Emma ls	*Milwaukee*
Buth, Otto Edward ls	*Hartford*
Butt, Jane H.	*Viroqua*
Butterfield, Jennie Edith	*Cedarburg*
Butz, Charles Harold e	*Mazomanie*
Cadman, William Samuel	*Norwood, O.*
Callies, Hattie Mary	*Oshkosh*
Cameron, Daniel Ellsworth	*Ft. Morgan, Colo.*
Cameron, Mary Regina ls	*Chippewa Falls*
Cape, Jane	*Dodgeville*
Carlson, Eric G.	*Range*
Carmichael, Raymond Bills	*Rockford, Ill.*
Carter, Bessie Ann ls	*Madison*
Case, Gertrude Temple	*Milwaukee*
Cathcart, Charles William ls	*Madison*
Chamberlain, Harriet Adams	*Webster Groves, Mo.*
Chang, Yu Lin ls	*Foo Chow, China*
Chapman, Charles McCoy	*Platteville*
Christensen, Bernard Victor	*Westfield*
Christians, George Fred ls	*Johnson Creek*
Christopherson, Carl S.	*Madison*
Claiborne, Howard Witwer	*Dallas, Texas*
Coar, John R.	*Shelbyville, Ind.*
Coates, Charles Irwin	*Hillsboro*
Cobaugh, Harry Augustus e	*Washington, D. C.*
Cobb, Ralph Benjamin	*River Forest, Ill.*
Cochran, Frances Ermina	*Cincinnati, O.*
Cochrane, Esther Gertrude	*Crete, Neb.*
Coddington, Charles Spencer ls	*Green Bay*
Coe, Laurence Smith ls l	*Barron*
Coerper, Roland Frederick ls	*Hartford*
Colburn, Lucy May	*Kilbourn*
Colignon, Lucy	*Madison*
Conlan, Grace Mary ls	*Milwaukee*
Cooley, Gilbert e	*La Grange, Ill.*
Couden, Margaret Turpin	*Indianapolis, Ind.*
Cracraft, George Knox	*Readland, Ark.*
Craft, Wilmer Earl	*Vermont, Ill.*
Crane, Mildred Collver ls	*Madison*
Crawford, Harold Newell ls	*Milwaukee*
Crowell, Joseph Addison, Jr. e	*Iron Mountain, Mich.*
Crumb, Ralph Arlington	*Alfred, N. Y.*
Cummings, Hazel Elizabeth	*Evanston, Ill.*
Cummings, Lucile Priscilla	*Evanston, Ill.*
Curkeet, John Edwin	*Platteville*
Curley, Ethel Delia	*Idaho Falls, Idaho*
Curtis, Glen Roswell	*Chicago, Ill.*
Curtis, Irene	*Madison*

Curtis, Leroy George	*Waupun*
Daane, Edward	*Fairwater*
Dahl, John Leon	*Strum*
Dana, Bedros ls	*Boston, Mass.*
Darling, William Thomas	*Milwaukee*
Dawson, Charles William ls	*Lidgerwood, N. D.*
Day, Abbie Louise	*Minneapolis, Minn.*
DeBoos, Esther Ethel ls	*Madison*
Decker, Myrtle M.	*Roswell, N. Mex.*
Dembitz, Annette	*Louisville, Ky.*
Dengler, Clare	*Madison*
Desmond, Julia E.	*Milwaukee*
Dettmann, Edwin Albert ls	*Sheboygan*
Doerflinger, Lillie ls	*Dunkirk, New York*
Dohr, James Lewis ls	*Madison*
Dönhoff, Ida von	*Gagel Station, Ky.*
Dostal, Bernard ls	*Milwaukee*
Douda, Edgar George	*Richland Center*
Doyle, James Harold ls	*Huron, S. D.*
Dungan, Duane	*Indianapolis, Ind.*
Dvorak, Albert Charles ls	*Mewaunee*
Dyke, LeGrande Grandis ls	*Madison*
Eastman, Eric Eyre	*Los Angeles, Cal.*
Eberle, Roger Theodore	*Watertown*
Eckstein, John William ls	*Muscoda*
Edwards, Martha L.	*Cincinnati, O.*
Ehbets, Paulina	*Milwaukee*
Eichinger, John Augustine	*Algoma*
Eiselmeier, John	*Milwaukee*
Eldred, Claude H.	*Marshall*
Ellis, William Henry ls	*Freeport, Ill.*
Elmer, Manuel Conrad	*Monroe*
Emery, Hazel ls	*Madison*
Emmett, Henry Thomas	*Verona*
Erickson, Kenneth William ls	*Racine*
Essinger, Anna	*Nashville, Tenn.*
Fasbender, Teresa Rose	*River Falls*
Fein, Alfred Erwin l	*Milwaukee*
Feix, Helen Antoinette	*Milwaukee*
Felsenthal, Julia Ida	*Chicago, Ill.*
Ferrar, Kathleen ls	*Madison*
Ferrar, Kayutah ls	*Madison*
Fisklin, Henry Stone	*Stanberry, Mo.*
Fligelman, Frieda	*Helena, Mont.*
Flint, Alfred Thomas ls	*Madison*
Foerster, Harry Robert ls m	*Milwaukee*
Foley, Mabel Margaret	*Juneau*
France, George Bourne ls	*Des Moines, Ia.*
Franzen, Ella Catherine ls	*St. Paul, Minn.*

Fredrich, Ida	*Milwaukee*
Frey, Forrest Henry ls m	*Madison*
Frey, Frank Armin ls	*Milwaukee*
Fry, Robert J.	*Omro*
Fuchs, Carl Ernest l	*Chicago, Ill.*
Fuller, Anna Caroline	*Madison*
Fuller, Frank Randall, Jr. ls	*Madison*
Furness, Mary Baker	*Cincinnati, O.*
Gahagan, John Martin	*La Valle*
Gallager, Joseph Thomas ls	*Racine*
Gattaker, Louise	*Baraboo*
Gavin, Ellen M.	*Omaha, Neb.*
Geidel, Carl Diedrich ls	*Madison*
Geisenhofer, Katherine	*Cincinnati, O.*
Gelman, Moses Max	*Sheboygan*
Germann, Frank Erhart Emanuel	*Peru, Ind.*
Gibbon, Owen B. ls	*Rewey*
Gigot, Gustave Joseph ls	*Casco*
Gillett, Orson Clarke ls	*Madison*
Gleason, Theresa	*Stevens Point*
Goddard, Rosa Marea	*Galesburg, Ill.*
Godfrey, Rush Clayton	*Lancaster*
Gold, John Kedney ls	*Madison*
Goldberg, Berthold Laflin	*Chicago, Ill.*
Goldschmidt, William Jacob l	*Madison*
Goldsmith, Joseph	*Bohemia, Austria*
Gosney, Jessie Fremont	*Indianapolis, Ind.*
Gotham, Edwin C.	*Ladysmith*
Graham, Alexander Richard	*Deerfield*
Graham, Mae Lillian ls	*Madison*
Granger, Clifford E.	*Peshtigo*
Gratz, Mabel Maud ls	*Madison*
Gray, Carl Raymond, Jr.	*St. Louis, Mo.*
Greene, Eunice Genevieve	*W. De Pere*
Greenwood, Arthur Stanley ls	*Lake Mills*
Grimm, Dacotah Belle	*Parkston, S. D.*
Gulliford, Bessie Gertrude ls	*Oshkosh*
Halgrim, Isabella Charlotte	*Dodgeville*
Hall, Raymond Gilbert ls	*Madison*
Hall, William Oscar	*Richland Center*
Halvorson, Adolph Lawrence	*Onalaska*
Hamilton, William James	*Two Rivers*
Hammer, John M.	*Spring Valley*
Hanan, Florence Louise ls	*Oregon*
Hand, William Joseph	*Cedar Grove*
Hannan, Loretto Frances ls	*Milwaukee*
Hanson, Elma May	*Delafield*
Hanson, Lewis Peter ls	*Madison*
Hardgrove, Joseph Henry	*Manawa*

Hargrave, Florence Villritt	*Wilton*
Hargrave, Mary	*Wilton*
Harker, Medora Emmeline ls	*Dodgeville*
Harris, Sheba Florence	*Chicago, Ill.*
Harrop, George Argale, Jr.	*South Bend, Ind.*
Hassenflug, Else	*Hesse, Germany.*
Havenor, Reslo Sherman	*Belvidere, Ill.*
Hawkins, Marjorie Deane	*Chicago, Ill.*
Hecht, Frank A., Jr. ls	*Madison*
Hegeman, Rolland Louise	*Wilmot*
Hegen, Louise	*Milwaukee*
Heideman, Lena	*Waupun*
Heilman, Raymond Julius ls	*Oconomowoc*
Hein, Fred William	*So. Milwaukee*
Hemlock, May Bernardine	*Marinette*
Hemmy, Arthur Richard ls	*Juneau*
Henkel, Almira Lisetta	*Milwaukee*
Herreid, Cecelia ls	*Madison*
Hewitt, Irving John g	*Madison*
Hildebrand, Hazel	*Rhinelander*
Hill, Charles Lawrence ls l	*Indianapolis, Ind.*
Hillhouse, Nellie Waddle	*Warrensburg, Mo.*
Hindes, Edward Lemuel	*Lodi*
Hirsch, Everett Charles	*Colby*
Hobbs, Jane Elizabeth	*Washington, Pa.*
Hoffman, Robin Emmerich a	*Chicago, Ill.*
Hohler, Gertrude Mary ls	*New London*
Holthoff, Ray E.	*Milwaukee*
Horton, Lorena Ringling	*Madison*
Hosler, Mildred Bell	*Reedsburg*
Hotz, Henry Gustav	*Scandinavia*
Householder, Frederick F.	*La Farge*
Housel, Miriam Edna ls	*Madison*
Howlett, Irving Richard ls	*Oshkosh*
Hughes, Edna Mae	*Mason City, Ia.*
Hughes, Stewart Wilson ls	*Madison*
Huntington Earl D.	*Platteville*
Hyatt, Chauncy Adelbert ls	*Sheboygan*
Igleheart, Ruth Priest	*Salt Lake, Utah*
Ikeda, Minoru g	*Osaka, Japan*
Irvine, Jessie Muriel	*Edgerwood, N. D.*
Irving, Jessie Katherine	*Santa Rosa, Cal.*
Jackman, Johnston Charles	*Madison*
Jackson, Clarence Eccles ls	*Grand Rapids*
Jackson, Harriet Sophie	*Clinton, Mo.*
Jacobson, Clara Sophia	*Grantsburg*
Jalandoni, José Ledesma	*Jaro, Iloila, P. I.*
Jeffris, Donald Hanchett ls	*Chicago, Ill.*
Johnson, Alice Myrtle	*Perry, Ia.*

Johnson, Edna May	*Beloit*
Johnson, Russell Martin ls m	*Madison*
Johnson, Sophia Munroe	*Superior*
Jones, Ellen Margaret	*Wausau*
Jones, Harvey W,	*Dodgeville*
Jones, Maldwyn Lloyd ls	*Racine*
Jones, Phoebe Evelyn	*Wausau*
Judd, Roy Clair ls	*Endeavor*
Junge, Otto Peter	*New Holstein*
Jungkunz, Ilma D. ls	*Freeport, Ill.*
Kamantigue, Jacinto Manila ls	*Imus, Cavite, P. I.*
Kassler, Bessie Esther	*Dubuque, Ia.*
Kassler, Harry	*Dubuque, Ia.*
Kasten, Albert William	*Poynette*
Kavanagh, Margaret Irene	*New Richmond*
Kay, Rosaline ls	*Madison*
Keith, Mabel ls	*Chicago, Ill.*
Kell, Herman F.	*Grand Rapids*
Kelley, Francis Edwin	*Fond du Lac*
Kelly, Paul Frederick ls	*Clinton, Ia.*
Kendall, Alice Adela	*Clinton, Ia.*
Kenngott, Alfred	*St. Louis, Mo.*
Kesler, Howard Andrew	*Clark's Hill, Ind.*
Kieckhefer, George Henry ls	*Milwaukee*
King, Vestry	*Battlefield, Miss.*
Kirk, Wilmer S.	*Philadelphia, Pa.*
Klingman, John Westlake	*Knapp*
Knight, Oliver Drake ls	*River Falls*
Koar, Jamini Kanta	*Calcutta, India*
Kobayashi, Yataro	*Tokyo, Japan*
Koehler, Lucy Josephine	*Menomonee Falls*
Koehsel, Minnie Clara ls	*Madison*
Kolinsky, Pete Charles ls	*Racine*
Konno, Rokuro Goto ls	*Iwate, Japan*
Krause, Linnie	*Ridgeland*
Kremers, Roland Edward	*Madison*
Kuehnast, Ella Louise	*Abbotsford*
Kunz, Fritz ls	*Freeport, Ill.*
Kunz, Litta	*Freeport, Ill.*
Kuy Kendall, Alfred	*Twin Bluffs*
Lamb, Clara Genevieve	*Madison*
Landsberg, Gilbert Lawrence ls	*Paris, France*
Lanius, Tudor	*Palmyra, Mo.*
Larsen, Mathilda	*W. Decorah, Ia.*
LaRue, Edith Myrtle	*Wilton*
Lathrop, Bessie Lee	*New Haven, Conn.*
Laws, Alexandrina	*So. Milwaukee*
Lea, Maud ls	*Madison*
Lee, Henry Gustave ls	*Madison*

Leguia, José a	*Lima, Peru*
Leister, Henry Clinton ls	*Menomonee Falls*
Leopold, Carl Starker	*Burlington, Ia.*
Lester, John King a	*Madison*
Levitan, Abe Mortimer ls	*Madison*
Levitan, Esther ls	*Madison*
Liebig, Else Selma	*Milwaukee*
Lindegren, Alina Marie	*Superior*
Ling, Pyan ls	*Shanghai, China*
Link, Harry Adam	*Nashotah*
Lins, Hilda Marguerite ls	*Spring Green*
Linson, Daisy May ls	*Columbus, Ind.*
Littwinski, Helen Dorothy	*Freeport, Ill.*
Lloyd-Jones, Ralph ls	*Hillside*
Lloyd, Sumner Hurst	*Chicago, Ill.*
Long, Mrs. Walter S.	*N. Manchester, Ind.*
Loos, Emma	*Milwaukee*
Loernz, Leola Marie ls	*Madison*
Lovejoy, Mary Shannon	*Water Valley, Miss.*
Lubeno, Vera	*Trevor*
Luder, Earl Earnest	*Baraboo*
Lueders, Victoria	*Milwaukee*
Lusk, Grace Alberta	*Milwaukee*
McArdle, Mary Scholastica	*Tipton, Ind.*
McCordic, Almer Sheridan ls	*Zion City, Ill.*
McDonnell, Susan Josephine	*Chicago, Ill.*
McGillen, Elizabeth Agnes	*Chicago, Ill.*
McGillen, Josephine F.	*Chicago, Ill.*
McGregor, Della ls wls	*Madison*
McKee, Oliver Philip ls	*Thorp*
McKinney, Perry Osgood ls	*Janesville*
McLaughlin, Mabel ls	*Storm Lake, Ia.*
McMillen, Clifford Le Roy ls	*Ft. Atkinson*
McNeill, Halle	*Nashville, Tenn.*
McShane, Sylvia Opal	*Tipton, Ind.*
Mack, Margaret Anna	*Manhattan, Kan.*
Macklin, Robert Kirkpatrick	*Pasadena, Cal.*
Madden, Hazel	*Milwaukee*
Mahon, Katherine Margaret	*Green Bay*
Mandeville, Mabelle	*Chicago, Ill.*
Mangan, Esther ls	*Rock Elm*
Mangan, Julia ls	*Rock Elm*
Markey, Carrie	*Sullivan*
Martin, Fred Charles	*Cambria*
Martin, Mary Anne ls wls	*Madison*
Martin, Mary Elizabeth	*Starkville, Miss.*
Martin, Patrick Henry ls l	*Fond du Lac*
Marvin, Adeline R.	*Oshkosh*
Masuda, Tetsu Toru ls	*Sanuki, Japan*

Meese, Hattie Elizabeth	*Michigan City, Ind.*
Meisekothen, Hildegarde Mary ls	*Madison*
Merz, Elfrieda ls	*Madison*
Meyer, Bernard Edward	*Marion*
Meyer, Mabel M. ls	*Kirkland, Ill.*
Meyer, Rose	*Centralia, Ill.*
Meyers, Edwin Aaron ls l	*Evansville*
Miller, Cap Earl	*Sigourney, Ia.*
Miller, Walter Baker ls	*Madison*
Milne, Marjory Campbell	*Saginaw, Mich.*
Milnitz, Lillie	*Appleton*
Minsart, Anton	*Green Bay*
Minter, Thomas Stanley	*Jewett, Texas*
Mitchell, Katharine	*Milwaukee*
Mitchell, Morris Bockee ls	*Madison*
Mittelman, Edward B. ls	*Milwaukee*
Moe, Mayme Agnes Conway	*Elroy*
Montgomery, John Arthur	*Slater*
Moore, Anna Rosalie	*Cambridge*
Moore, Cornelia Sybil	*Logansport, Ind.*
Moore, Elizabeth	*Saginaw, Mich.*
Morgan, Frances Evelyn	*Fargo, N. D.*
Morgan, Lucy Lovisa ls wls	*Durand*
Moroney, Kathleen Alphonsa ls	*Dallas, Texas*
Mueller, Therese Catherine ls	*Sauk City*
Munson, Miller	*Chicago, Ill.*
Murphy, Walter Henry ls	*Elkhorn*
Myrland, Ellen Eliza	*Madison*
Narbo, Lauritz Martin ls	*Madison*
Nelson, Mrs. Murry, Jr.	*Hubbard Woods, Ill.*
Nelson, Victor Emanuel ls	*Eau Claire*
Nolte, Felix	*Atchison, Kans.*
Nuzum, Harold Nulton	*Spokane, Wash.*
Ochsner, Albert Henry ls	*Chicago, Ill.*
Oldenburg, Frederic William	*Brodhead*
Olsen, Julia Elinor	*E. Milwaukee*
Olson, Clifton Anton e	*Cornell*
Olssen, Ellen Maude Wellesley	*Nashotah*
Opperud, Ida Martha	*La Farge*
Orme, Henry William	*St. Paul, Minn.*
Orosa, Vicente	*Bauan, Batangas, P. I.*
Outhouse, Marion Lucy	*Madison*
Packard, Edgar	*Berlin*
Paddock, Bruce Brydia	*Prophetstown, Ill.*
Pan, Chu Chi a	*Kwangsi, China*
Parent, Mary ls	*Madison*
Paris, Margaret Irma	*Prairie du Chien*
Parker, Launce Spencer	*Iola*
Partridge, Elva Edyth ls	*Madison*

Patterson, Elizabeth	*Baraboo*
Patterson, Katharaine	*Glen Haven*
Peterson, Mary Sophie ls	*Kenosha*
Pflaum, Walter Otto ls	*Evansville*
Phelphs, Ella ls	*Milwaukee*
Phelps, Mary Ellenor	*Ishpeming, Mich.*
Plant, Ethel May ls	*Prentice*
Plant, Myra	*Cincinnati, O.*
Pope, John Blakeley, Jr.	*Ft. Worth, Texas.*
Powell, Frank Vavasar	*Pleasant Prairie*
Pratt, Henry Kollock	*Plainfield*
Pressentine, Olga Charlotte ls	*Madison*
Preston, Alfred Helen	*New York City*
Raeder, Lester William	*Cedarburg*
Raudabaug, Lillian	*Lima, O.*
Raymond, Alice Helena ls	*Manitowoc*
Reber, Hugh Jackson ls	*Madison*
Redd, Jessie Leitner	*Columbus, Ga.*
Reedy, Kato A.	*Chicago, Ill.*
Reese, Spencer Philip	*Clinton Jct.*
Regan, Denis James	*Hollandale*
Reyer, Will Cleveland ls	*Colby*
Richards, Arch Eldridge ls	*Geneva, Ill.*
Richards, Eva	*Madison*
Richardson, William Duncan ls	*Milwaukee*
Richmond, George Kerns	*Prophetstown, Ill.*
Rieder, Rudolph Theodore ls	*Milwaukee*
Riley, Donald Harrison Barnett	*Evanston, Ill.*
Ringling, Alice Josephine ls	*Madison*
Rintelman, Clara Augusta ls	*Milwaukee*
Ripley, Barbara Ruby	*Oakfield*
Roach, James Thomas ls	*Waterloo*
Roberts, Margaret Katherine	*Columbus*
Robinson, Florence G.	*St. Louis, Mo.*
Rockwell, Ethel T. ls	*Viola*
Rodgers, Rollin, Jr.	*Texarkana, Texas*
Roecker, William Frederick	*Menomonie*
Roehling, Otto Carl ls	*Milwaukee*
Ross, Anne Henriette Elizabeth ls	*Milwaukee*
Rossing, Viola Marie	*Argyle*
Rothschuh, Rudolf Hermann Otto	*Eisenach, Germany*
Rowe, Ella A.	*Chicago, Ill.*
Roy, Basanta Koomar ls	*Calcutta, India*
Russell, Nellie Blanche	*Kansas City, Kan.*
Rutherford, William Lincoln ls	*Madison*
Ryan, Willard James	*Ashland*
Sabean, Izzetta Lee	*Shell Lake*
Saevig, August Olaf	*Argyle*
Salter, Jennie May ls	*Unity*

Samels, Claire Bertha	*Chicago, Ill.*
Samuels, Alexander Felix	*West Salem*
Sanford, Maude Emily	*Akron, O.*
Sansum, Harriett Grace	*Baraboo*
Sansum, Margaret May	*Baraboo*
Sansum, William David	*Ellsworth*
Saunders, George Edmounde	*Emmetsburg, Ia.*
Schaefer, Leo Henry	*Muscoda*
Schatz, Walter Phillip ls	*Wayside*
Schell, Harmon Franklin	*Yorkville, Ill.*
Schell, Nellie James	*Yorkville, Ill.*
Schlatter, Edmund Fred	*Milwaukee*
Schmidt, John Johnson ls	*Madison*
Schmitz, Edgar F.	*St. Louis, Mo.*
Schmitz, Erwin Anthony	*St. Louis, Mo.*
Schneider, William John e	*Horicon*
Schneller, Anna Margaret	*Prairie du Sac*
Schraa, Nicholas Charles	*So. Milwaukee*
Schranck, Henry Charles, Jr. ls	*Milwaukee*
Schreier, John August ls	*Milwaukee*
Schroeder, Ella Louise	*Milwaukee*
Schroeder, Ernest Leopold ls m	*Shawano*
Schubert, Martha	*Sheboygan*
Schuette, Amanda Helene	*Green Bay*
Schulz, Elsie J.	*Milwaukee*
Schumann, Hedwig	*Milwaukee*
Schwede, Charles William	*Grand Rapids*
Schweitzer, Irving Le Roy	*Malta, Ill.*
Scott, Walter Alexander	*Augusta*
Seeman, Frank John ls	*Kewaunee*
Seifert, Joanna Elizabeth	*Chicago, Ill.*
Sell, L. Ira	*Reeseville*
Semmelmeyer, Madeline ls	*Chicago, Ill.*
Seward, Walter Edgar ls	*Alton, N. H.*
Shafer, Maude Foster	*So. Milwaukee*
Shallcross, Alice Lewis	*St. Louis, Mo.*
Shearer, Elga Meta	*Kenosha*
Shepard, Katherine Hastings	*Mineral Point*
Shepard, Welcome Stuart	*Union, Ill.*
Shillander, Arthur Alexis	*Towner, N. D.*
Shipley, George Adam ls	*Madison*
Simmons, Mattie Luella	*Platteville*
Sion, Justin	*Atchison*
Sister Mary Alexia	*Eagle Grove, Ia.*
Sister Mary Alicia	*Madison*
Sister Mary Coronata	*Sinsinawa*
Sister Mary Eulogia	*Green Bay*
Sister Mary Eugenius	*Milwaukee*
Sister Mary Fidelis	*Madison*

Sister Mary Grace	*Milwaukee*
Sister Mary Irma	*Fond du Lac*
Sister Mariola	*Sinsinawa*
Sister A. Mechtilda	*Green Bay*
Sister M. Gertrude Quinn	*Sinsinawa*
Sister Mary Roberta	*Fond du Lac*
Sister Mary Virginia	*Madison*
Skinner, John Sharp	*Princeton, Ill.*
Skowlund, William Nels	*Peshtigo*
Slack, Jennie Elizabeth	*Chicago, Ill.*
Sliwinski, Albert Adolph ls	*Oconomowoc*
Smith, Callie Sutherland ls	*De Pere*
Smith, Ethelyn	*Madison*
Smith, Kate Ida	*Mandan, N. Dak.*
Smith, Kenneth Loveland ls	*City of Mexico, Mex.*
Smith, Meredith	*Omaha, Neb.*
Smith, Raymond Allyn	*Tomah*
Snyder, Harry Evan	*Milwaukee*
Sommers, Samuel Alexander	*Cincinnati, O.*
Spielmacher, Margaret	*Superior*
Spitler, Woodhull Irwin	*Rensselaer, Ind.*
Squires, Benjamin Morris ls	*La Farge*
Stapleton, Alice Agatha	*River Falls*
Steagall, John Roscoe	*Carbondale, Ill.*
Stecker, Hannah Dora	*Cincinnati, O.*
Steen, Anna Corinne ls	*Madison*
Steiner, Herbert Reuben	*Elk Mound*
Stevens, Eleanor Graham	*St. Louis, Mo.*
Stevens, Margaret	*St. Louis, Mo.*
Steward, Samuel Elmer	*Seymour*
Stewart, Carolyn Anne	*Indianapolis, Ind.*
Stewart, John Thomas	*Wellington, Kan.*
Stewart, Maud	*So. Milwaukee*
Stone, Millie Coe ls	*Reedsburg*
Stoney, Ruth Frances	*Clinton*
Storie, Agnes Groves	*Lodi*
Story, Harold Willis ls	*Wauwatosa*
Sullivan, William Kirk ls	*Oak Park, Ill.*
Sutherland, Ethel Adele	*Fond du Lac*
Swartz, John William e	*Genoa Jct.*
Sweeney, Ella Louise	*Providence, R. I.*
Talbot, Minnie Julia ls	*Berlin*
Taylor, John Wills	*Linden*
Thackray, Helen Charlotte	*Glenbeulah*
Thatcher, Lucy Emma	*Brookfield*
Thayer, Thaxter Crugier ls	*Madison*
Thiel, Richard Benjamin	*Madison*
Thompson, James Stacy	*Ligonier, Ind.*
Thompson, Lucien Orrin	*Omaha, Nebr.*

Thompson, Victor Emanuel	*Grand Rapids*
Thomson, Janet Elizabeth	*Oregon*
Tiernan, William Lawrence	*Edgerton*
Tilden, Chloe Elizabeth	*Wausau*
Tindall, Floyd George ls m	*Belleville*
Tolan, Nina	*Ironwood, Mich.*
Tollevson, Albert Genius	*Viroqua*
Torgerson, Theodore	*Ontario*
Towne, Jessie Keith	*Eau Claire*
Trautman, Bertha ls	*Decatur, Ill.*
Tseng, Yu Mei a	*Shanghai, China*
Tsu, Wen Shion ls	*Soo Chow, China*
Twetten, Jennie	*Milltown*
Uhen, Rudolph ls	*Burlington*
Umhoefer, Anton Xavier ls	*Colby*
Unger, Johanna Odenwald	*Chicago, Ill.*
Vance, Preston Thompson a	*Louisville, Ky.*
Van Hise, Olive May	*Demorest, Ga.*
Vaughan, Ione	*Green Bay*
Veirs, Kenneth	*Rochester, Ind.*
Vergeront, Grace Margaret ls	*Madison*
Vieth, Arnold Anton	*Norwalk*
Voge, Emma Freda	*Appleton*
Voge, Theresa	*Appleton*
Wadleigh, Matthew Fletcher ls	*Stevens Point*
Wahl, Frederick Rice ls	*Madison*
Wahl, John Jacob ls	*Madison*
Wallin, James Roy	*Eastman*
Wallin, Zenas Beach ls	*Madison*
Walther, Max	*Medford*
Way, Ruth Cecelia	*Necedah*
Webb, Roscoe C.	*Tracy, Minn.*
Weberg, Oscar John	*River Falls*
Welbourne, Harry Elliott	*West Allis*
Wells, Chester C. ls	*Madison*
Wells, Donald Breckenridge	*Hartford, Conn.*
Wells, Florence Adele	*Wauwatosa*
Welsh, Mary R.	*Milwaukee*
Wendels, Maria Anna	*Baraboo*
West, Saida Wood	*Cincinnati, O.*
West, Susanna	*Norwood, O.*
Wherry, Sarah A.	*Chicago, Ill.*
Whidden, Marian	*Oak Park, Ill.*
White, Eldora	*Clinton, Ia.*
Wickman, Arnold M. F. ls	*Detroit Harbor*
Wiese, Otto ls	*Madison*
Wiegand, Marie C.	*Sheboygan*
Wiesender, Rose ls	*Green Lake*
Wightman, Belle	*Mazomanie*

Williams, David Edward	*Fox Lake*
Willits, Laura	*St. Louis, Mo.*
Winkler, Emily Alva	*Muskogee, Okla.*
Witcher, Alice	*Olney, Ill.*
Woo, Fyon You	*Madison*
Wolf, Helen Margaret ls	*Madison*
Woodard, Selwyn Clark ls	*Madison*
Worthington, Fred ls	*Milwaukee*
Wright, Clark Gage	*Winslow, Ill.*
Yabe, Masao ls	*Chikaben, Japan*
Zimmer, Arthur Ray	*Grandville, Mich.*

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ENGINEERS

Graduates

Brown, Alfred Bruce, g — *Alexandria, S. D.*
B. S., University of South Dakota.

Cook, Maynard Albert — *Alma, Mich.*
B. A., Alma College.

Crane, Arthur Griswold — *Jamestown, N. D.*
B. S., Carleton College.

Garrett, Leon Ellis, g — *Rollo, Mo.*
B. S., Missouri School of Mines.

Hadley, Laurence H. — *Richmond, Ind.*
M. A., University of Michigan.

Hixon, Charles Robert — *Perote, Ala.*
M. E., Alabama Polytechnic Institute.

Kittrell, Charles Anan — *Farmland, Ind.*
M. A., Wilmington College.

Larson, Gustus Ludwig — *Moscow, Idaho.*
B. S., University of Idaho.

Mangold, John Frederic — *Specht's Ferry, Ia.*
B. S. Cornell College.

Mitchell, Brainerd, Jr. — *Fayetteville, Ark.*
B. M. E., University of Arkansas.

Ochoa, Eugene de — *Madison.*
B. S., Purdue University.

Stelzner, William Boyd — *Fayetteville, Ark.*
B. E. E., University of Arkansas.

†Thomas, Albert Lee — *Auburn, Ala.*
M. S., Alabama Polytechnic Institute.

†Advanced course for the training of teachers.

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Undergraduates and Artisans

Andree, Richard A. e	*Milwaukee*
Ankeney, Stewart Hill e	*Madison*
Badger, Arthur Hewitt e	*Madison*
Bailey, Paul Edward	*Menomonie*
Ban, Rinji e	*Tokyo, Japan*
Barclay, Arthur Jackson e	*Elgin, Ill.*
Beebe, Gordon Alcott e	*Beloit*
Beebe, Horace Merle e	*Fond du Lac*
Bickelhaupt, William Vernon e	*Aberdeen, S. D.*
Birch, Albert e	*Fargo, N. D.*
Blodgett, Charles Wallace e	*Green Bay*
Blomeyer, Roscoe Stanhope e	*Milwaukee*
Borchenius, Harold e	*Madison*
Boss, Alward Mitchell	*Duluth, Minn.*
Bray, Mark Wilder	*Appleton*
Broker, Albert Edward g	*Lindsey*
Burmester, Everette Almond e	*Madison*
Byrnes, Charles Winfield	*Oconomowoc*
Cary, Harold P. L. ls	*Madison*
Case, Harry Jackson ls	*Racine*
Chin, Yushu e	*Anhui, China*
Church, Arthur Potter e	*Whitewater*
Clark, Roscoe Perry	*Indianapolis, Ind.*
Cummings, Frank Nelson	*Belvidere, Ill.*
Curwen, William Harrison e	*Shullsburg*
Dale, Drake Paul e	*Madison*
Davey, John Alfred	*Painesdale, Mich.*
Davila, Lorenzo Juan e	*Juana Diaz, Porto Rico*
Davis, Lloyd Edward e	*Redgranite*
Dawson, Francis Anderson e	*Reynolds, Ill.*
Distelhorst, Charles Andrew Robert e	*Dorchester*
Dressendorfer, Arthur Emil e	*Madison*
Duffie, George Lauren e	*Ripon*
Dyer, Claude Just e	*Lebanon, Ill.*
Eleazarian, Aram M. e	*Madison*
Ely, Alexander White e	*Edgerton*
Esau, Carl William e	*Milwaukee*
Evans, Leonard Ray	*Sheboygan*
Falk, Gordon Sands	*Milwaukee*
Farr, Bert Henry	*Fairwater*
Fehlandt, William Louis e	*Madison*
Fellows, Kenneth Albert e	*Lodi*
Fraser, John, Jr. e	*Milwaukee*
Fucik, Robert Alexander	*Williams Bay*
Gamboa, Nicholas August	*Cienfuegos, Cuba*
Garlock, Lewis F. e	*Madison*

Glover, Louis Earl e	*Oshkosh*
Goeke, Otto Fred e	*Davis, Ill.*
Goggin, Charles Alexander	*Morenci, Ariz.*
Goodland, Rudyard Lewis e	*Racine*
Grant, Arthur Charles	*Madison*
Grant, Daniel McPherson e	*Milwaukee*
Gray, George Littleton	*South Bend, Ind.*
Griswold, John William e	*West Salem*
Haag, Edmund Clarence e	*Whitewater*
Habrylwicz, Valentine Bernard	*Chicago, Ill.*
Hart, Ray Weston	*Madison*
Himmelstein, Arthur L. e	*Milwaukee*
Holverscheid, Erwin e	*Hinsdale, Ill.*
Hunting, Ralph William e	*Fort Wayne, Ind.*
Jamieson, John Rodney e	*Poynette*
Johnson, J. Hugo e	*Madison*
Jones, Louis Dewitt e	*Waukegan, Ill.*
Jones, Marion Edgar	*Culver, Ind.*
King, Ralph Siervens e	*Madison*
Kirch, Charles Hugo e	*Mazomanie*
Kleck, Carl Frederick e	*Milwaukee*
Kozarek, Steven A. e	*Antigo*
Krell, Samuel Arthur e	*Madison*
Kroening, Ralph Henry e	*Milwaukee*
Labram, Fred William e	*Chicago, Ill.*
Lamont, Maurice Brereton e	*Aberdeen, S. D.*
Larsen, Herman	*La Crosse*
Loetscher, Arnold Edward ls	*Dubuque, Ia.*
Lowell, John W., Jr. e	*Washington, D. C.*
Ludberg, Andrew e	*Spokane, Wash.*
McEachron, Fred	*Racine*
McMurry, William Matthew e	*Lake Preston, S. D.*
Macaraeg, Juan Guico e	*Binalonan, Pang, P. I.*
Markwardt, Lorraine Joseph e	*Lansing, Ia.*
Mead, Harold Washburn	*Madison*
Mears, George Sherman e	*Fond du Lac*
Meincke, John W. e	*Milwaukee*
Meinecke, Ferdinand, Jr. e	*Milwaukee*
Mengel, Forest Foster e	*Oconomowoc*
Merkel, Richard Hans e	*Sauk City*
Merken, Abraham E.	*New York City*
Moiseyeff, Leonard e	*Tomsk, Siberia, Russia*
Moy, Bock Ton	*Milwaukee*
Murrish, William Ulysses e	*Mazomanie*
Nee, Patrick Joseph	*Superior*
Olson, Lester F. e	*Madison*
Pearsall, William Gilchrist e	*McGregor, Ia.*
Peirce, Walter Anderson e	*Madison*
Priessman, Neil Young e	*Madison*

Reber, Louis E., Jr. e	*Madison*
Redfield, Frank Otis e	*Stevens Point*
Reid, Bryan Seaborne e	*Ashland*
Reilly, Thomas William e	*Port Washington*
Robertson, Almon Fulton e	*Livingston, Mont.*
Romana, Juan L. de	*Arequipa, Peru*
Rynning, Paul Bertheau	*La Crosse*
Sarkis, Agop Boshnakian e	*Constantinople, Turkey*
Scarcliff, George Allen e	*Janesville*
Schilling, Walter William e	*Green Bay*
Schneider, Martin P. e	*Madison*
Schroeder, George Edward e	*Augusta*
Schwada, Joseph Phillip e	*Milwaukee*
Scudder, Charles Morrison e	*Marinette*
Shoop, Sidney Allen ls	*Streator, Ill.*
Smith, Frederick Slocum Howland e	*Janesville*
Smith, Leon A. e	*Madison*
Smith, Robert Matthew e	*Madison*
Starkey, Harry Nicholl e	*Eau Claire*
Stengl, Rudolph John e	*Antigo*
Stoddard, Leroy Lester e	*Platteville*
Sturgeon, Edward Tyler e	*Chicago, Ill.*
Sweet, Nathan Clark e	*Fond du Lac*
Taylor, John Atkinson e	*New Lisbon*
Tesch, George Elwin	*Neenah*
Thompson, Oscar Theodore e	*So. Kaukauna*
Touton, Luis	*Edgerton*
Trayer, George William e	*Lansing, Ia.*
Tronvig, William Peter	*Kenosha*
Van Loon, William Owen	*Madison*
Voyer, Leonard Eugene	*Junction City*
Vroman, Harry Westrope e	*Verona*
Wagner, James Henry	*Chilton*
Walters, Lee David e	*Madison*
Wasson, Joe Houston e	*Smithville, Ark.*
Wetzel, William John	*Madison*
Whomes, Walter e	*Madison*
Wiedenbeck, Harry John e	*Mauston*
Wiesinger, Emil Morris	*Schenectady, N. Y.*
Wohra, Har Das e	*Piro Shah, Gujarat Punjab, India*
Wolff, Werner Peter e	*Cumberland*
Würdemann, Converse e	*Milwaukee*
Zeidelhack, Felix Stephen	*Milwaukee*

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AGRICULTURE

Graduates

Barbour, Louise B. A., Cornell University.	*Indianapolis, Ind.*
Burns, Harry Garfield B. S., University of California.	*Ft. Atkinson.*
Curtis, Joseph C., g B. S. A., University of Wisconsin.	*New Lisbon.*
†Davis, Charles Wesley M. S., Iowa State College.	*Douglas, Ga.*
Drayer, Howard C. M. A., Washington University.	*St. Louis, Mo.*
Heindel, Roy Lyman B. A., Lake Forest College.	*New Lisbon.*
Koontz, Clarence Edgar B. A., William and Mary College.	*Luray, Va.*
Luther, Ernest Leonard, a. B. A., Olivet College.	*Hart, Mich.*
Mawhorter, Walter Ransom, a B. A., Hillsdale College.	*Wawaka, Ind.*
Potter, Herman Monroe B. A., University of Wisconsin.	*Madison.*
Sutherland, Sarah Augusta B. S., University of Wisconsin.	*Madison.*
Vittum, Merle Watson B. A., Illinois College.	*Knoxville, Ill.*
White, Frank, g B. S., University of Illinois.	*Madison.*
Young, Arthur Edwin B. A., Northwestern University.	*Evanston, Ill.*

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Undergraduates

Berry, Walter Stewart	*Glendale, O.*
Boll, Fern Esther a	*Rice Lake*
Boon, Sally Knox	*Carthage, Mo.*
Burdette, Fielden Calvin	*Pendleton, Ind.*
Burke, Edwin Eugene	*Waukesha*
Carter, George Byron a	*Madison*
Clark, Warren William a	*Madison*
Clark, William Walter	*Ellsworth*
Crane, Lura	*Jamestown, N. D.*
Dohmen, Anita Louise a	*Milwaukee*
Doty, Harry W. a	*Madison*
Drotning, Anna Elizabeth a	*Deerfield*
Enright, Eleanor a	*Janesville*

† Advanced course for the training of teachers.

Field, Albert Martin a	*Cambridge*
Finner, Ewald Reinhard a	*Dodge*
Garland, John Jepson a	*Wellington, Kans.*
Godwin, Alice Cornelia	*Grand Rapids, Mich.*
Graham, John Cameron a	*Madison*
Griffin, Warren Orville	*Oregon*
Hoeffel, Merrill Joseph a	*Green Bay*
Kelley, George Vincent	*Princeton*
Kelly, Christmas a	*Milwaukee*
Klumb, Hugo Gottfried Nicholaus a	*Kewaskum*
Kuhns, Clarissa Augusta a	*Madison*
Leith, Benjamin Donald a	*Madison*
Lyford, Charles Conover a	*Oak Park, Ill.*
McNown, Mark Freeman a	*Madison*
Manning, Hazel a	*Madison*
Marshall, James Disraeli	*Madison*
Mead, Harriet Belle	*Clinton, Ia.*
Mead, Hazel Marguerite a	*Madison*
Meston, Agnes	*Hastings, Neb.*
Miller, Frank Martin	*Deer Park*
Moore, George Elkington a	*Madison*
Moore, Milton Donaldson	*Washington, D. C.*
Morris, George C. a	*Madison*
Nethling, Johannes Henoch	*Lydenurg, Transvaal, So. Africa*
Palit, Barendra Kumar a	*Bengal, India*
Powell, Thomas Charles a	*Reedsburg*
Raftery, Agnes Beatrice a	*Token Creek*
Roeseler, John Samuel a	*Madison*
Scott, Verner Ephraim a	*Stockbridge*
Stewart, Laura Miriam a	*Madison*
Taylor, Homer Rasamal	*New Carlisle, Ind.*
Taylor, William Septimus a	*Bowling Green, Ky.*
Truitt, Albert Charles ls	*Madison*
Turner, Annabell a	*Milwaukee*
Wadleigh, Samuel Ellis	*Stevens Point*
Warren, David Mack a	*Chicago, Ill.*
White, William Charles	*Canton*
Yorgey, Roxie Marie a	*Horicon*

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LAW

Ashcraft, William Dugan	*Brandenburg, Ky.*
Belle, Sam Dent, B. A., LL. B.	*Nashville, Tenn.*
Benson, John Cabot l	*Heron Lake, Minn.*
Boyce, Merton Vernal l	*Madison*
Browne, J. Howard	*Chippewa Falls*
Buchen, Gustave William, B. A.	*Sheboygan*
Bunker, Eugene Francis l	*Madison*

Burton, Lambert, M. A.	*Atchison, Kans.*
Buscheck, Alfred Joseph	*Manitowoc*
Coorsen, Louis Arthur, B. A. l g	*Milwaukee*
Cronin, Timothy Theodore, Ph. B.	*Oconomowoc*
Duvall, Alexander Wilson, B. A.	*Shandon, O.*
Edwards, Verne Robert	*Bloomington*
Faulkner, William Ernest, B. A.	*Barbourville, Ky.*
Fletcher, Clark Robinson l	*Waukesha*
Goggins, Hugh William l	*Grand Rapids*
Grady, Albert William, B. A. l	*Port Washington*
Groom, Samuel Burton l	*Milwaukee*
Haase, Oscar Rudolf, B. A. l g	*Milwaukee*
Hudson, James Franklin, B. A.	*Columbia, Mo.*
Jenswold, Franklin Ernest	*Baraboo*
Kelly, Albert Matthew	*Milwaukee*
Kingsford, Alfred Charles, B. A.	*Sheboygan Falls*
Lonsdorf, John Andrew	*Manitowoc*
McElvain, William Wesley	*Caruthersville, Mo.*
McKinney, Frederick Harold l	*Butternut*
McPherson, LeRoy l	*Dodgeville*
Maxwell, Oliver Granville	*Oakdale, Ill.*
Michelson, Albert G., B. L.	*Mt. Horeb*
Murphy, James Roach	*Chippewa Falls*
Murphy, Peter J. ls	*Madison*
Noyes, Haskell, B. A. l	*Milwaukee*
Orchard, Milton, Ph. B.	*Muscoda*
Paul, Milton James l	*Platteville*
Regan, John H. l	*Chippewa Falls*
Riordan, Benjamin Raphael	*Port Washington*
Ritland, Owen l	*Elroy*
Roberts, John Archibalde l	*Columbus*
Sprague, William Harvey, B. A.	*Elkhorn*
Stiehm, Ewald Otto, B. A.	*Johnson Creek*
Thomas, John Dokon	*Chicago, Ill.*
Toebaas, Oscar Theodore l	*San Diego, Cal.*
Tolg, Clarence Charles l	*Madison*
Trotter, James Russell, B. A., M. A.	*Morgantown, W. Va.*
Tuttle, Oral Percevial	*Honisburg, Ill.*
Whitney, Wildon F.	*Whitewater*
Wong, Ko-un l	*Hankow, China*

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DAIRY SCHOOL

Johnson, Joseph Malven	*Hople, N. D.*
Kashiwa, Masakichi	*Micken, Japan*
Krejcie, Eddie	*Maribel*
Magnuson, Henry	*Woodford*
Peck, Hazen David	*Milwaukee*
Rodda, Matthew Arnold	*Jonesdale*

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SUMMARY OF STUDENTS

GRADUATE SCHOOL—347

Fellows		33
Scholars		20
Other Graduate Students		294

COLLEGE OF LETTERS AND SCIENCE—2472

Graduate Students		270
Senior Class		410
Junior Class		478
Sophomore Class		513
Freshman Class		642
Adult Special Students		110
Two-Year Pharmacy Students		41
Medical Students not Given Double Classification		8

Included in the above are the following:

Course in Commerce—311

Senior Class		24
Junior Class		57
Sophomore Class		79
Freshman Class		136
Adult Special Students		15

Course for Normal School Graduates—54

Senior Class		21
Junior Class		33

Course in Pharmacy—47

Four Years' Course	Juniors	1
	Freshman	5
Three Years' Course		5
Two Years' Course	Second Year	15
	First Year	21

Course in Chemistry—65

Senior Class		5
Junior Class		23
Sophomore Class		17
Freshman Class		16
Adult Special Students		4

Medical School—47

Second Year		23
First Year		24

COLLEGE OF ENGINEERING—807

Graduate Students		44

Senior Class—120

Civil Engineering Course		50
Mechanical Engineering Course		23
Electrical Engineering Course		33

Chemical Engineering Course			5
Mining Engineering Course			9
Junior Class—172			
Civil Engineering Course			69
Mechanical Engineering Course			33
Electrical Engineering Course			51
Chemical Engineering Course			10
Mining Engineering Course			9
Sophomore Class—208			
Civil Engineering Course			58
Mechanical Engineering Course			54
Electrical Engineering Course			61
Chemical Engineering Course			15
Mining Engineering Course			20
Students in Advanced Course included in the above:			
Civil Engineering Course	17		
Chemical Engineering Course	8		
Electrical Engineering Course	23		
Mechanical Engineering Course	5		
Mining Engineering Course	3	—56	
Freshman Class			233
Adult Special Students			30
COLLEGE OF AGRICULTURE—602			
Graduate Students			33
Long Course: Seniors	47		
Long Course: Juniors	68		
Long Course: Sophomores	91		
Long Course: Freshmen	138		
Long Course: Adult Special Students	25	—	369
Middle Course: Second Year	27		
Middle Course: First Year	56		
Middle Course: Adult Special Students	17	—	100
Home Economics: Seniors	13		
Home Economics: Juniors	16		
Home Economics: Sophomores	28		
Home Economics: Freshman	42		
Home Economics: Adult Special Students	1	—	100
LAW SCHOOL—148			
Third Year			29
Second Year			35
First Year			34
Seniors in Letters and Science Electing Law Studies			17
Unclassified Students			33
SCHOOL OF MUSIC—74			
Graduates			3
Seniors			2
Juniors			2
Sophomores			5
Freshman			13

Supervisors' Course	Second Year		6
	First Year		9
Adult Special Students			8
Unclassified Students			26
Students in other colleges electing music—180			
WISCONSIN LIBRARY SCHOOL—29			
Library Course			18
Joint Course			11
SUMMER SESSION OF 1910-1263			
Letters and Science—			
Graduate Students		367	
Undergraduates and Teachers		627	
Law School		47	
Engineers—			
Graduate Students		13	
Undergraduates and Artisans		138	
Agriculture—			
Graduate Students		14	
Undergraduate Students		51	
Dairy School		6	—1263
Deducting students now attending the University			434—829
Total			4961
Twice enumerated 34, leaving			4927
ADDITIONAL ENROLLMENT, COLLEGE OF AGRICULTURE—			
Short Course	Second Year	190	
	First Year	283	—473
Dairy Course			138
Grand Total			5538
EXTENSION DIVISION (EXTRA MURAL COLLEGE)—			
Correspondence—Study Department			3931

(This total enrollment comprises all those who have enrolled for correspondence instruction within the current year, and also those carried over who had enrolled prior to July 1, 1910, but whose registration was then in force and whose time limit for completion of work had not terminated. Correspondence-study enrollments are made at any time throughout the entire year.)

In the above classification are included students enrolled in the Course for Training of Teachers as follows: Seniors, 235; Juniors, 198; and in the Advanced Course, 50.

In the enumeration of adult special students above, the classification by courses is as follows: Letters and Science, fourth year, 2; third year, 10; second year, 27; first year, 71. Music, fourth year, 1; second year, 4; first year, 3. Civil Engineering, third year, 3; second year, 1. Mechanical Engineering, fourth year, 2; third year, 1; second year, 4. Electrical Engineering, fourth year, 1; second year, 2. Mining Engineering, third year, 1; second year, 1. Chemical Engineering, second year, 1. First-year students in Engineering, 13. Agriculture, fourth year, 1; third year, 4; second year, 8; first year, 13. Agriculture (Middle Course), second year, 3; first year, 14.

SUMMARY BY STATES, FOREIGN COUNTRIES AND SEX

	Men	Women	Totals
Wisconsin	2,838	1,082	3,920
Illinois	355	135	490
Iowa	94	68	162
Indiana	77	34	111
Ohio	60	23	83
Michigan	41	33	74
Minnesota	39	25	64
Missouri	42	15	57
South Dakota	35	15	50
New York	34	15	49
North Dakota	25	11	36
China	33	..	33
Kansas	17	15	32
Montana	17	10	27
Kentucky	12	9	21
Nebraska	12	9	21
Pennsylvania	18	3	21
Texas	17	2	19
Japan	18	..	18
California	13	4	17
Massachusetts	13	3	16
New Jersey	13	1	14
Tennessee	8	5	13
Washington	12	1	13
Colorado	8	4	12
Oklahoma	6	3	9
District of Columbia	7	1	8
Idaho	3	4	7
South Carolina	7	..	7
West Virginia	4	3	7
Maryland	4	2	6
India	6	..	6
Alabama	4	1	5
Arkansas	5	..	5
Connecticut	4	1	5
Georgia	1	4	5
Mexico	5	..	5
Mississippi	2	3	5
Ontario	4	1	5
Oregon	4	1	5
Philippine Islands	4	1	5
Virginia	5	..	5
Transvaal	4	..	4

	Men	Women	Totals
Turkey	4	..	4
Utah	3	1	4
Arizona	2	1	3
Germany	1	2	3
Maine	2	1	3
New Hampshire	3	..	3
Quebec	1	2	3
Rhode Island	..	3	3
Russia	3	..	3
Cuba	2	..	2
Florida	2	..	2
Louisiana	2	..	2
New Mexico	1	1	2
North Carolina	2	..	2
Peru	2	..	2
Porto Rico	2	..	2
France	2	..	2
Vermont	..	2	2
Alberta	1	..	1
Austria	1	..	1
Belgium	1	..	1
Brazil	1	..	1
Hawaii	1	..	1
Holland	1	..	1
New Brunswick	1	..	1
Norway	1	..	1
Nova Scotia	1	..	1
Persia	1	..	1
Queensland	1	..	1
Saskatchewan	1	..	1
Sweden	1	..	1
Wyoming	..	1	1
Totals	3,977	1,561	5,538

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